West Yorkshire Combined Authority Rail Strategy

Draft v8.00

Summer 2023

Contents

Foreword

Our ambition for the rail network in West Yorkshire

As Mayor and Leaders of West Yorkshire we are determined to create a region that works for everyone. We need Government to back our ambitions for a stronger, fairer and better-connected North if we are to achieve this.

The people of our region deserve an integrated system fit for the 21st century that is greener, simpler and cheaper. We need better buses, more reliable rail services and a mass transit system.

We want a strong and inclusive economy, with a reliable and efficient transport system, both within our region and beyond. But we are being held back by an ageing rail network and decades of underinvestment.

The rail network plays an important part in the lives of everyone and every business in West Yorkshire, connecting our towns and cities together, and linking our region to the rest of the North.

Passenger services take people to work and education, important appointments, to the shops, events and nights out with friends.

Freight services take goods across the Pennines, along the Aire Valley, to and from our seaports and contribute to the economic prosperity of the region. Our Rail Strategy identifies the investment our railways need to meet expectations of the people of West Yorkshire.

It sets out how we can address the urgent issues impacting our railways, including the need for additional capacity and service frequency to improve passenger experience. It also sets out the infrastructure we need for the future and the long-term investment programme to maintain the existing rail network.

We've looked at what we need from our rail services and infrastructure, identified the gaps that need to be addressed and made recommendations for the future.

But this can't be done in isolation. We need a fully integrated transport network, that brings together rail, bus, mass transit, cycling and walking, that gets people out of the cars, and allows people to choose the best method of transport for their journey.

To deliver our ambitions, we need fairer investment from Government and in our railways to help create a reliable, cheaper and easier to use network.

This work underpins our ask to Government and demonstrates how a better rail network in our region will contribute to greater economic growth and prosperity, not just in West Yorkshire but across the North and for the benefit of the whole UK.

Introduction and Strategic Context

West Yorkshire's Rail Network

Rail is a central part of West Yorkshire's public transport network. Over 70 million passengers used the region's 69 stations in the year prior to the COVID-19 pandemic, and over 30,000 passengers arrived at the region's five biggest stations every morning rush hour. Ridership has returned strongly since the pandemic.

Our region is the UK's largest economy outside of London, and is the single biggest contributor to the Northern Powerhouse in economic terms. Our rail network, illustrated on the following page, has helped grow our region to this point, but is reaching the limit of how much economic, housing, and employment growth it can support.

The rail network is constrained by its Victorian infrastructure, which in many places is no longer fit for purpose. Journey times are slow compared to national averages, and in many cases perform poorly compared to the car.

Low levels of historic investment in our region's infrastructure have contributed to productivity levels lagging behind the rest of the UK and Europe, despite the size of our economy.

CO_2 emissions from our transport network make up 39% of the region's total, higher than the national average. The environmental impact of our transport network is a major challenge which we must address to tackle the climate emergency and reach regional and national net-zero targets.

Rail, as a low-carbon and efficient means of linking people to opportunities and goods to their customers, has a vital role to play in achieving our economic, social and environmental goals.

West Yorkshire's rail network

Legend:
- Wharfedale line
- Airedale line
- East of Leeds to York/Selby
- Harrogate Line
- Calder Valley line
- Penistone line
- TransPennine West
- Hallam line
- Dearne Valley line
- West Riding line
- Five Towns
- Keighley and Worth Valley Railway
- East Coast Mainline
- Freight only
- Freight and diversionary route
- Routes to other destinations

Please note: The colour coding of different lines in this map is for line identification purposes only and do not denote service patterns

Off-map destinations:
- Carlisle / Lancaster
- North East / Scotland
- Scarborough
- Preston / Blackpool
- Selby
- Hull
- Merseyside / North Wales
- Goole
- Lincolnshire
- Manchester Airport / West Midlands / South West
- East Midlands / South East / West Midlands / South West
- East Midlands / South East / East of England

Stations:
Swinden Quarry, Skipton, Ilkley, Ben Rhydding, Burley-in-Wharfedale, Menston, Guiseley, LBA Parkway*, Harrogate, Harrogate, Horsforth, Steeton & Silsden, Ingrow (West), Keighley, Damems, Oakworth, Haworth, Oxenhope, Crossflatts, Bingley, Saltaire, Baildon, Shipley, Apperley Bridge, Headingley, Burley Park, York, Frizinghall, Kirkstall Forge, Bradford, Forster Square, Interchange, Leeds, Cross Gates, Garforth, Micklefield, New Pudsey, Bramley, East Garforth, Thorpe Park*, Hunslet, Low Moor, Cottingley, White Rose*, Woodlesford, Halifax, Hebden Bridge, Sowerby Bridge, Brighouse, Morley, Outwood, Castleford, Glasshoughton, Monkhill, Knottingley, Todmorden, Mytholmroyd, Elland*, Batley, Dewsbury, Mirfield, Ravensthorpe, Westgate, Normanton, Featherstone, Pontefract, Walsden, Deighton, Wakefield, Kirkgate, Streethouse, Tanshelf, Baghill, Huddersfield, Sandal & Agbrigg, Lockwood, South Elmsall, Slaithwaite, Berry Brow, Fitzwilliam, Rochdale, Marsden, Honley, Moorthorpe, Brockholes, Shepley, Darton, Monk Bretton, Stocksmoor, Denby Dale, Barnsley, Victoria, Piccadilly, Stalybridge, Manchester, Sheffield, Doncaster, Burnley Manchester Road

Investment in rail

West Yorkshire has strong ambitions for sustainable and socially inclusive economic growth, and to achieve it we need a reliable and efficient transport system, within, to, and from the region.

Our economy and our ambitions are being held back by years of underinvestment in our public transport network.

Currently:

- More than one in five people in West Yorkshire live in areas within the 10% most deprived in England (equating to over 500,000 people).
- Leeds and Sheffield have a combined GVA of £96 billion per annum and are only 29 miles apart but most train journeys between them take over an hour. Many other journeys between major centres are unacceptably slow:

Key Facts: Average Speed by Rail

Leeds – Bradford Interchange	28 mph
Huddersfield – Sheffield	29 mph
Leeds – Sheffield	39 mph
Manchester Victoria – Bradford Interchange	42 mph

- Average spending per head on transport in Yorkshire and the Humber was £3,611 (over the past decade), compared to £4,728 across the UK and £9,502 in London. If the North received the same spending as London since 2015, it would have received £51 billion more.

Why this investment matters

Investment in our rail network will help create jobs and attract investment that would benefit people across the North. The environmental impact of more people moving away from private vehicles to public transport, as well as taking freight off our roads and on to our railways, will make a significant contribution to our objective of a net-zero carbon regional economy by 2038.

In addition:

- A new Northern Powerhouse Rail (NPR) line between Leeds and Manchester via Bradford city centre and a new line between Leeds and Sheffield supporting both NPR and HS2 services could deliver a combined £84 billion boost to our regional economy with the potential to support the delivery of 180,000 jobs and 26,000 new homes in the cities of Bradford and Leeds.
- As part of Transpennine Route Upgrade (TRU), it will support 8,000 roles including 4,000 new jobs and 20% of the new jobs will be from underrepresented groups. TRU will create 500 apprentices and over 30,000 placement days for our young people.
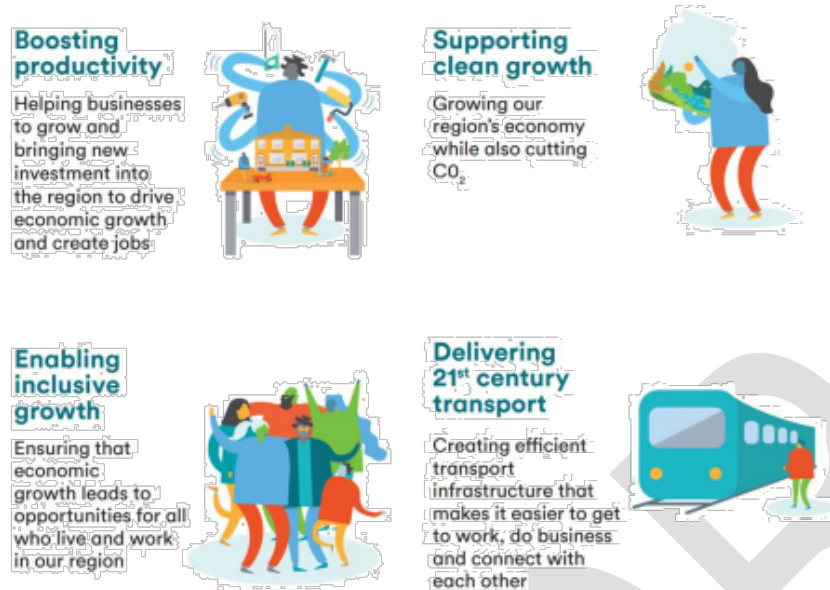
The railway – and public transport more widely – has a critical role in enabling the transition to a post-carbon society. We cannot achieve the imperative of net-zero carbon without investment in rail. As the most energy-efficient form of powered transport and one in which non-carbon fuels have long been to the fore, any and all steps that increase the modal share of the railway, such as by increasing its capacity and making it more attractive to passengers and freight customers, will aid decarbonisation. This is alongside improvements to the railway, most importantly electrification, which also directly decarbonise the railway itself. So the decarbonisation imperative is relevant to every part of this Rail Strategy.

Rail Vision

Our Rail Vision is for the rail network to be the core of a fully integrated multi-modal network of public transport and active travel, which is attractive, conveniently accessible to everybody, and links people to opportunities and amenities across our region and beyond, with door-to-

door journey times that are reliable and at least as fast as driving; rail must also be the mode of choice for industry across a wide variety of sectors to ship their freight. At the core of our vision are four overarching objectives. We also have an ambitious target of reaching a net-zero carbon economy by 2038 - rail has a huge role to play in this.

Figure 1: Rail Vision Priorities

Boosting productivity
Helping businesses to grow and bringing new investment into the region to drive economic growth and create jobs

Supporting clean growth
Growing our region's economy while also cutting CO₂

Enabling inclusive growth
Ensuring that economic growth leads to opportunities for all who live and work in our region

Delivering 21st century transport
Creating efficient transport infrastructure that makes it easier to get to work, do business and connect with each other

Across themes including Connectivity, Capacity, Major Schemes, Decarbonisation, Reliability and Punctuality, Rail Stations, Rolling Stock, and Fares and Ticketing, our vision set out what we need from our rail network and services to contribute to the four priorities presented above. This Rail Strategy builds on that Vision to develop its principles into a full strategy, within the wider Connectivity Infrastructure Plan

The Role of Rail

As part of the door-to-door journey, rail acts as a key mode for long distance, inter-urban, radial and local journeys. It also plays a role in longer distance freight transport, enabling national and international connectivity for businesses and goods.

Its role in serving trips to our main centres will be boosted by improvements to journey time, route capacity, station facilities, and accessibility. **We are clear that the future mass transit network will complement, and not replace, our existing rail network and that investment in both modes is required.**

Investment in rail does not just transform the track and services of the network itself, but also the places and communities served by rail. We have already seen in recent years the role rail plays in 'placemaking' across our region, with investment in new stations such as Apperley Bridge, Low Moor and Kirkstall Forge along with improvements to existing services and stations, delivering real change across the region. This requires an ongoing commitment to joint working between the Combined Authority, district councils and Network Rail to continue to deliver these aspirations.

Investment in rail also contributes to transforming door-to-door journeys. At its best, rail works in tandem with other modes of transport, including active travel, to create a seamless sustainable transport network. Our Strategy is about how rail fits within the wider network, forming one part of our overall connectivity strategy.

The Combined Authority is keen to promote stations as destinations where mixed land use, housing, commercial uses, mobility hubs are built on or adjacent to the rail infrastructure/mass transit to provide better options for the first/last mile of all journeys, we will work closely with our district partners to explore the viability of this concept.

Improvements to rail services or providing new connections across our region can act as a trigger for economic growth. Our Strategy will ensure

this growth continues to be delivered in a sustainable and inclusive manner across West Yorkshire.

Purpose and strategic fit of the Strategy

The role of this Rail Strategy is to translate the high-level objectives, outcomes, and outputs contained in the Vision into specific identifiable interventions, a coherent overall strategic framework, and an implementation plan. Since the Rail Vision was published, we have carried out detailed technical supporting work, producing empirical evidence which underpins our Strategy.

In some areas of the Strategy, our technical work has progressed to a point where we can name specific schemes or interventions we think are the solution to constraints on our rail network. In other areas, our recommendation is for further work to assess what the correct solution or option is, understand the technical feasibility of an intervention, or to build the value-for-money case of an option. Throughout, we have kept a clear focus on implementation and developed our four Strategic Priorities which will be discussed later to be clear on our most urgent requirements.

The Strategy also serves as a regional evidence base and policy position for local partners and industry stakeholders to use as a basis for making the case for investment in our rail network, as and when funding opportunities become available. We have continued to engage with Members and Local Authority Partners in the production of this Strategy.

Why publish our Strategy now?

We are in a period of uncertainty, with the unclear long-term impacts of the COVID-19 pandemic on rail patronage combined with a precarious wider macro-economic environment and political uncertainty on strategic schemes such as NPR and HS2. This, coupled with reform of the rail industry plus the pursuit of national and regional decarbonisation objectives, all means that we are in a time of significant change.

By publishing our Rail Strategy now we can provide clarity on our short, medium and long-term plans for rail in our region and focus on developing a rail network that supports our economic, environmental, and social objectives.

Strategic Context

It is crucial for us to consider the strategic and policy context in which this Strategy sits, in order to make sure it is up to date with the region's priorities and needs. This section discusses the most pressing current issues and their impact on our Strategy.

COVID-19 pandemic

The COVID-19 crisis brought unprecedented disruption to society, and to the way in which our economy functions, and resulted in an acute collapse in public transport use that significantly affected rail.

Whilst rail patronage has regrown to around 80-90% of pre-pandemic levels there is a growing sense that there will be lasting impacts which change the way we travel for good – where we travel to, why we travel to certain places, when we travel, and the modes we choose to suit our new travel needs. There have been major changes to the drivers of rail demand, in particular a large shift away from daily commuting towards greater off peak and leisure travel. Set against this, demand for rail freight, particularly for intermodal containers as part of the retail logistics supply chain, has grown recently, partly caused by shortages of lorry drivers, an increased emphasis on net-zero targets and rising fuel costs, and despite heavily constrained rail network capacity.

Since our Rail Vision was published, the pandemic has progressed to a point where vaccinations are available and full lockdowns are no longer the preferred public health response. Even so, COVID-19 continues to impact global supply chains, which, combined with other global uncertainties, has increased the cost of living both nationally and across our region.

It is more important now than ever that our region's rail network continues to support economic recovery from the pandemic through providing

opportunities to travel for work and education, and by supporting the leisure and hospitality industries across our region. At a time of economic uncertainty and rising costs of fuel, people across our region require a reliable, cost-effective and convenient alternative to travelling by private car.

Whilst we recognise the scale of the challenge which the pandemic has posed to our public transport network, we cannot use the short-term reduction in rail use seen through 2020 and 2021 to limit our ambition for rail in West Yorkshire, and our Rail Strategy is fully supportive of the national ambition to 'level up' the region.

Decarbonisation

Addressing the climate emergency is an overriding priority. This requires significant changes in the way our region's businesses and communities function – and the way we behave as individuals – to fulfil our pledge of reaching net-zero carbon by 2038.

Transport has a large role to play, with road transport the largest contributor of emissions. Rail can unlock real change, given its inherent energy-efficiency and the ability to decarbonise fully via electrification. There is an opportunity to reimagine the role of rail freight to better complement road haulage, while providing many wider economic and environmental benefits.

Within our West Yorkshire Climate and Environment Plan, the 'Carbon Reduction Pathways' show the scale of the challenge for rail. A 60% increase in rail travel, alongside changes across all industries, would take us towards net-zero by 2038 – but to reach it we need even more ambitious growth in rail as a core component of our net-zero strategy. **Critically, if the network is to support decarbonisation in our region, there will be a need to accommodate over 60% additional rail trips per year, for which additional capacity will be required, purely to reach our decarbonisation target. Our social and economic objectives will drive still further growth.**

Rail industry reform

We are in a period of change in the rail industry in the UK. The plans set out in the Williams-Shapps Plan for Rail align with our support for reform of the rail industry.

Whilst the Government's Plan for Rail is rolled out across the industry and the transition to Great British Railways continues, we will persist with our support of industry reform that delivers the following for West Yorkshire and the wider network:

- Co-ordination of investment of planning activity;
- Co-investing in rail facilities and services;
- Integrated strategy making; and
- Holding the railway to account on behalf of passengers.

We are pleased to see that the strategic objectives of Great British Railways' Whole Industry Strategic Plan (meeting customer needs, delivering financial sustainability, contributing to economic growth, supporting levelling up and connectivity, and delivering environmental sustainability) are closely aligned to our objectives and Strategic Priorities.

Levelling up

The Government's 'levelling up' agenda has recently been formalised with the publication of the Levelling Up White Paper. The White Paper makes the case for further devolution of powers, including investment in transport infrastructure, as fundamental to addressing social and economic inequalities across the country.

The Combined Authority achieved our devolution deal in March 2020. We will make use of our new Mayoral Combined Authority status to shape the future of rail investment and amplify the priorities of our region.

Alignment with other strategies

Obviously, there are other strategies in development by other national bodies such as the Great British Railways. Our Rail Strategy is unique and

seeks to meet the objectives that are important to our region, reflecting our ambitions in the short, medium, and long terms, and supported by local evidence. However, it will be clear that the themes in this Strategy largely reflect those set out for the future GBR in the Williams-Shapps Review's strategic priorities, which confirms the robustness of our priorities and ambitions. Transport for North is in the progress of refreshing its Strategic Transport Plan, and we are working closely with them to ensure that our priorities and ambitions are reflected in their plan.

Structure of the Strategy

The remainder of the Strategy is structured as follows:

- **West Yorkshire's Economic Geography** – provides a more detailed description of our region, and the transport constraints each part of the region currently faces.
- **Strategy in Summary: Our Strategic Priorities** – concisely presents our Strategy and the priorities that have emerged from it.
- **Major Projects** – provides our response to the Integrated Rail Plan and our assessment on its impact on connectivity to, from, and within West Yorkshire.
- **Passenger Connectivity** – assesses long distance, intra-regional, and local rail connectivity in West Yorkshire and sets out our plans to improve connectivity in line with our ambitions.
- **Capacity Needs –** presents the findings of our technical studies into rail capacity needs in our region and our recommended next steps to provide the capacity West Yorkshire needs.
- **Passenger Experience and Access to the Network –** sets out what we need to do to deliver the quality service passengers require.
- **Expanding the Reach** – identifies opportunities for rail to serve parts of the region not currently connected to the network.

- **Freight –** sets out opportunities to grow the role of rail freight in West Yorkshire.
- **Decarbonisation –** presents our priorities for a programme of decarbonising the rail network itself.
- **Implementation** – presents a plan for delivering our Strategy and the delivery opportunities in the short, medium, and long terms.

West Yorkshire's Economic Geography

Understanding the function of places now and into the future is key to planning an effective and efficient transport system. The places and communities in our region are interconnected, but they play different roles. Understanding the contributions made by each place is important to develop a transport system which meets the needs of our region. The key characteristics of our region are presented below, and each of the districts are of our region are illustrated and described on the following pages.

Figure 2: Key characteristics of the region

Our places

A polycentric region with Leeds as the largest economic centre and transport hub.

Bradford is a key city alongside other significant centres including Wakefield, Halifax and Huddersfield.

Away from the main centres there are a variety of towns and village serving a range of purposes.

The west of the region is characterised by deep valleys which concentrate population and transport corridors.

Our population

Population of 2.4 million people with a density of 11 people per hectare, which is densley populated by British and European standard.

However the density does vary significantly across the region.

Population forecast to grow by 10,000 per annum.

20% of our population are within the top 10% of the most deprived areas in the UK - this is unchanged in 20 years.

Our environment

The region is a variety of urban, semi-rural and rural areas.

Easy access to nationally significant countryside and world-class natural attractions.

A topography that is challenging for transport networks to navigate, especially in the west of the region.

Environmental challenges hamper quality of life for West Yorkshire residents, with poor air quality linked to over 1,000 excess deaths per year in West Yorkshire.

A region at serious threat of the impacts of climate change, including severe flooding.

How we travel

92% of the residing population also work in West Yorkshire, resulting in low levels of inter-regional commuting.

The region is dependent on private vehicle use, with 65% of work and leisure trips made by car or van.

Leeds is the region's biggest commuting destination and generates a large portion of public transport journeys.

Rail trips are limited to the main existing corridors, most of which are radial.

The road network is severely capacity constrained and often congested.

What this means

A population and varied region, where no single transport solution will solve existing constraints.

Highly constrained and congested roads in our region, with unsustainable car-dependency acting as a constraint on economic growth

Rail as a mode of travel has natural advantages in several parts of the region, but needs to be part of an integrated public transport network.

High levels of deprivation mean social inclusion and spreading access to opportunities are key priorities for our Strategy.

Mitigating the impacts of, and adapting to climate change are essential for the region.

Figure 3 below shows the extent to which travel to work (based on 2011 census data and taking all modes) was self-contained within West Yorkshire, and also shows the variety of journeys regularly made, with Leeds the largest but not overwhelmingly dominant, reflecting the polycentric nature of our region:

Figure 3: Commuting in West Yorkshire
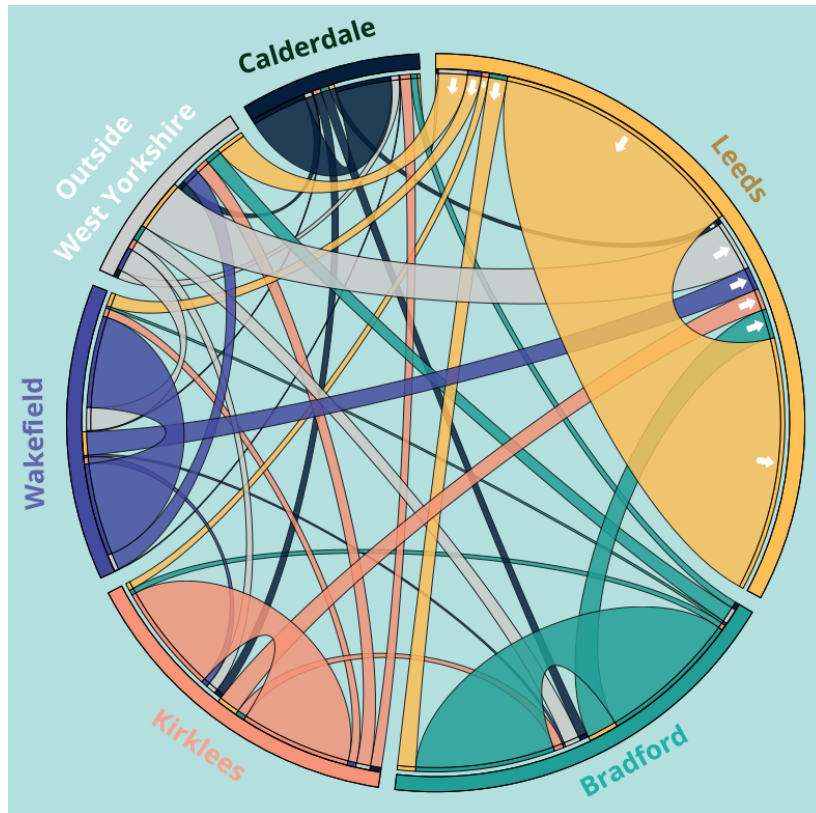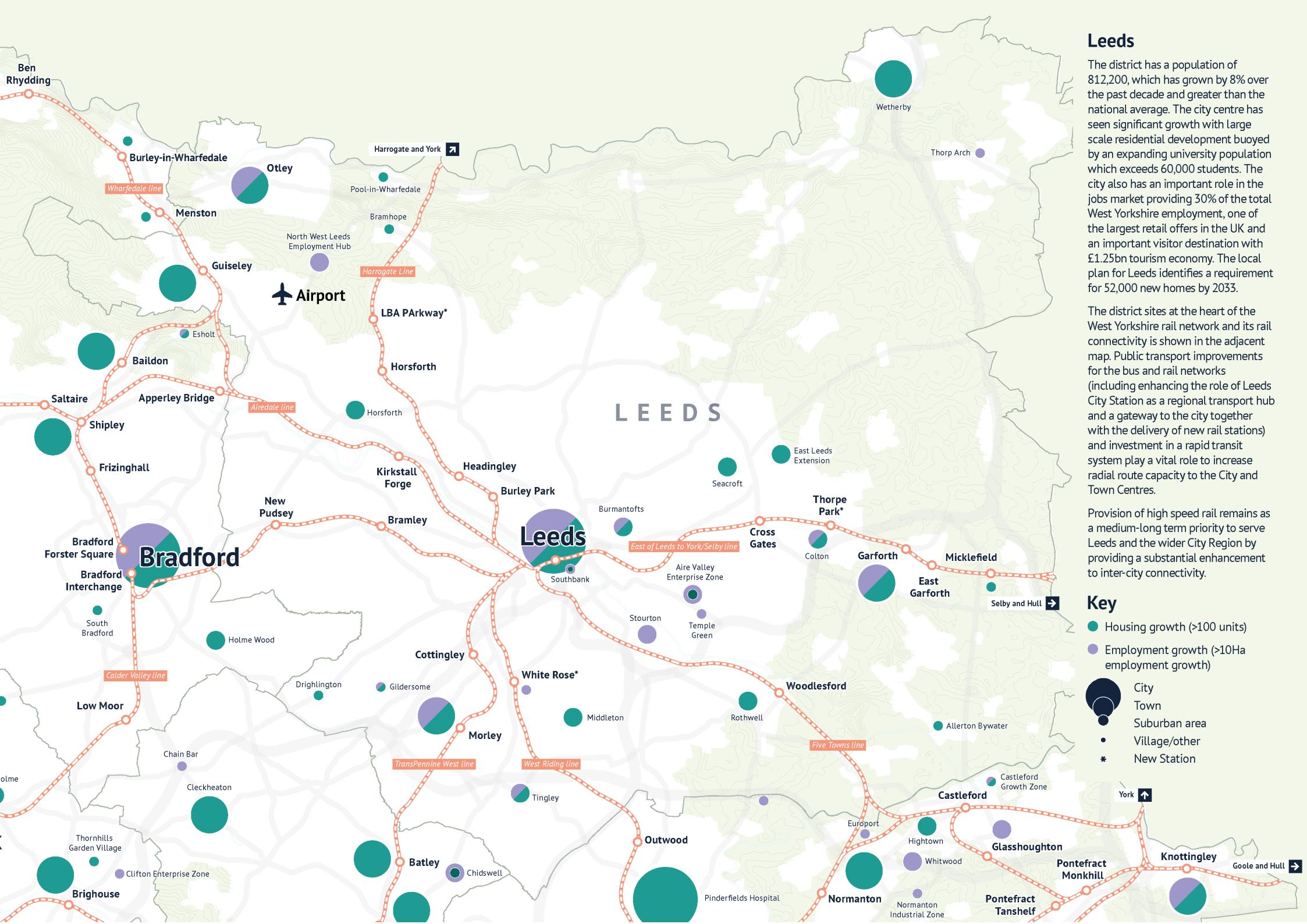
Leeds

The district has a population of 812,200, which has grown by 8% over the past decade and greater than the national average. The city centre has seen significant growth with large scale residential development buoyed by an expanding university population which exceeds 60,000 students. The city also has an important role in the jobs market providing 30% of the total West Yorkshire employment, one of the largest retail offers in the UK and an important visitor destination with £1.25bn tourism economy. The local plan for Leeds identifies a requirement for 52,000 new homes by 2033.

The district sites at the heart of the West Yorkshire rail network and its rail connectivity is shown in the adjacent map. Public transport improvements for the bus and rail networks (including enhancing the role of Leeds City Station as a regional transport hub and a gateway to the city together with the delivery of new rail stations) and investment in a rapid transit system play a vital role to increase radial route capacity to the City and Town Centres.

Provision of high speed rail remains as a medium-long term priority to serve Leeds and the wider City Region by providing a substantial enhancement to inter-city connectivity.

Key

- Housing growth (>100 units)
- Employment growth (>10Ha employment growth)
- City
- Town
- Suburban area
- Village/other
- * New Station

Ben Rhydding
Burley-in-Wharfedale
Otley
Pool-in-Wharfedale
Harrogate and York
Menston
Guiseley
Bramhope
North West Leeds Employment Hub
Airport
Harrogate Line
Wharfedale line
Esholt
LBA PArkway*
Baildon
Apperley Bridge
Horsforth
Saltaire
Airedale line
Shipley
Horsforth
Frizinghall
Kirkstall Forge
Headingley
LEEDS
Burley Park
New Pudsey
Bramley
Burmantofts
Leeds
East Leeds Extension
Seacroft
Thorpe Park*
Cross Gates
Bradford Forster Square
Bradford
Bradford Interchange
Southbank
East of Leeds to York/Selby line
Colton
Garforth
Micklefield
East Garforth
Selby and Hull
South Bradford
Holme Wood
Aire Valley Enterprise Zone
Stourton
Temple Green
Calder Valley line
Cottingley
Gildersome
Drighlington
Middleton
Woodlesford
Rothwell
Low Moor
Morley
White Rose*
Allerton Bywater
Five Towns line
Chain Bar
Cleckheaton
TransPennine West line
West Riding line
Tingley
Castleford
Castleford Growth Zone
York
Thornhills Garden Village
Clifton Enterprise Zone
Batley
Chidswell
Outwood
Europort
Hightown
Whitwood
Glasshoughton
Knottingley
Goole and Hull
Brighouse
Pinderfields Hospital
Normanton
Normanton Industrial Zone
Pontefract Monkhill
Pontefract Tanshelf

Bradford

The district has a population of 546,700 and has a younger school age demographic compared to England as a whole. Bradford has the 4th highest number of manufacturing jobs of any city in the UK.
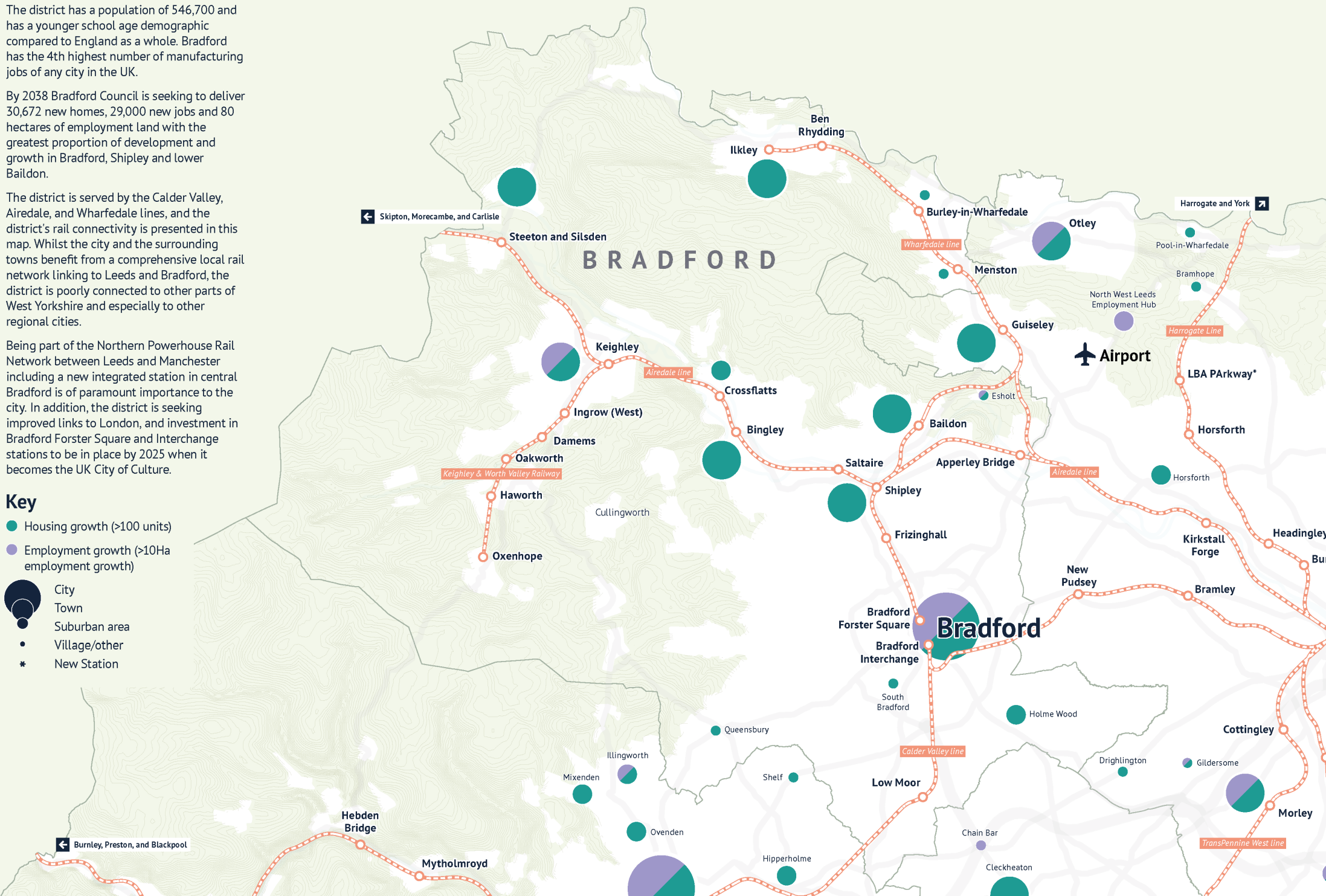
By 2038 Bradford Council is seeking to deliver 30,672 new homes, 29,000 new jobs and 80 hectares of employment land with the greatest proportion of development and growth in Bradford, Shipley and lower Baildon.

The district is served by the Calder Valley, Airedale, and Wharfedale lines, and the district's rail connectivity is presented in this map. Whilst the city and the surrounding towns benefit from a comprehensive local rail network linking to Leeds and Bradford, the district is poorly connected to other parts of West Yorkshire and especially to other regional cities.

Being part of the Northern Powerhouse Rail Network between Leeds and Manchester including a new integrated station in central Bradford is of paramount importance to the city. In addition, the district is seeking improved links to London, and investment in Bradford Forster Square and Interchange stations to be in place by 2025 when it becomes the UK City of Culture.

Key

- Housing growth (>100 units)
- Employment growth (>10Ha employment growth)

- City
- Town
- Suburban area
- Village/other
- * New Station

B R A D F O R D

← Skipton, Morecambe, and Carlisle

Ben Rhydding

Ilkley

Burley-in-Wharfedale

Steeton and Silsden

Otley

Pool-in-Wharfedale

Menston

Wharfedale line

Bramhope

North West Leeds Employment Hub

Guiseley

Harrogate and York →

Keighley

Airedale line

Harrogate Line

Airport

LBA PArkway*

Crossflatts

Esholt

Ingrow (West)

Bingley

Baildon

Horsforth

Damems

Oakworth

Saltaire

Apperley Bridge

Airedale line

Horsforth

Keighley & Worth Valley Railway

Haworth

Shipley

Cullingworth

Frizinghall

Kirkstall Forge

Headingley

Oxenhope

New Pudsey

Bradford Forster Square

Bramley

Bradford

Bradford Interchange

South Bradford

Holme Wood

Cottingley

Queensbury

Drighlington

Gildersome

Calder Valley line

Low Moor

Illingworth

Shelf

Mixenden

Morley

Hebden Bridge

Ovenden

Hipperholme

Chain Bar

TransPennine West line

← Burnley, Preston, and Blackpool
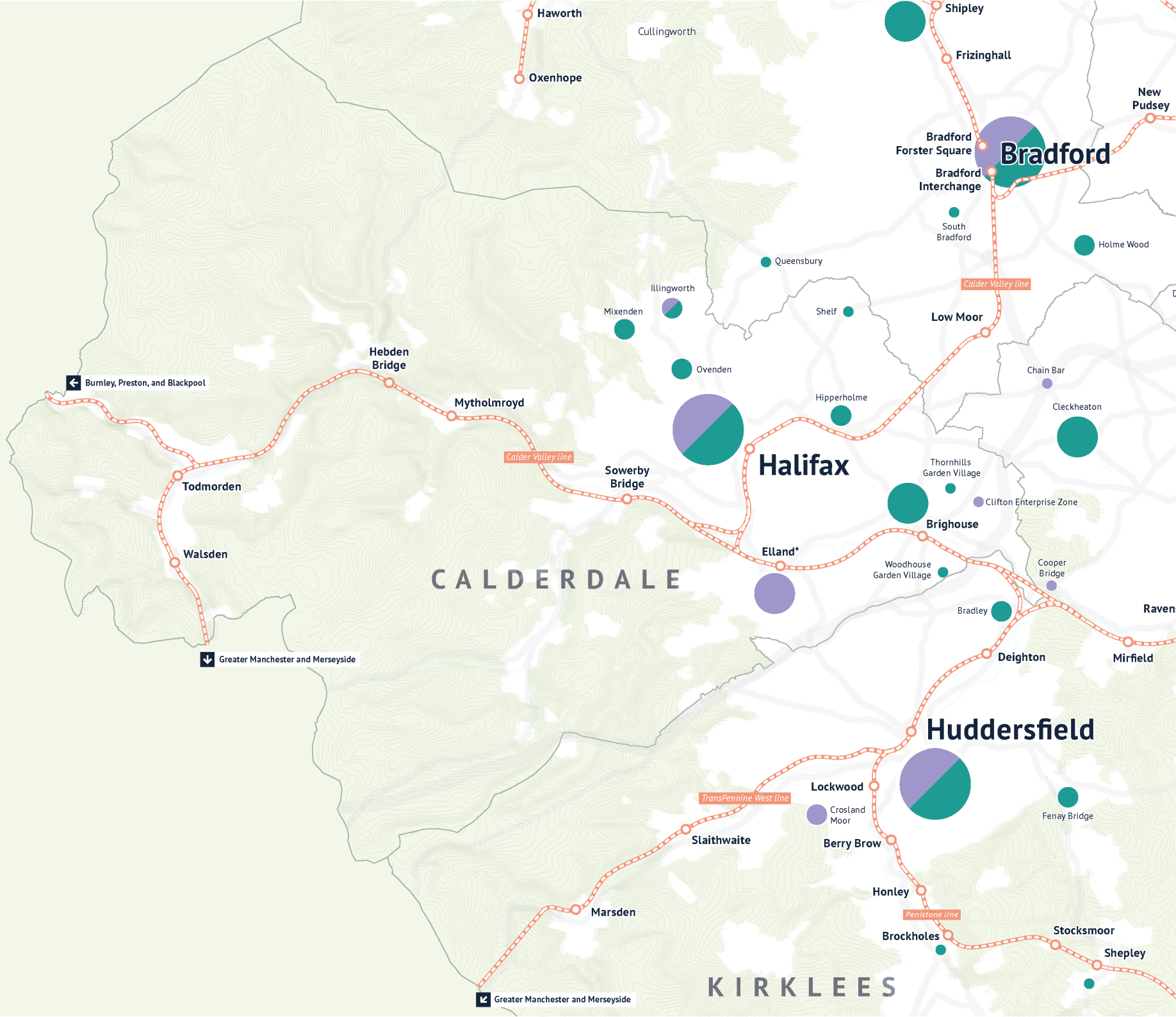
Mytholmroyd

Cleckheaton

Calderdale

The district has a population of 206,400 and compared to West Yorkshire has a greater share of the population older than 65 but is still below the average for England as a whole. Around 80% of the population of Calderdale lives in the east of the borough in Halifax, Sowerby Bridge, Brighouse, Elland and surrounding settlements. Western Calderdale which includes the settlements of Todmorden, Hebden Bridge Mytholmroyd and Ripponden.

Most of the district is characterised by steep incised valleys and high moors which forces both the road and rail network into the valley bottoms. Calderdale has a requirement to provide 14,950 homes by 2032/33 with the majority of development focussed in the southeast of the district.

The district is served by the Calder Valley Line and its rail connectivity is illustrated in the adjacent map. Whilst the district is connected by regular services to other regional centres in West Yorkshire (except Wakefield), these are slow and often overcrowded. Rail priorities for the district include electrification of the Calder Valley Line, delivery of a new station in Elland, more frequent services particularly from Brighouse and Sowerby Bridge and the redevelopment of Halifax rail station.

Key

- Housing growth (>100 units)
- Employment growth (>10Ha employment growth)

- City
- Town
- Suburban area
- Village/other
- * New Station

Haworth
Cullingworth
Oxenhope
Shipley
Frizinghall
New Pudsey
Bradford Forster Square
Bradford
Bradford Interchange
South Bradford
Holme Wood
Queensbury
Illingworth
Shelf
Calder Valley line
Low Moor
Mixenden
Ovenden
Hipperholme
Chain Bar
Cleckheaton
Hebden Bridge
Mytholmroyd
Calder Valley line
Sowerby Bridge
Halifax
Thornhills Garden Village
Clifton Enterprise Zone
Burnley, Preston, and Blackpool
Todmorden
Elland*
Brighouse
Woodhouse Garden Village
Cooper Bridge
Bradley
Ravens
Walsden
CALDERDALE
Deighton
Mirfield
Greater Manchester and Merseyside
Huddersfield
Lockwood
Fenay Bridge
TransPennine West line
Crosland Moor
Berry Brow
Slaithwaite
Honley
Penistone line
Marsden
Brockholes
Stocksmoor
Shepley
KIRKLEES
Greater Manchester and Merseyside

Kirklees

The district has a population of 433,300, which is expected to reach 475,900 by 2031. Around 60,000 residents commute to employment outside of the district, with Leeds being a particular focus for commuters.

Huddersfield has high employment in manufacturing with world leading engineering and textile businesses. Kirklees is also home to Dewsbury and Batley, both significant towns in their own right with distinctive historic environments. The local plan for Kirklees identifies a need for 31,140 new homes by 2031. Signifciant residential growth is planned at Bradley, Chidswell and Dewsbury Riverside which is adjacent to Ravensthorpe rail station.

The district is served by both the Penistone Line and the Transpennine route. Kirklees' rail connectivity is shown in the adjacent map. Significant investment as part of the TransPennine Route Upgrade (TRU) will provide faster and more frequent services for Kirklees and improvements at many stations.

Rail priorities for the district include increasing the frequencies of services along the Penistone Line and ensuring that disruption to passengers and local communities is kept to a minimum while the TransPennine route is upgraded.
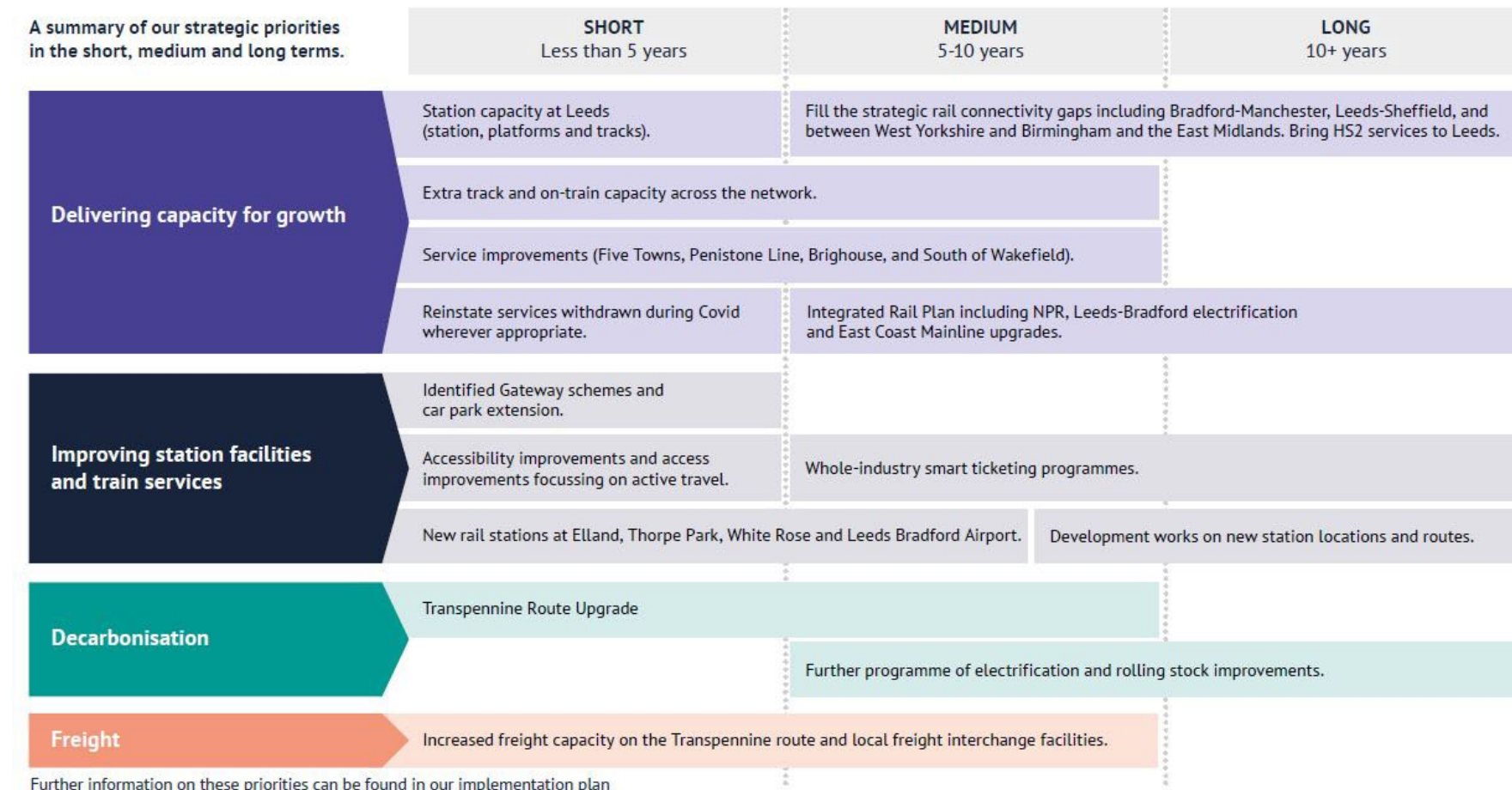
Key

- ● Housing growth (>100 units)
- ● Employment growth (>10Ha employment growth)

- City
- Town
- Suburban area
- · Village/other
- * New Station
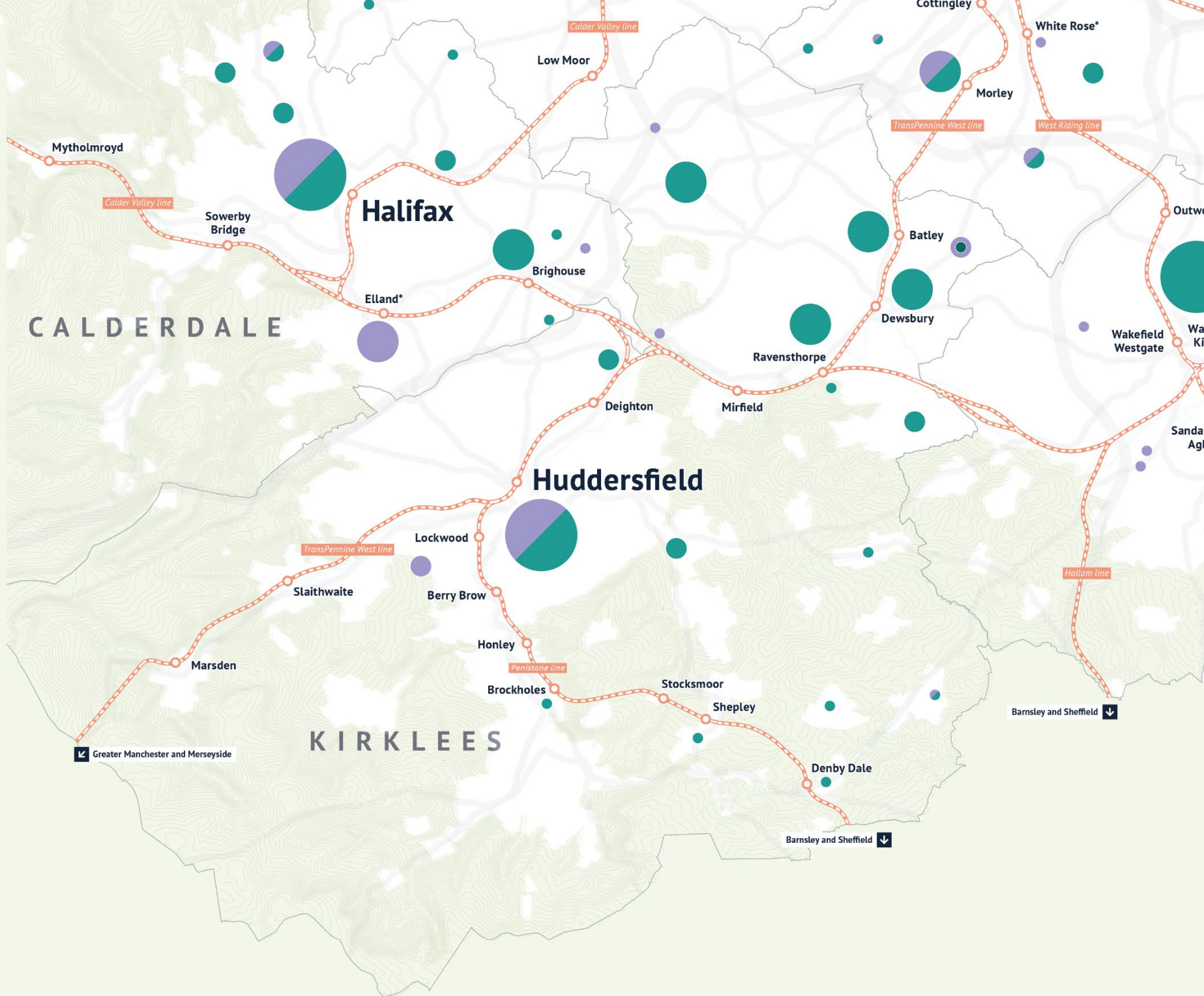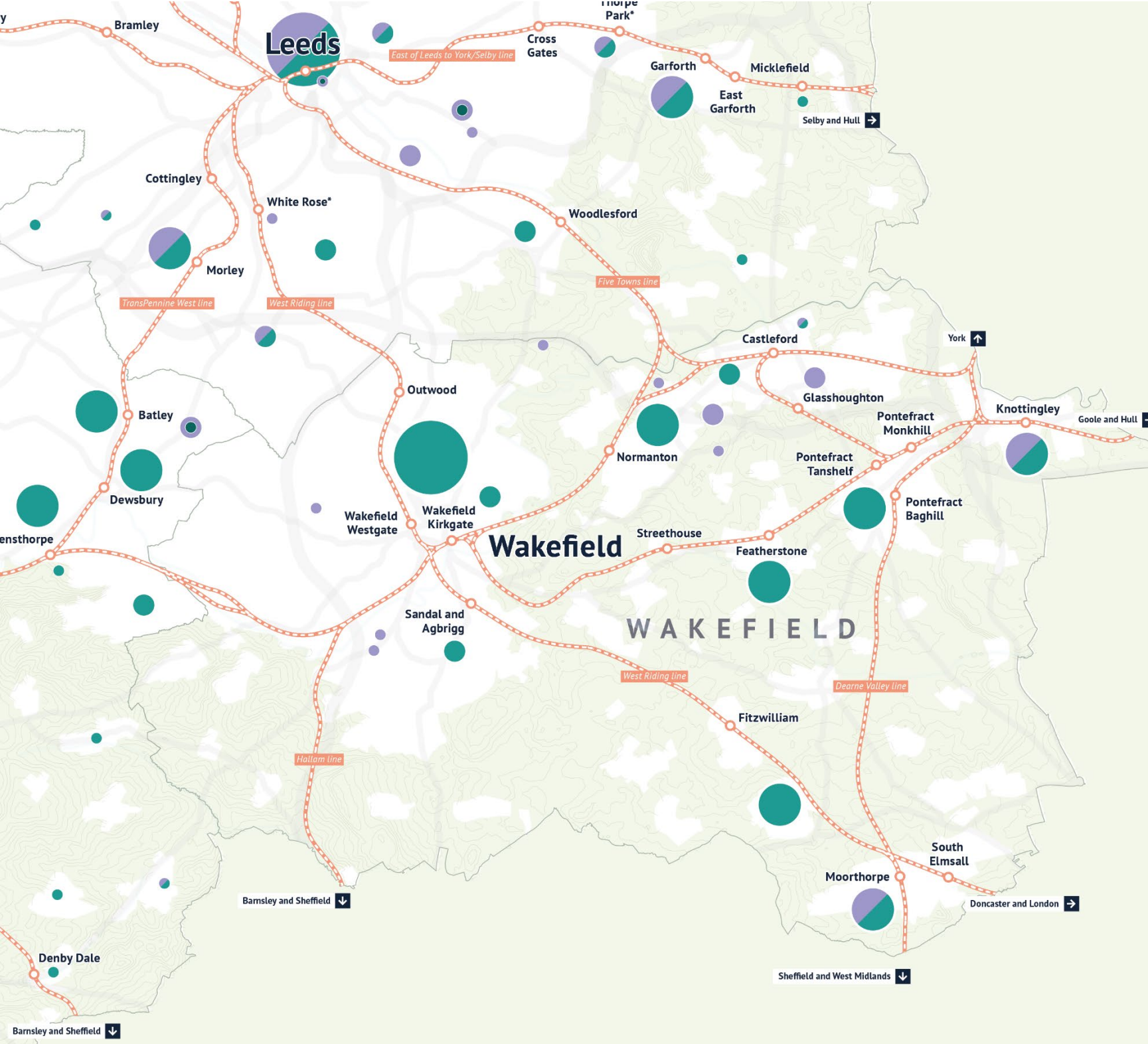
Wakefield

The district has a population of 353,200 and has experienced the largest percentage growth (8.4%) across West Yorkshire. The local plan for Wakefield highlights the need to construct 26,600 new homes by 2035.

Wakefield district is comprised of the city itself and to the north-east of Wakefield are the Five Towns, comprising Castleford, Pontefract, Normanton, Knottingley and Featherstone which have a collective population of 113,000. These towns share strong historic, economic, and cultural links based around the growth and subsequent decline of coal mining industry. Wakefield's strengths are in the food and drink and manufacturing sectors as well as strong growth in logistics. It is also a centre for culture and creativity and known for its sculpture with two world class art venues.

The district is served by the West Riding, Dearne Valley, Hallam, and Five Towns lines and rail routes in the district are shown in the map. Whilst the city itself has fast and frequent rail connections to Leeds and beyond, the surrounding towns do not have the same benefits and suffer from slow and infrequent services.

The local plan indicates the need for improvements to the rail network which include improving capacity, journey times and quality of public transport links between the urban centres in the district, Leeds City Region and South Yorkshire, particularly to Wakefield and Leeds city centre at peak times.

Key

- Housing growth (>100 units)
- Employment growth (>10Ha employment growth)

- City
- Town
- Suburban area
- Village/other
- * New Station

Strategy in Summary: Our Strategic Priorities

The figure below presents our four Strategic Priorities and 13 sub-priorities which summarise our strategy for West Yorkshire's rail network.

Figure 4: Strategy in Summary

A summary of our strategic priorities in the short, medium and long terms.	SHORT Less than 5 years	MEDIUM 5-10 years	LONG 10+ years
Delivering capacity for growth	Station capacity at Leeds (station, platforms and tracks).	Fill the strategic rail connectivity gaps including Bradford-Manchester, Leeds-Sheffield, and between West Yorkshire and Birmingham and the East Midlands. Bring HS2 services to Leeds.	
	Extra track and on-train capacity across the network.		
	Service improvements (Five Towns, Penistone Line, Brighouse, and South of Wakefield).		
	Reinstate services withdrawn during Covid wherever appropriate.	Integrated Rail Plan including NPR, Leeds-Bradford electrification and East Coast Mainline upgrades.	
Improving station facilities and train services	Identified Gateway schemes and car park extension.		
	Accessibility improvements and access improvements focussing on active travel.	Whole-industry smart ticketing programmes.	
	New rail stations at Elland, Thorpe Park, White Rose and Leeds Bradford Airport.	Development works on new station locations and routes.	
Decarbonisation	Transpennine Route Upgrade		
		Further programme of electrification and rolling stock improvements.	
Freight	Increased freight capacity on the Transpennine route and local freight interchange facilities.		

Further information on these priorities can be found in our implementation plan

Major Projects

Introduction

Our rail vision is for the rail network to be the core of a fully integrated multi-modal network of public transport and active travel, which is attractive conveniently accessible to everybody, and links people to opportunities and amenities across our region and beyond, with door-to-door journey times that are reliably at least as fast as driving; rail must also be the mode of choice for industry across a wide variety of sectors to ship their freight.

Our Rail Vision sets out the key objectives that an integrated programme of major projects would deliver for the region, including HS2, Northern Powerhouse Rail (NPR), the TransPennine Route Upgrade (TRU), and investment in Leeds station:

- Balanced growth: sustainable inclusive economic growth which helps deliver decarbonisation, drives recovery and rebalancing post COVID-19;
- Capacity relief: delivering enhanced capacity to support growth in local, inter-regional, long-distance and freight services;
- Sequencing: any phasing strategy must be planned in an integrated manner to maximise deliverables at early stages without compromising the end stage; and
- Improved journey times: an integrated network delivering improved connectivity within and outside the region.

To deliver these objectives, we need rail improvements to be developed in a way that reflects the integrated nature of the railway, considering local and intra-regional services as well as inter-city connectivity. All these services are important, and with parts of our region's network operating at or near capacity it would struggle to handle increases in one without negatively affecting the others.

Infrastructure planned around hub stations such as Leeds and Bradford is essential to increase capacity and improve connectivity, thereby ensuring express type services are provided without negatively affecting local services. These, alongside co-ordinated and integrated timetables, will help realise the benefits of 'hub' stations.

This is why the Vision supports the delivery of HS2 and NPR in full. The benefits that these projects would have delivered are hugely important to achieving the region's net-zero targets and to supporting our internationally significant economy, with new high-speed connectivity at Leeds and Bradford supporting wider connectivity across the region.

The Government published the Integrated Rail Plan for the North and Midlands (IRP) in 2021. The IRP proposed significant changes to the plans for HS2, NPR, and TRU. Some elements of the IRP including further development of a West Yorkshire mass transit network, additional investment in the East Coast Main Line and delivery of an enhanced TransPennine Route Upgrade between Manchester, Huddersfield, Leeds, and York are important and beneficial to the region.

However, we believe that the IRP, in its current form, does not deliver the investment in rail services and infrastructure required to support our economy, decarbonisation (including our commitment to net-zero by 2038) or the 'levelling up' of transport networks to match provision in both Greater Manchester, the West Midlands or London.

The published IRP does not support our region's ambitions for a stronger, more competitive and better-connected North that meets the urgent challenges presented by the climate emergency. Table 1 below shows key areas covered in the IRP, and how the commitments differ from our region's requirements. The map on the following page illustrates our requirements beyond the schemes set out in the IRP.

Table 1: Integrated Rail Plan and West Yorkshire's requirements

Element of IRP	Included in IRP	West Yorkshire's requirements
Transpennine Route Upgrade (TRU)	• **TRU** delivered in full including electrification between Manchester, Leeds, and York and digital signalling. • Hourly freight path and improved gauge clearance.	• **TRU** delivered in full. • Fully accessible stations across the Transpennine route. • Disruption minimised during construction.
HS2	• **HS2** Eastern Leg will reach East Midlands Parkway with services extended to Nottingham and Sheffield on existing infrastructure which includes upgrades to the Midland Main Line. • A commitment to look at the most effective way to run **HS2** services to Leeds and Leeds station capacity.	• Identify and progress the preferred **HS2** East option to bring **HS2** services to Leeds. • The previously proposed 'T-shaped station' should be committed alongside network improvements at the existing station to ensure appropriate capacity and resilience to deliver maximum benefits from committed upgrades, expand freight capacity, and improve local services.
Northern Powerhouse Rail (NPR)	• **NPR** via Huddersfield which includes a new line between Manchester and Marsden, and upgrades to infrastructure between Marsden and Huddersfield. • **NPR** to utilise the **TRU** upgraded infrastructure between Huddersfield, Leeds, and York. • Upgrades and electrification of the Calder Valley line between Leeds and Bradford Interchange.	**The TfN Preferred NPR option delivered in full including:** • A new line between Leeds and Manchester via a new central Bradford station. • Upgrades between Clayton Junction and Sheffield allowing **NPR** services to run via **HS2** between Leeds and Sheffield. • Upgrades between Leeds and Newcastle including reinstatement of the Leamside Line for freight services. • Upgrades including electrification between Leeds and Hull.
Stations	**HS2 Leeds** • A study looking at Leeds station capacity and potential for mass transit to deliver heavy rail services. Land remains safeguarded for a new **HS2** station despite no commitment on delivery. **NPR Bradford** • Explicit that **NPR** services operate to Bradford Interchange	**HS2 Leeds** • New **HS2** station which includes **NPR** Leeds – Sheffield services to relieve capacity at the existing station. **NPR Bradford** • New through station integrated with the Calder Valley line.
West Yorkshire Mass Transit	• Development funding for mass transit which includes a study looking at the potential for the system to provide an alternative to local rail services at Leeds station to relieve capacity.	• Investment in a mass transit system which complements our existing rail network and future improvements.
East Coast Main Line (ECML)	• Upgrades including digital signaling, line speeds and capacity.	• Upgrades to improve capacity, performance, and reliability.

Figure 5: Wider rail network – Integrated Rail Plan (IRP) and beyond

North East and Scotland

NPR upgrade to Newcastle

York

Improved quality and faster services to Glasgow and Lake District

Bradford   Leeds

Hull

NPR new line via Bradford city centre

NPR upgrade to Hull

Huddersfield

Wakefield

The diagram includes the programmes contained in the IRP but also sets out our requirements beyond IRP including some of our ambitions covering long-distance connectivity.

Doncaster

Manchester

Sheffield

Warrington   Manchester Airport

Chesterfield

Liverpool

NPR Leeds-Sheffield & HS2 services to Leeds

Newark

Crewe

Nottingham

Derby

Integrated Rail Plan

East Midlands Parkway

Improved connections to Norwich and Cambridge

━━━ ECML upgrade

More capacity to East Midlands and direct services to Leicester

━━━ HS2 West/Nottingham extension

Leicester

━━━ TRU / NPR

━━━ Midland Main Line (MML) upgrade

Requirements beyond IRP

Birmingham   Birmingham Int

London and the South East

━━━ Infrastructure requirements

More frequent and faster services to Birmingham

Improved connectivity to HS1 and beyond to the continent

━━━ Connectivity improvements

Next steps

The IRP committed to developing studies on the most effective way to run HS2 trains to Leeds, as well as the options for capacity improvements at Leeds station. We will support the development of these studies to ensure they reflect our region's priorities and set out a path to deliver high quality improvements.

The anticipated outputs of IRP leave substantial gaps in capacity and connectivity for West Yorkshire, and we will need to work with the industry to agree the approach to, and timescales for, closing the gaps that are not resolved in the IRP, such as:

- Pan-Northern connectivity to and from Bradford;
- Connectivity between Leeds- Sheffield, West Yorkshire and Hull, Birmingham, and the East Midlands; and
- How investment in both mass transit and rail will complement each other to meet our ambitions for connectivity in West Yorkshire.

Further it is noted that the upgrade of existing lines, rather than the construction of new lines, adds considerable disruption for a significant period of time to the network that could otherwise be reduced. We will also ensure that upgrades are not at the detriment of local services both now and into the future.

We will also work with the industry to maximise the benefits of TRU as quickly as possible, as part of an integrated transport network which includes last-mile connectivity, and to minimise disruption from the programme to West Yorkshire's residents, commuters, businesses and communities.

Passenger Connectivity

Introduction

Our Rail Vision establishes that connectivity, in terms of service frequencies, journey times, and available destinations, is central to the overall vision for the future of rail in West Yorkshire.

The connectivity offered by the rail network forms a crucial part of overall door-to-door journeys. Recognising this, our Vision focuses on rail travel as one part within a wider transport network. When this network is well integrated, it better supports our objectives of modal shift from private car and enabling sustainable and inclusive economic growth.

To achieve this goal of an integrated transport network we will work closely across rail, bus, mass transit and active travel to ensure plans for these modes are cohesive and complementary. This is particularly important in the context of passenger connectivity, where connectivity gaps should be addressed using the most appropriate mode or combination of modes. Designing this integrated network will be one of the key areas of future work continuing on from this Rail Strategy.

In terms of future needs, it is essential that we capture:

- All rail markets and journey purposes – including travel for commuting, business, education, and leisure purposes.
- All geographic scales – including local, inter-regional, and longer distance travel requirements.
- The needs of both passenger and freight travel – and ensuring we plan for balance between the two (rail freight connectivity has been captured in the Freight Chapter of this Strategy).
- The importance of integrating rail services into a single, coherent offer, and integrating that rail offer with other public transport modes to create a comprehensive and cohesive public transport network for our region.

This chapter first presents our strategy for long distance rail connectivity, including our plans in response to the Integrated Rail Plan and its impact on HS2 and Northern Powerhouse Rail. We then consider the gaps in intra-regional and local connectivity, comparing existing connectivity with our aspirations for rail connectivity in West Yorkshire.

Long Distance Connectivity

Domestic connectivity gaps

Our Vision sets out the gaps in long distance connectivity between West Yorkshire and the rest of the country. Long distance rail connectivity is mostly centred on Leeds station as a hub for the region (and to some extent Manchester for those to the west of the region), which benefits from direct and frequent services to and from London, Manchester, and York as well as other key national hubs. Long distance journeys from Leeds tend to be competitive with or faster than travelling by car, especially for centre-to-centre journeys, though this is not always the case.

The maps overleaf illustrate the different long-distance connectivity available from Leeds for both car and rail – showing in particular that rail is much less competitive with car for journeys towards the north-west, west (including Wales) and south-west (including the Midlands).

Journey times by road from most other main urban centres in West Yorkshire to key national hubs are comparable to those from Leeds given their favourable access to the motorway network. This is not the case for rail, where in most cases connectivity is less favourable compared to Leeds.

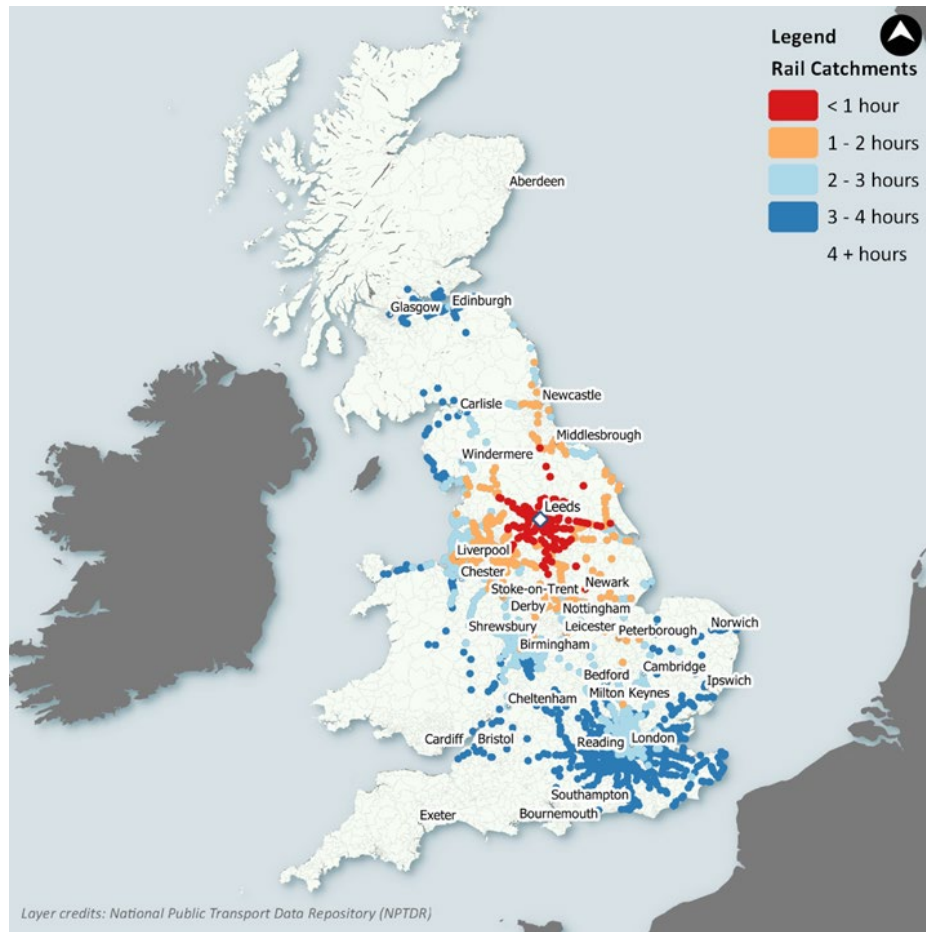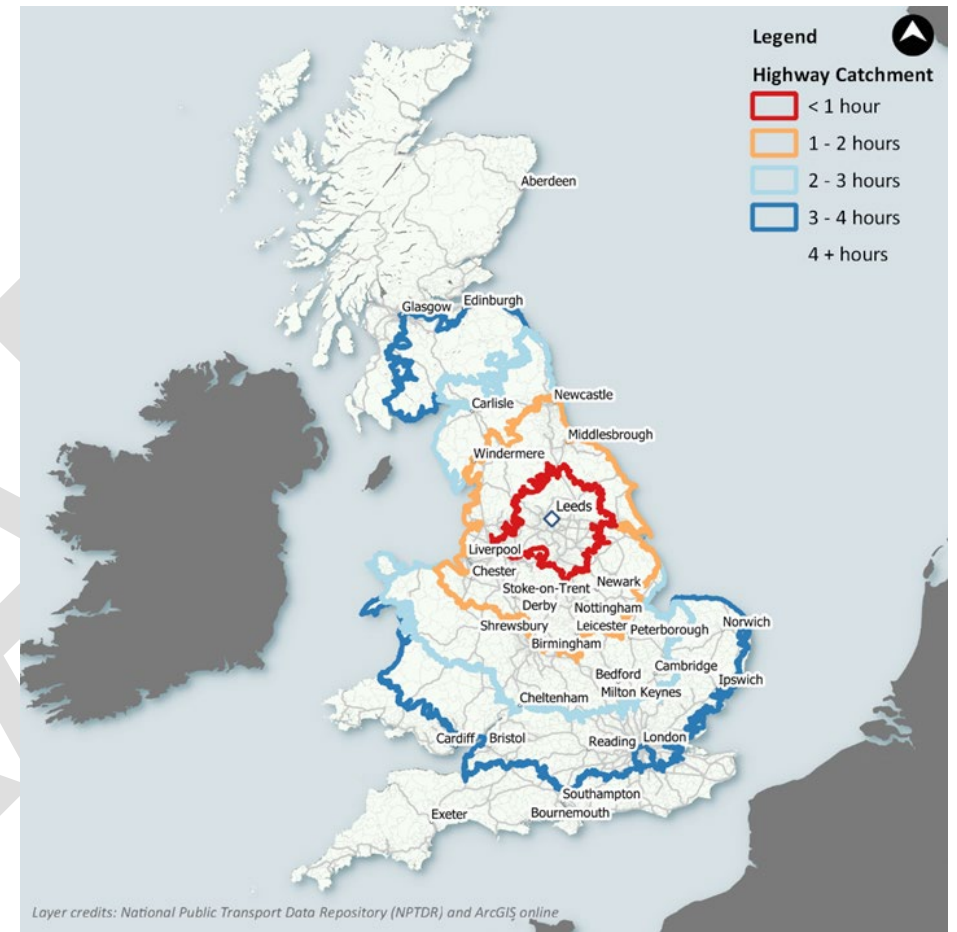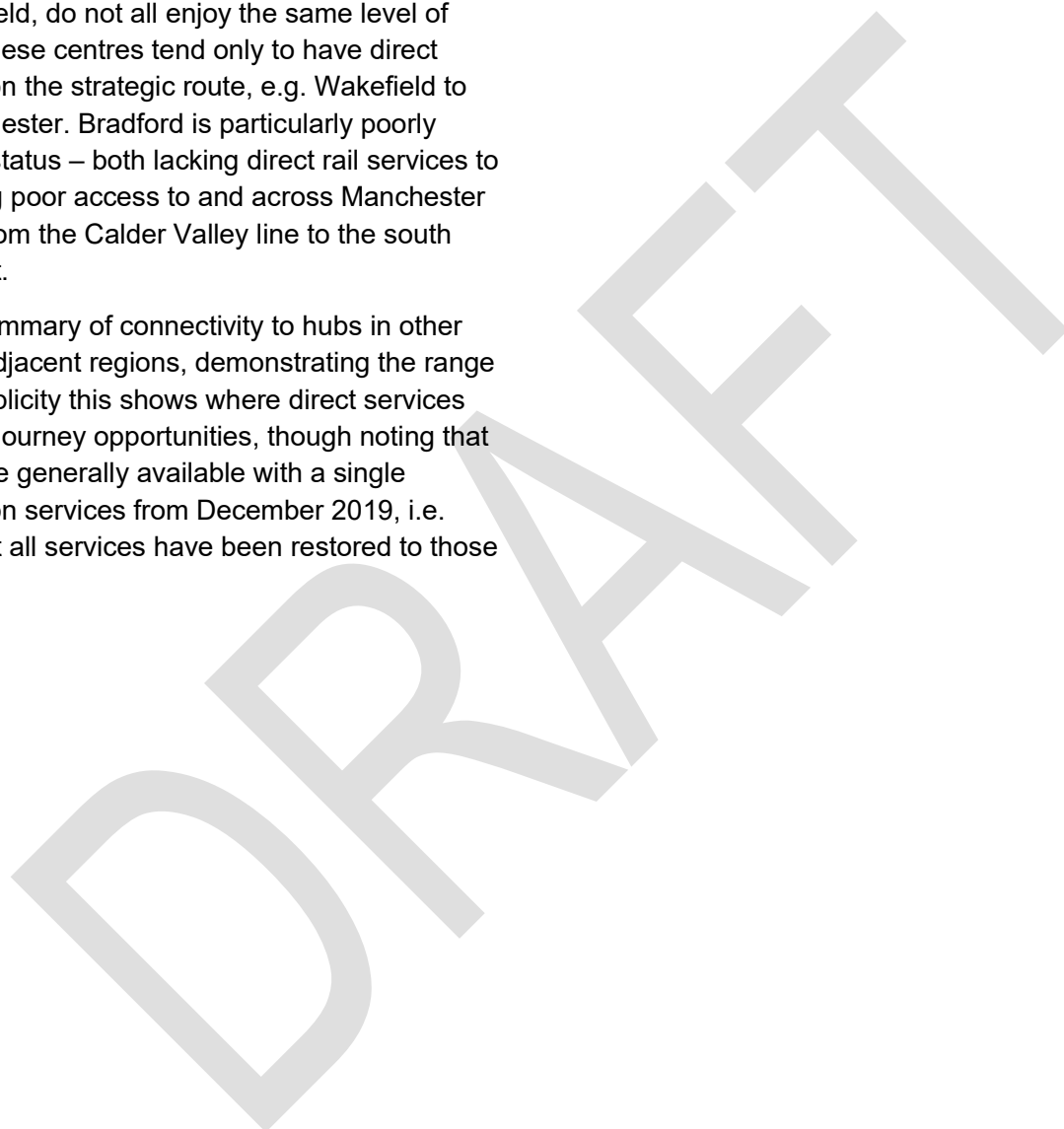**Figure 6: Long distance rail connectivity from Leeds**

Figure 7: Long distance car connectivity from Leeds

West Yorkshire Combined Authority- Rail Strategy

Away from Leeds, the other centres in our region, including Bradford, Halifax, Huddersfield and Wakefield, do not all enjoy the same level of long-distance rail connectivity. These centres tend only to have direct intercity services when they are on the strategic route, e.g. Wakefield to London or Huddersfield to Manchester. Bradford is particularly poorly served in relation to its size and status – both lacking direct rail services to many locations and also suffering poor access to and across Manchester due to the absence of services from the Calder Valley line to the south side of Manchester and its airport.

The following table presents a summary of connectivity to hubs in other regions both long distance and adjacent regions, demonstrating the range of connectivity available. For simplicity this shows where direct services are available, as an indication of journey opportunities, though noting that journeys between all locations are generally available with a single interchange. The table is based on services from December 2019, i.e. before COVID-19; since then, not all services have been restored to those levels.

Table 2: Long Distance / Adjacent Regions Train Connectivity

Legend:
- ● More than 1 direct train per hour
- ◉ 1 direct train per hour
- ○ Limited direct trains

Hub	Leeds	Bradford	Halifax	Huddersfield	Wakefield
Edinburgh	◉			◉	◉
Glasgow	○				○
Chester	◉	◉	◉		
Liverpool	●			●	
Newcastle	●			●	◉
Cardiff					
Birmingham	◉				◉
Leicester					
Nottingham					◉
Cambridge					
Peterborough					◉
London	●	○	○		●
Exeter	◉				◉
Southampton					
Hull	●	◉	◉	◉	
Manchester	●	●	●	●	
Sheffield	●			◉	●
York	●	◉	◉	●	◉
Summary	Well-connected and acting as a hub for journeys for the whole of West Yorkshire.	Connected to Manchester and the North West but need to interchange at Leeds or Manchester for most other journeys.	Connected to Manchester and the North West but need to interchange at Leeds or Manchester for most other journeys.	Well connected to East-West services via the TransPennine route. North-South journeys require at least one interchange.	Well connected to north-south services via the ECML and XC routes. East-West journeys require at least one interchange.

Direct services are highly valued by passengers, but it is not possible for every station in our region to be connected by direct trains to all main destinations across the country. Our Strategy aims to balance the benefits of direct connections with the value of frequent connecting services. Interchange itself however needs to be made far simpler, more reliable, consistent and convenient.

In addition to these specific connectivity gaps, our recently completed Long Distance Connectivity Study identified key gaps in rail connectivity between West Yorkshire as a whole and other parts of the country:

- Birmingham and the West Midlands;
- Nottingham, Leicester, and the East Midlands;
- Sheffield and South Yorkshire;
- Manchester, Merseyside, Lancashire and Wales; and
- Carlisle, Glasgow and the West of Scotland.

Services between our region and Birmingham, Nottingham, and Sheffield are limited to one fast train per hour. Travelling to or from Leicester requires one or more interchanges, depending on where in West Yorkshire the journey starts and ends. These journeys are often not attractive compared with the car.

Travelling to Glasgow from West Yorkshire requires either using a direct service that operates infrequently, or travelling via Settle, Manchester or Edinburgh. These options offer a slow and indirect journey between the fourth and fifth most populated urban areas in the UK.

HS2 and Northern Powerhouse Rail

Our Vision strongly supports the delivery of the HS2 Eastern Leg to Leeds and the construction of Northern Powerhouse Rail - including a new station in Bradford - in addition to the TransPennine Route Upgrade and improvements to the East Coast Main Line.

We were clear that the Leeds City Region was ready for HS2 and that delivery of the Eastern Leg would support our growth strategy.

We set out the transformational connectivity improvements that the full NPR network would deliver to towns and cities across our region, not least through a new station in Bradford city centre. The capacity released on existing lines - such as the Calder Valley Line, TransPennine West Line and Hallam Line - could have been used to improve both passenger and freight services.

As discussed in the Major Projects chapter of this Strategy, the proposals set out in the IRP represent a significant change in planned strategic rail investment to, from, and within our region.

Whilst the specific HS2 and NPR programmes may no longer be delivered as we previously expected, our position on the outcomes and benefits they would have delivered remains unchanged: significant investment is required to upgrade the long-distance rail connectivity to and from our region.

International rail connectivity

The Rail Vision identifies the need for rail to provide attractive connectivity to closer international destinations, as an alternative to flying and a step towards decarbonisation.

At present, links to mainland Europe consist principally of rail via St Pancras International and Eurostar services, car journeys via the Hull ferry, Harwich ferry or Channel Tunnel, coach journeys with a transfer in London, and flights. For Ireland, rail and coach services combined with ferries are the alternative to flying.

The High Speed 1 link to the Channel Tunnel and mainland Europe in particular represents a strong opportunity to achieve a step-change in our region's connectivity to the near Continent, with potential centre-to-centre journey times to a variety of major destinations that are highly competitive with aviation. We will work with partners around the country, the industry and Government to exploit this opportunity and provide greatly improved international rail connectivity via this route.

Next steps for long distance connectivity

A lack of direct and competitively priced long-distance services is a major barrier to using the rail network for passengers. Overturning the negative perception of interchange is important to achieving increased mode share for rail for long-distance trips, which centres in large part on coordinating services and ensuring high levels of reliability. The quality of station facilities also plays a role in the decision-making process, indicating a need for easy, convenient, and comfortable interchange points.

Our Long Distance Connectivity Study developed a set of target outcomes for long-distance services. They do not cover feasibility, deliverability, or the adoption of specific new infrastructure, but provide a starting point for the development of more detailed proposals. The outcomes do not cover international rail connectivity, which will be the focus of separate more detailed study.

We will work with industry partners to develop feasibility and help make the case for these Strategic Interventions, which are presented below:

- Passenger demand forecasting research tells us that longer distance passengers value reliability and service quality particularly highly. We will work with the industry to identify opportunities for reliability improvements and higher-quality rolling stock on long-distance journeys to and from West Yorkshire.
- As set out at the start of this Strategy we are supportive of improvements to the East Coast Main Line as a part of the IRP. Existing rail demand between West Yorkshire and London is high, but there is untapped potential in this market including for intermediate destinations such as Newark and Peterborough and onward connectivity to East Anglia. In addition to improvements between Leeds and London, increased frequency of services between Bradford and London is one of our Strategic Interventions, and we will use our influence in the industry to make the case for this clear.

- Rail's mode share for journeys between West Yorkshire and Birmingham is low, although the overall size of the travel market is large. Improvements to capacity (which in turn could help reduce fares and deliver value-for-money to passengers), frequency, quality and journey time on this corridor are one of our Strategic Interventions.
- Rail services to and from Sheffield, Derby, and Nottingham currently have a very low mode share, and there is opportunity for significant gains in terms of modal shift from car to be made on this route. Strategic Interventions to provide parity of service in comparison with other corridors include capacity increases, improved frequencies, rolling stock quality improvements, and improved and/or direct connectivity onward to Leicester.
- The Settle – Carlisle route currently has a poor service frequency and slow journey times. Improvements to connectivity through faster journey times, capacity enhancements, increased frequencies, direct services to Glasgow, and improvements to rolling stock are our priorities for this route to help improve connectivity between our region and Scotland.
- Mode share improvements could be made on trans-Pennine journeys to and from Manchester, including from Bradford, Halifax and Wakefield, with a particular focus on improved reliability and faster journeys given how important we know it is to long distance passengers, many of whom will be connecting at Manchester to travel to more distant destinations. We will work with the industry to maximise the benefits of TRU and the IRP as plans for these schemes progress.
- Delivery of long-planned direct services from Bradford and Halifax via the Calder Valley to the south side of Manchester and Manchester Airport would unlock a wide range of connectivity and should be a priority.

Local and Intra-regional Connectivity

Our local and intra-regional rail network and service currently face a number of issues and constraints, which make travelling local by rail within West Yorkshire unappealing for many potential passengers:

- Lack of consistency in service frequency. Whilst some areas have a good service (such as Shipley), many are poorly served (such as Normanton).
- Service offer is not aligned with the polycentric nature of the region. Rail services in West Yorkshire have a strong focus on journeys to and from Leeds. Connections between other centres, often more 'orbital', such as from Bradford or Halifax to Wakefield, are generally poor.
- Disparities between peak and off-peak service levels, a lack of early morning and late evening services, and reduced Sunday services (such as only one train per 2 hours on several lines around Wakefield), significantly limit journey opportunities and are not well-suited to post-COVID journey patterns, such as increased off-peak or weekend travel.
- Current timetables do not coordinate arrival and departure times at interchange nodes – both between rail services and between rail and bus – leading to long waits and slow end to end journeys. Examples of this exist not only at natural hubs such as Huddersfield but also at major centres like Leeds (such as on Sundays when trains are infrequent) and smaller stations like Brighouse where better coordination would greatly enhance connectivity. This also hampers long-distance connectivity and acts as a barrier to modal shift from car to public transport.
- Journey times when travelling by rail are often slow, and do not meet our target for station-to-station rail journey times being no slower than 75% of the off-peak, uncongested, car journey time. Instances include travel from Leeds to Knottingley, Huddersfield to Barnsley / Sheffield, and many journeys which involve interchange.

- Reliability and punctuality can be poor, with some routes, such as that east of Leeds towards Selby / York and the Calder Valley line, particularly prone to poor unpunctual services and/or to cancellations.
- Overcrowded services. Crowding remains an issue on many services on the post-Covid railway, including outside the traditional peaks and at weekends. This takes place at times on most routes.

To address the challenges described above, service improvements to provide a consistent standard of connectivity across the region are required. This means improving the connectivity between those parts of the region which are served by infrequent, slow services whilst also ensuring our quickest, most frequent routes continue to offer the best possible passenger connectivity. It also means improving connectivity between services (whether regional or longer-distance) by providing convenient connections and interchange facilities.

The Rail Vision presents our aspirational standards for service frequencies across the region. Existing service frequencies in West Yorkshire and a full description of our aspirational standards are presented overleaf.

Figure 8 shows current service standards by way of frequency of trains in one direction, based on December 2019 pre-Covid service levels in standard off-peak hours. (Some simplification has been applied, so not all services are counted.) A comparison between this and our aspirational service standard set out in the Rail Vision shows the required improvement of service standards in our region.

The **minimum standard** to be achieved across the region is **2 trains per hour**, with **emerging routes** to see a phased improvement from current levels. Such services that need improvement include connections to important **neighbouring areas** – Greater Manchester, South Yorkshire, North / East Yorkshire and Lancashire.
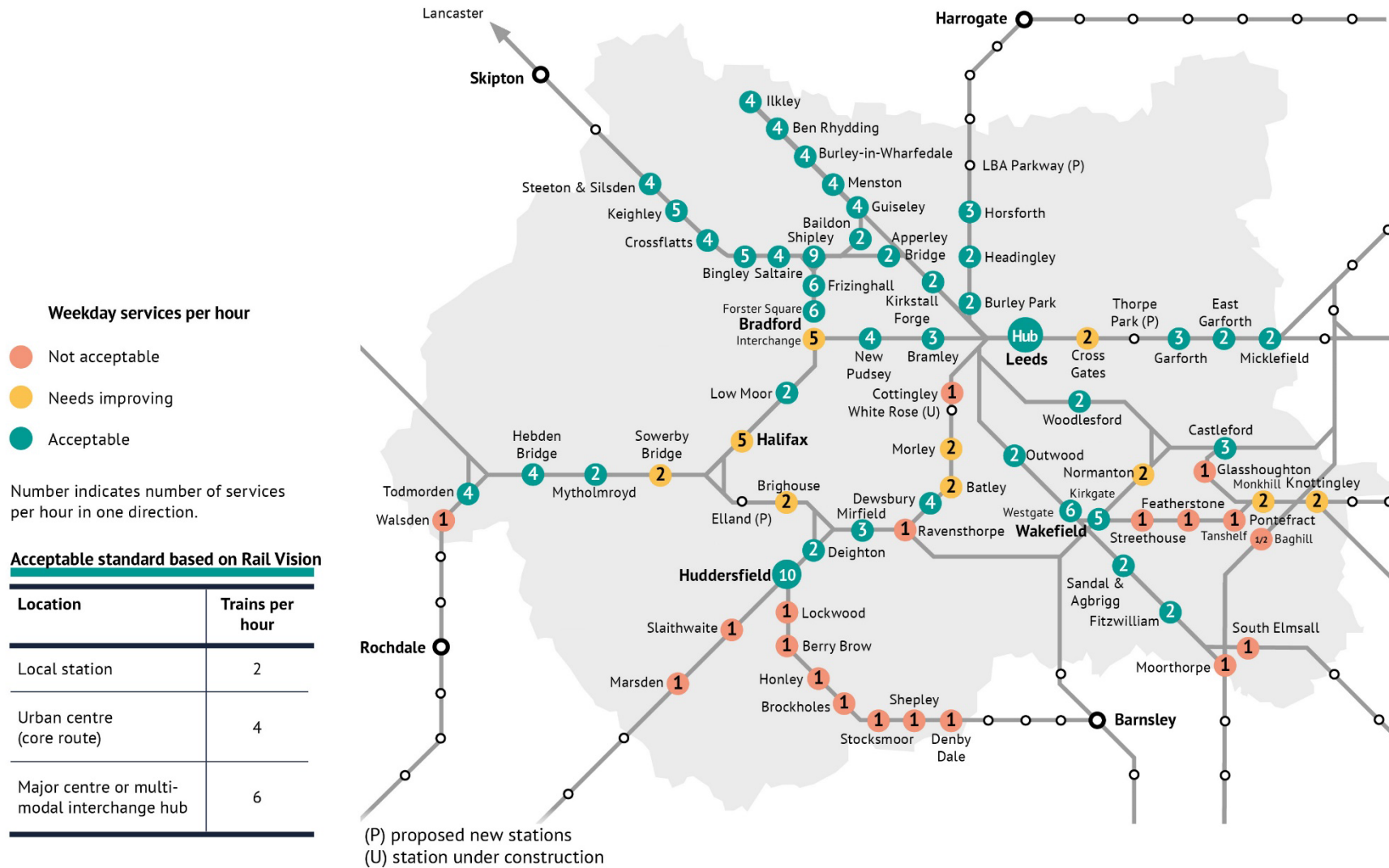
We hold an aspiration to see the **majority of stations** on core radial routes served by a **4 trains per hour** service for **'turn up and go'** travel

into key urban hubs, particularly Leeds. This includes **combined services** where routes converge on approach to our urban centres.

We have a further aspiration to see **'enhanced'** services running **6 trains per hour** between major centres, including Bradford, and the regional centre in Leeds. This would involve local services running in conjunction with **overlapping** services to provide both inter-regional and long-distance connectivity, with an aspiration for **local hubs** to provide multi-modal interchange and improved active travel provision along with the facilities required.

Weekday services per hour

- 🔴 Not acceptable
- 🟡 Needs improving
- 🟢 Acceptable

Number indicates number of services per hour in one direction.

Acceptable standard based on Rail Vision

Location	Trains per hour
Local station	2
Urban centre (core route)	4
Major centre or multi-modal interchange hub	6

(P) proposed new stations
(U) station under construction

Map labels:

Lancaster, Skipton, Harrogate, Ilkley 4, Ben Rhydding 4, Burley-in-Wharfedale 4, Menston 4, Steeton & Silsden 4, Guiseley 4, LBA Parkway (P), Horsforth 3, Keighley 5, Baildon 2, Shipley, Apperley Bridge 2, Headingley 2, Crossflatts 4, Bingley 5, Saltaire 4/9, Frizinghall 6, Kirkstall Forge 2, Burley Park 2, Thorpe Park (P), East Garforth 2, Forster Square 6, Bradford Interchange 5, New Pudsey 4, Bramley 3, Hub Leeds, Cross Gates 2, Garforth 3, Micklefield 2, Low Moor 2, Cottingley 1, White Rose (U), Woodlesford 2, Castleford, Hebden Bridge 4, Sowerby Bridge 2, Halifax 5, Morley 2, Outwood 2, Normanton 2, Glasshoughton 1, Monkhill Knottingley 2, Todmorden 4, Mytholmroyd 2, Brighouse 2, Dewsbury 4, Batley 2, Kirkgate, Featherstone 1, Walsden 1, Elland (P), Mirfield 3, Ravensthorpe 1, Westgate 6, Wakefield 5, Streethouse 1, Tanshelf 1, Pontefract 2, Baghill 1/2, Deighton 2, Sandal & Agbrigg 2, Huddersfield 10, Fitzwilliam 2, South Elmsall 1, Lockwood 1, Slaithwaite 1, Berry Brow 1, Moorthorpe 1, Marsden 1, Honley 1, Shepley 1, Brockholes 1, Stocksmoor 1, Denby Dale 1, Barnsley, Rochdale

Intra-regional connectivity gaps

Our Rail Vision described intra-regional connectivity gaps in West Yorkshire. These are parts of the network where a relatively poor rail service offer does not align with a strong potential demand for rail trips between the hubs of our region.

We have revisited these intra-regional flows and presented the existing service level, journey time, and comparative car journey time overleaf. We have also presented how the evidence for change for each flow has progressed since our Vision was published.

Our conclusions are unchanged from the Rail Vision, and our analysis still shows that connectivity between hubs other than Leeds, is poor and does not serve the potential market for travel as well as it could – leading to low rail modal shares along these routes.

Rail has the potential to fill some of these connectivity gaps, and some of them are covered in our review of the local routes in West Yorkshire below. Other places where rail could be the solution to filling hub-to-hub connectivity gaps will require the construction of new rail infrastructure and the "Expanding the Reach" chapter of this Strategy covers our work in this area.

Rail is not always the optimal public transport solution. In some places, bus and/or mass transit is likely to offer a better connectivity solution, either on their own or in conjunction with rail. In implementing our Strategy we will work across transport modes to ensure connectivity gaps are addressed in an integrated and complementary manner.

Table 3 below summarises service levels on routes between our region's main centres, and how these compare with car journeys. As throughout this document, these are based on December 2019 pre-COVID rail timetables for standard off-peak hours, because services have been subject to frequent change since then. In general, a return to the off-peak service levels from before COVID is a priority for West Yorkshire.

Table 3: Intra-regional connectivity

Flow	Service frequency (daytime off-peak)	Rail journey time (December 2019)	Car journey time (off-peak)	Evidence for Change
Bradford - Leeds	4 tph from Interchange 2 tph from Forster Square	~17-20 minutes to Interchange ~25 minutes to Forster Square	25-50 minutes	Previously assumed to be enhanced through NPR; now subject to further planning as part of the IRP studies. Improvements to 6tph identified as part of the strategic evidence for Calder Valley line enhancements.
Bradford - Wakefield	4 tph requiring change at Leeds 4 per day direct	~50 minutes via Leeds ~45-55 minutes direct	30-55 minutes	Previously part of NPR (interchange at Leeds), subject to detail planning as part of the IRP studies. Case for hourly direct services identified in Rail Vision development and from district consultation. Improvements identified as part of the strategic evidence for Five Towns area enhancements. In longer term, the Combined Authority will consider options to reinstate the Spen Valley route to provide direct connectivity.
Bradford - Huddersfield	1 tph	~35-40 minutes direct	25-45 minutes	Improvements to 2tph identified as part of the strategic evidence for Calder Valley line enhancements.
Bradford - Halifax	3-4 tph	~10-15 minutes	25-40 minutes	Improvements to frequency and journey time identified as part of the strategic evidence for Calder Valley line enhancements.
Leeds - Wakefield	5 tph to Westgate 3 tph to Kirkgate	~11-15 minutes to Westgate ~16-30 minutes to Kirkgate	20-35 minutes	Improvements to be considered as part of IRP studies. Frequency enhancements to services to/from beyond Wakefield stations, as evidenced by WYCA connectivity standards, would increase frequencies on these routes too.
Leeds - Huddersfield	5 tph (fast or semi fast trains)	~17-19 minutes	30-50 minutes	Improvements to journey times and frequencies (to 6tph fast plus semifast) to be delivered as part of TRU.

Flow	Service frequency (daytime off-peak)	Rail journey time (December 2019)	Car journey time (off-peak)	Evidence for Change
Leeds - Halifax	3-4 tph	~35 minutes	30-50 minutes	Improvements to frequency and journey time identified as part of the strategic evidence for Calder Valley line enhancements.
Wakefield - Huddersfield	4 tph requiring change at Leeds 1 tph direct	~55 minutes ~25 minutes direct	35-55 minutes	1tph service largely ceased during COVID; priority to restore this Frequency improvements identified as part of the strategic evidence for Five Towns area enhancements.
Wakefield - Halifax	2 tph change at Leeds 4 per day direct	~60 minutes via Leeds ~35 minutes direct	35-55 minutes	Improvements identified as part of the strategic evidence for Five Towns area enhancements. Case for hourly direct services identified in Rail Vision development and from district consultation.
Huddersfield - Halifax	1 tph	~20 minutes	20-35 minutes	Improvements identified as part of the strategic evidence for Calder Valley line enhancements.

Local connectivity gaps

Table 4 overleaf presents examples of how passenger connectivity on each main rail route in West Yorkshire compares to the frequency standards set out above, as well as our aspiration that station-to-station rail journey times should be no slower than 75% of the off-peak, uncongested car journey time, in order that the door-to-door public transport journey can be competitive. It does not however attempt to include all services. Train frequencies are again based on pre-COVID (December 2019) off-peak standard services – in several cases, services are currently running at lower levels than these, and a restoration of these off-peak service levels is a priority for the Combined Authority.

Based on consultation and existing evidence, we have developed an Indicative Train Service Specification (ITSS), which shows one way that our aspirations for the region's rail network could be translated into a specific set of train services. We have then compared this with the existing (weekday, off-peak) offer to show the connectivity gap on each route. Our view is that Sunday services should conform to the standard daily off-peak pattern.

For both local and intra-regional centre-to-centre connectivity there is a programme of further work that is required to plan, make the case for, and work towards delivering improvements to connectivity. We will seek funding opportunities to progress this programme of work and support local and industry partners in the instances where they take this evidence-building forward. The next steps for each route are also summarised in the table overleaf.

We will work closely with the local and rail industry partners to make the case for improvements.

Table 4: Local connectivity service frequency/journey time gaps and next steps

Flow	Service frequency gaps	Journey time gaps	Next steps
Harrogate Line: Leeds to York via Harrogate and Knaresborough	Additional trains required alongside London services to bring total to 4tph Leeds to Harrogate	Journeys between Leeds and stations to the north of the route, notably Harrogate and Knaresborough are slow as a result of line speeds and stopping patterns.	Restore pre-COVID service levels Update existing business case evidence to demonstrate case for improvements
East of Leeds: Leeds to York/Selby via Micklefield	Frequency at WY local stations to be increased from 2 to 4tph (2tph to York and 2tph from Selby) Long-distance services should be increased from 1 to 2tph to Selby and Hull Local and intercity trains to serve Thorpe Park	Journeys towards York from local stations are uncompetitive with car due to stopping patterns and train performance.	Strategic case for speed and frequency improvements is established, including in Outline Business Case for TRU Work with industry partners to ensure the local benefits of TRU are delivered
Five Towns: Leeds to Knottingley via Castlefield/Wakefield	Increase frequency of the existing Leeds - Knottingley services via Leeds and Wakefield from 1 to 2tph Direct 1tph services from: Castleford to York, Knottingley to Goole, Pontefract / Knottingley to Doncaster and Pontefract to Bradford	Journeys from Knottingley and Pontefract to both Leeds and Wakefield are slow and reduce the attractiveness of rail. This in part due to indirect routing.	Build on existing work to develop pipeline of interventions and supporting business case Potential quick wins: Restore pre-COVID service levels New Manchester – Huddersfield – Wakefield – Castleford – York service Hourly extension of service to Goole Restoring Your Railway work led by SYMCA developing case for Pontefract - Doncaster
West Riding line: Leeds to Sheffield/Doncaster via Wakefield Westgate	Increase frequency of stopping services to Sheffield and Doncaster from 1 to 2tph Increase frequency of fast trains to Sheffield to 2tph (1tph through from Bradford).	Journeys from local stations to Leeds, Doncaster and Sheffield are slow as they are on the crucial centre-to-centre Leeds – Sheffield flow.	Existing evidence for enhancements needs reviewing and updating as part of IRP studies
Hallam Line: Leeds to Sheffield via Barnsley	Increasing stopping services from 1 to 2 trains per hour, providing a minimum 2tph at local stations and 4tph at key hub stations Introduce direct trains from Normanton to Leeds	Journeys to Sheffield from most West Yorkshire stations on this route are uncompetitive with car, as are journeys from Darton to Leeds and Normanton to Leeds.	Build on existing work to develop pipeline of interventions and supporting business case, to deliver frequency and speed improvements

Flow	Service frequency gaps	Journey time gaps	Next steps
TransPennine West: Leeds to Manchester via Huddersfield	All local stations to have at least 2tph. In longer term, stations closer to Leeds to move towards 4tph Brighouse (and Elland) to have 2tph towards Leeds via Dewsbury	Journeys from some local stations to Leeds are an issue, and Brighouse has poor journey times to Leeds and Manchester, and Huddersfield in part down to train performance, stopping patterns and indirect routing.	Strategic case for improvements is established, including in Outline Business Case for TRU; infrastructure proposed under TRU and IRP should facilitate improved journey times and frequencies to meet / approach our standards Work with industry partners to ensure the local benefits of TRU are delivered Brighouse services to become semifast to Leeds
Penistone Line: Huddersfield to Sheffield	Increase frequency of the current stopping services from 1 to 2 trains per hour	Journeys to Sheffield from most locations including Huddersfield which is an important interurban flow.	Restore pre-COVID service levels Based on established business case for frequency and speed enhancements, work with industry to pursue funding Investigate further the case for reinstating "network gap" between Penistone and Sheffield via Deepcar, jointly with SYMCA.
Calder Valley Line: Leeds to Huddersfield/ Burnley/Manchester via Bradford	Increase off-peak service frequency to provide a two train per hour service on all routes (total service at least 4tph at most locations) Increase Leeds – Bradford Interchange to 6tph in total	Journeys into Leeds from west of the route, and into Manchester from the east are slow – though car journeys also slow due to a constrained road network. Improving Bradford – Manchester journey times is a particular target. Rail journeys to Bradford from Sowerby Bridge, Mytholmroyd and Walsden are slow and uncompetitive with car.	Established strategic evidence sets out need for enhanced services; close alignment with NPR proposals. Priority to review and update evidence in the context of the IRP.
Airedale Line: Leeds/ Bradford to Skipton	Service frequencies generally already meet connectivity standards. In longer term, 4th train per hour Leeds – Skipton (which could be stopping or semi-fast).	Journeys from Leeds to Bradford are slower than via New Pudsey, but intermediate connectivity is important.	Connections between Baildon & Leeds via Guiseley and Shipley to be optimised Develop strategic evidence for the case for future service improvements in these corridors
Wharfedale Line: Leeds/Bradford to Ilkley	In longer term, increase Leeds – Ilkley to 4tph off-peak rather than peak-only.	Travelling from Baildon to Leeds is slow as there is no direct service.	
Dearne Valley S&K Line: Sheffield to Pontefract and York	Increase to hourly as priority; in longer term, work towards 2tph.	Current end-to-end journey times are uncompetitive with car, but there are opportunities for improvement.	Established business case evidence for enhancements; work with industry to pursue funding

Integrated Connectivity

The previous pages have described the way in which train services should evolve across our region's geography in order to serve a variety of markets. However, the various rail services must not be planned in isolation from one another or from other modes of transport, if rail is to unfold its true potential.

Why is integration important?

Most public transport, and especially the rail network, is geared towards journeys into and out of main centres in our region, especially Leeds. Where services are attractive and capacity adequate, rail currently achieves good modal shares, such as commuting from Airedale and Wharfedale into Leeds, or for travel to London. For other journeys, it too often performs poorly, with disproportionately unattractive and variable journey times, and often poor frequencies. This is especially the case where a change of trains is needed, such as a journey from the Upper Colne Valley (e.g. Marsden) to Bradford. As a result, journeys of other types are carried out overwhelmingly by car, resulting in total in a high volume of road traffic.

Rail needs, within the wider transport network, to be part of a more comprehensive network solution that reflects the wide variety of travel that takes place. While the physical and population characteristics of West Yorkshire could make it fertile ground for public transport, current rail service geography is not in all cases aligned to the main travel flows, some significant settlements lack direct access to the rail network, and no single mode can serve all flows.

An attractive public transport network must provide consistent and predictable levels of service to maintain simplicity and ease of use. However, providing this in our region is a challenge, and from smaller localities it is likely only to be realistic to provide services with attractive frequencies to a small number of destinations or hubs. Our goals can therefore only be achieved by coordinating services, so that interchange between trains, between train and bus, or indeed between buses, is easy, reliable, consistent and intuitive. Within this, the railway must transform from being, at worst, a set of individual services which do not work together, into being the backbone of a comprehensive sustainable mobility network for our region and beyond.

What should integration look like?

The above factors lend themselves strongly to a system of 'integrated clockface timetabling' where:

- Trains and buses run at the same minutes past each hour (hourly, twice per hour or more depending on the nature of the flow) all day, every day
- All the most important links enjoy direct services
- At interchange nodes, trains (and buses) in all directions 'meet' once or twice (occasionally more) per hour, enabling easy and direct interchange from anywhere to anywhere
- Bus routes are designed, where appropriate, to feed into rail services at such nodes, which might be large towns or might be local railway stations
- Provision of other first/last mile options including cycle and car club, particularly where bus services are less frequent.
- The system operates with a high degree of reliability so that there is confidence that connections will almost always be met
- This is backed up by a simple fares and ticketing system valid across all operators and modes

This "best practice" approach is common in many other parts of Europe, such as the Netherlands, Switzerland and the Czech Republic.

How could it benefit West Yorkshire?

Under this approach timetables can become simple and intuitive, journeys are consistent and reliable, and a far wider range of trips than traditionally assumed becomes a sensible prospect by public transport. As an

example, the map overleaf show where can be reached on pre-COVID timetables by rail within one hour from Slaithwaite station, and where it would be possible to reach within an hour, without the trains themselves physically running any faster, if services around Huddersfield were integrated on these principles. Adding bus integration would enhance the benefits even further. (The maps only consider journeys eastwards from Slaithwaite, travelling through Huddersfield, as the benefits of integrating other locations outside West Yorkshire, such as Stalybridge or Manchester's stations, have not been considered at this stage.)

Figure 9: Current and potential rail journeys within an hour from Slaithwaite
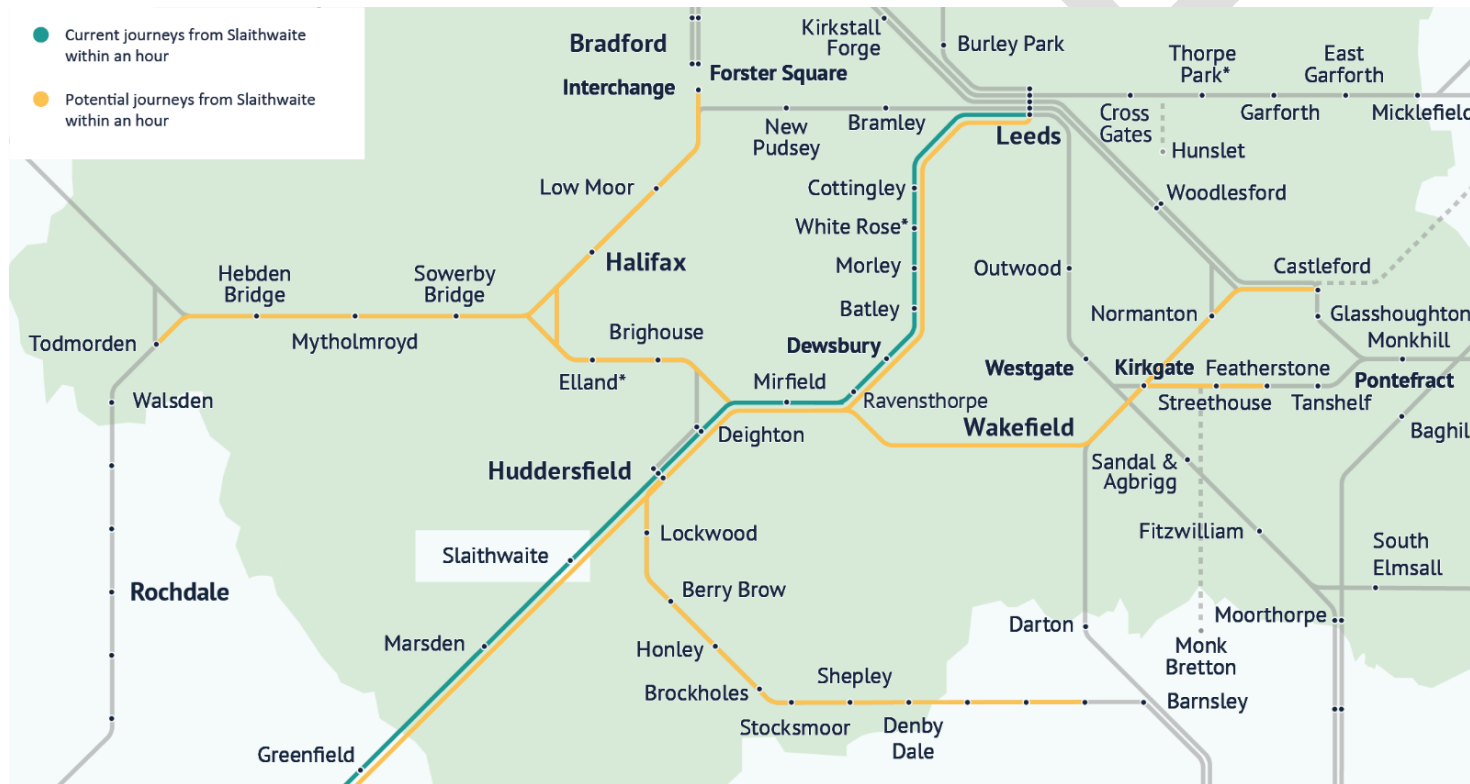
While the approach can be applied within one single mode (such as on rail alone), the advantages are amplified when it is combined across modes to create an integrated public transport system. The objective should be a multi-modal system that allows an opportunity to travel from anywhere to anywhere, at least twice an hour, simply, reliably and affordably, and at least as fast from door to door as the equivalent car journey. The railway will form the spine of this network.

An integrated timetable can help in creating an inclusive, non-discriminatory transport system: because interchange is concentrated at specific times around the hour and specific places, footfall is greater (enhancing personal safety), and interchange nodes are specifically designed and adapted for the purpose.

What are the next steps?

An integrated system of this type will not be achieved overnight: it needs changes to infrastructure, timetabling practice, performance management and beyond, but there are some quick wins such as adjustments to remove "just-miss" non-connections, which can be addressed relatively easily. Looking beyond this, future reforms to the rail and bus industries are likely to present valuable opportunities to move to this more harmonised public transport concept.

Initial modelling work has shown strong potential benefits for West Yorkshire from this approach, with modal shift from car and improved access to opportunity and amenity. We will build on this to develop the concept and supporting business case, to demonstrate in more detail what the future network could look like, including for example how bus routes might be optimised, and how it might be delivered, as an input to our new Local Transport Plan.

Capacity Needs

Introduction

The Rail Vision sets out our ambitious plans for future rail services in West Yorkshire. Improving capacity is central to achieving these ambitions, and a key part of achieving national and regional policy objectives such as the 'levelling-up' agenda, decarbonisation and post-COVID-19 recovery.

As set out in the Connectivity chapter, a key part of our Vision is introducing our minimum standard of two trains per hour on all local and regional services. Alongside this, we must ensure there is enough capacity on trains to accommodate everyone who wants to travel and avoid overcrowding. We will also make sure that we expand capacity on the network for both passenger and freight services to meet the growing demand that is needed for us to realise our regional objectives.

In the rail industry the term 'capacity' has two meanings:

- The space available on passenger trains, in terms of the number of seats and available space for standing on shorter journeys, to accommodate consistently and reliably the number of passengers wishing to travel; and
- The ability of the railway network itself, in terms of the tracks, signalling and junctions, to handle the number and types of trains required to deliver the timetabled passenger and freight services.

The two factors are interrelated. Providing additional passenger capacity can be achieved by providing either more frequent trains (which may require additional track) or longer trains (which may require more or lengthened platforms at stations). Providing more frequent trains gives passengers more choice about when they travel and provide better interchange opportunities. This can attract more people to travel by rail, which then in turn drives the need for additional passenger capacity.

A similar situation occurs for freight services: providing more paths on the network for freight trains (and more convenient / faster paths) can attract more companies to transport freight by rail, driving the need for additional freight capacity.

The existing capacity on the rail network is highly utilised, meaning there is limited scope to provide longer, more frequent trains without investment in infrastructure.

This chapter summarises the work we have undertaken to understand the capacity challenge and identify what investment may be necessary. We also set out how we will work with the rail industry to secure enough capacity on the rail network to deliver the Rail Vision.

West Yorkshire Capacity and Rolling Stock Study

To understand the nature and scale of improvements to the network that are required to deliver our aspirational service levels, we carried out a detailed study of capacity in our region. This considered:

- The service levels needed to enhance passenger connectivity to support the wider decarbonisation, levelling up and economic objectives in our region, as set out in the Connectivity Chapter;
- The projected demand growth in the region; and
- The on-train and track capacity of the current and future network.

Our study confirmed that a lack of capacity constrains the improvements which can be made to rail services in West Yorkshire. On-train capacity is very limited in places. Before COVID-19 many passengers faced severely crowded rail services on a daily basis, having to stand on peak services in and out of key centres such as Leeds, Bradford, Huddersfield and Wakefield. In some cases, people were unable to board their train due to severe overcrowding.

Overcrowding eased during the pandemic, but we expect the issues to return as more passengers return to the railway. Some routes are already experiencing problems, including at weekends, as the leisure market is recovering more strongly than commuting and business travel. This is

exacerbated by late, cancelled, or short-formed trains – reflecting the highly constrained train fleet sizes in the North.

On top of this, in many places track capacity is so limited that it is not possible to introduce any new services, while platform lengths are too short to run longer trains. This makes it difficult to provide the service levels that West Yorkshire needs to boost productivity, support clean and inclusive growth, and deliver a 21st century transport system alongside decarbonisation.

The following sections summarise the evidence underpinning these conclusions, along with next steps for addressing the capacity challenges.

On-train capacity

The on-train capacity section of the Capacity Study considered how future growth in passenger numbers will affect crowding on trains into key centres in the weekday morning peak (7am-10am). It covered all stations in the districts of the Leeds City Region including Leeds, Bradford, York, Harrogate, Selby, Wakefield, Calderdale, Kirklees, Barnsley and Craven.

Table 5: 2019 and future utilisation of on-train capacity in the morning peak by route

Line	2019		Future (see note below)	
	Seating	Standing	Seating	Standing
Harrogate	●	●	●	●
East of Leeds	●	○	◐	◐
Five Towns	●	○	●	●
West Riding Line	◐	○	●	●
Hallam	●	○	◐	◐
TransPennine West	●	●	●	●
Calder Valley	●	●	●	●
Airedale	●	◐	●	●
Wharfedale	●	●	●	●

○ = no trains exceed capacity

◐ = some trains exceed capacity

● = most trains exceed capacity

NOTE: The study was undertaken before COVID-19, at a time when the weekday morning peak represented the busiest time for the railway, and therefore the greatest constraint on on-train capacity and track capacity. We acknowledge that the rail market has changed since 2020, including a reduced morning peak but a much more prominent off-peak travel and associated leisure market. However, the approach and findings of the study remain appropriate to shape this Strategy.

What is not yet clear is how quickly demand will return to pre-COVID projections of future demand across the various markets rail serves. Therefore, this evidence considers a 'future year' projection – requiring further work with the industry to agree the potential phasing and specific timing of future growth.

While the morning peak was the busiest time before COVID, this is no longer the case, and that may remain true in future. From the point of view of the maximum capacity needed, this does not greatly matter: the critical issue for this Strategy is *how much* capacity is required rather than *when* in the day, and the week, it arises.

Critically, if the network is to support decarbonisation in our region by 2038, there will be a need to accommodate at least 60% additional rail trips per year, in addition to increased demand arising from wider economic growth and increased social inclusion. For all of this, additional capacity will be required.

As shown in Table 5 the following lines had peak-time demand greater than the total seating and standing capacity of the trains in 2019:

- Harrogate Line
- Huddersfield Line
- Calder Valley Line
- Wharfedale Line

In addition, on the West Riding line, while capacity is generally sufficient on intercity services, crowding was in 2019 significant on several local services.

Most lines will see demand greater than seating and standing capacity in the future, meaning that some passengers will not be able to get on their chosen service unless capacity is enhanced. Additional train capacity will therefore be needed to provide enough space for everyone and make travelling by train a more comfortable experience.

The work calculated the number of extra carriages (the individual coaches that make up a train) which are needed to meet the projected growth in demand and reduce overcrowding, as well as run the additional services which our region needs to meet our connectivity needs. The requirements have been calculated for three different scenarios, shown in Table 6:

- Low growth to 2040 - the carriages required to accommodate growth in a COVID-19 recovery scenario which assumes peak demand in the region will return to pre-COVID levels by 2025, with growth to 2040 based on a combination of Network Rail Continuous Modular Strategic Planning (CMSP) growth forecasts and our local growth assumptions;
- High growth to 2040 - the carriages required to accommodate growth to 2027 as forecast in our Transport Strategy, with growth to 2040 based on based on a combination of Network Rail CMSP growth forecasts and our local growth assumptions, resulting in a +100% increase in demand from 2020-2040; and
- Service enhancements - the number of carriages required to deliver our aspirational connectivity levels, without any demand growth.

As shown in the Table 6, **up to 79 additional carriages would be required to deliver a low growth recovery from COVID-19, with up to 195 carriages required should demand return as projected prior to COVID-19. In addition, a further 43 carriages would be required to deliver our required service frequency improvements, bringing the total of additional vehicles required to 238** against a base of 743

carriages to deliver the current service. It should be noted that the base used here, referred to as "2022", refers to the December 2021 timetable, not the pre-COVID December 2019 as used in Table 5. Because fewer trains ran in the peaks in December 2021 than did in 2019, the number of carriages operating on several routes was less in 2022. Therefore, if the pre-COVID December 2019 timetable were instead taken as the base, then the uplifts required against the base train fleet size would be less than shown here.

The numbers given here should be taken as orders of magnitude rather than precise prescriptions for the industry, because the ways in which services are planned and trains provided are complex. The values given have regard to the need to maintain sufficient spares in the fleet to allow for maintenance and cover for failures or other contingencies. Overall, this represents a significant increase in current rolling stock volumes, and we will need to work closely with the industry to identify opportunities to realise this growth.

Table 6: Carriages needed on each route to meet low growth, high growth and service enhancement scenarios

Route	2022	Low growth (2040)	High growth (2040)	Required service enhancements	Service enhancements plus low growth (2040)	Service enhancements plus high growth (2040)
Harrogate	51	57	72	84	84	84
East of Leeds	215	220	238	227	227	238
Five Towns	16	22	28	43	43	43
West Riding	46	55	63	70	70	70
Hallam	35	38	44	30	38	44
Huddersfield	141	146	161	162	162	162
Penistone	9	18	18	18	18	18
Calder Valley	125	136	151	201	201	201
Airedale	75	90	100	94	94	100
Wharfedale	28	38	61	28	38	61
Dearne Valley	2	2	2	24	24	24
Total	743	822	938	981	999	1,045
Difference vs base	-	+79 (11%)	+195 (26%)	+238 (32%)	+256 (34%)	+302 (41%)

West Yorkshire Combined Authority- Rail Strategy

Track capacity

The track capacity section of our Capacity Study analysed how heavily used the rail network infrastructure in West Yorkshire is. The end results are displayed on the map overleaf, where each line is colour coded according to the number of minutes it is in use per hour. This shows areas which were heavily used in the last pre-Covid timetable in December 2019, and which may struggle to accommodate new services.

While not all services running then have yet returned since COVID, the diagram overleaf shows clearly that large areas of the rail network across our region are heavily used, with the timetable using close to the full capacity of the tracks across long stretches of the network. There are several areas which are close to full capacity:

- The approaches to Leeds station.
- The Harrogate Line: between Harrogate and Leeds;
- The East of Leeds to York and Selby Line: between Micklefield and Leeds;
- The West Riding Line;
- The Huddersfield Line: between Dewsbury and Leeds;
- The Penistone and Hallam Lines: particularly the approach to Barnsley Interchange;
- The approach to Castleford in the Five Towns;
- The approaches to Bradford Interchange on the Calder Valley Line;
- The Airedale & Wharfedale Lines between:
  - Apperley Bridge and Leeds;
  - Guiseley and Shipley; and
  - Cononley and Keighley.

A variety of infrastructure solutions could be used to improve capacity in these areas, including signalling enhancements, adding more tracks and improving junction layouts. Specific improvements to Leeds station and its immediate approaches could include additional lines and platforms,

widening viaducts and improving junction layouts to avoid different routes crossing each other and creating conflicts.

Leeds station

As the largest rail hub in West Yorkshire – and one of the busiest in the country – Leeds station has a significant role in accommodating local, regional and national rail services. Ensuring there is sufficient capacity is critical to supporting services throughout the region - the majority of services start at, terminate at or pass through Leeds, or are affected by the infrastructure constraints at Leeds. Because of the importance of the Leeds area, these constraints have impacts much more widely around the North, often causing delays to spread across a wide area of the network. The constraints at Leeds station include:

- Short platforms, which restrict the ability to operate longer trains;
- Pinch-points on approaches to the station, which constrain overall capacity across the entire region and prevent operation of additional services; and
- The track layout and nature of services mean platforms are used inconsistently, with some busy all day and others less utilised.

These problems are exacerbated by the timetables serving Leeds, which are not designed with its capacity constraints in mind. Services often have to be to be timetabled with long dwell times at Leeds, using its capacity as a 'safety valve' to make up time lost elsewhere on the network and leading to high platform occupancy. Over the longer term, supporting HS2, Northern Powerhouse Rail and implementing our aspirational service pattern would bring further capacity challenges.

Possible solutions to these challenges involve combinations of providing additional platforms, track and potentially new routes into Leeds station, including the T-shaped station concept as proposed by HS2. These solutions are substantial and will need further whole-industry and whole-network development work to identify and deliver the most appropriate solutions.

Peak time track occupations, May 2019 timetable

- Severely constrained >75%
- Moderately constrained 50 — 75%
- Not constrained <50%

This map and the data that informs it only cover main routes with frequent passenger services
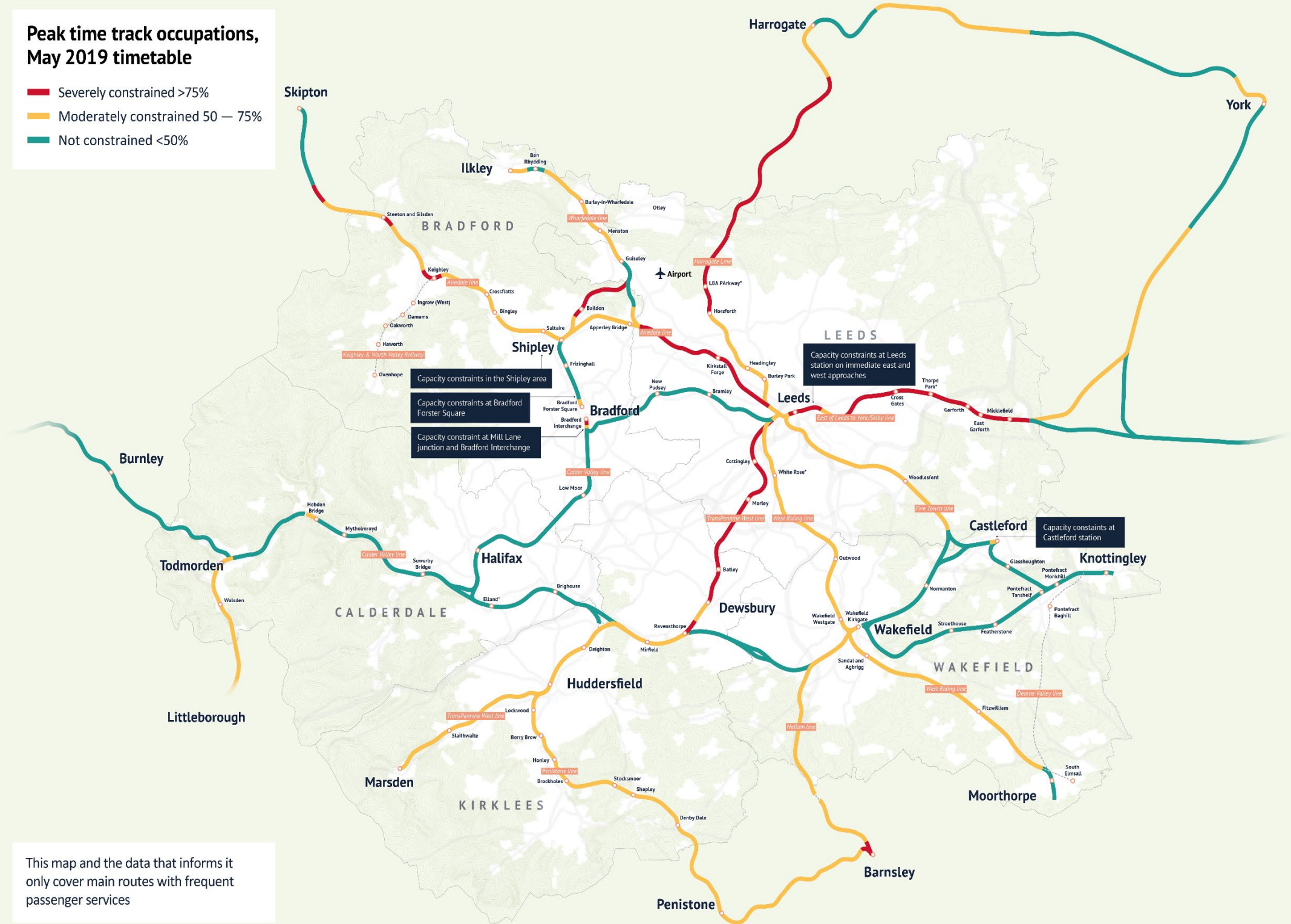
Capacity constraints in the Shipley area

Capacity constraints at Bradford Forster Square

Capacity constraint at Mill Lane junction and Bradford Interchange

Capacity constraints at Leeds station on immediate east and west approaches

Capacity constaints at Castleford station

Interventions required and next steps

Based on the work undertaken so far, **there is a clear need for capacity enhancements at Leeds station and elsewhere across West Yorkshire**.

More detailed rail planning and business case work is needed to understand what specific improvements are needed, what phasing of delivery would be optimal, and which options provide best value for money. To make the case for these improvements, we will work with the industry and partners to review existing work and to produce updated business case evidence, including feeding into the Integrated Rail Plan studies wherever possible. Further work will also be needed to demonstrate precisely when each stage of additional capacity will be needed and create a programme of potential works.

However, our initial technical work has produced a staged set of interventions to deliver our capacity requirements. As set out above, the COVID-19 pandemic brought unprecedented disruption to society with a major impact on the usage of public transport. Rail demand, however, has returned strongly across our region. While there is still uncertainty around the long-term impact of COVID-19 on rail demand and wider travel habits, our rail network is constrained *today* as a result of years of underinvestment. Even taking the most pessimistic view of no growth, which we do not consider realistic, our rail network will still require significant and urgent investment. Figure 10 summarises the interventions the region requires in the short and medium terms.

In the longer term, in order to meet our region's ambitions in decarbonisation and inclusive growth, rail will and must play a significant role. Our rail network needs to be significantly improved, so that rail travel can be a viable and attractive option as part of an integrated public transport offer across a wide range of journeys. Figure 11 sets out the key interventions required on our existing network to meet those objectives if we are serious about tackling the climate emergency and enabling

inclusive economic growth. These are in addition to interventions required in the 'no growth' scenario, and to Northern Powerhouse Rail and HS2.

It is likely that some of these capacity options will have an impact on land, housing growth and development. **We will urge the Government to work with us, our district partners and the industry to understand the impact and agree viable options to deliver the capacity we need to realise our vision for rail**.

Figure 10: Interventions required in a 'no growth' scenario

Legend:
- Longer trains
- Additional peak trains
- **Other interventions**

(P) proposed new stations
(U) station under construction

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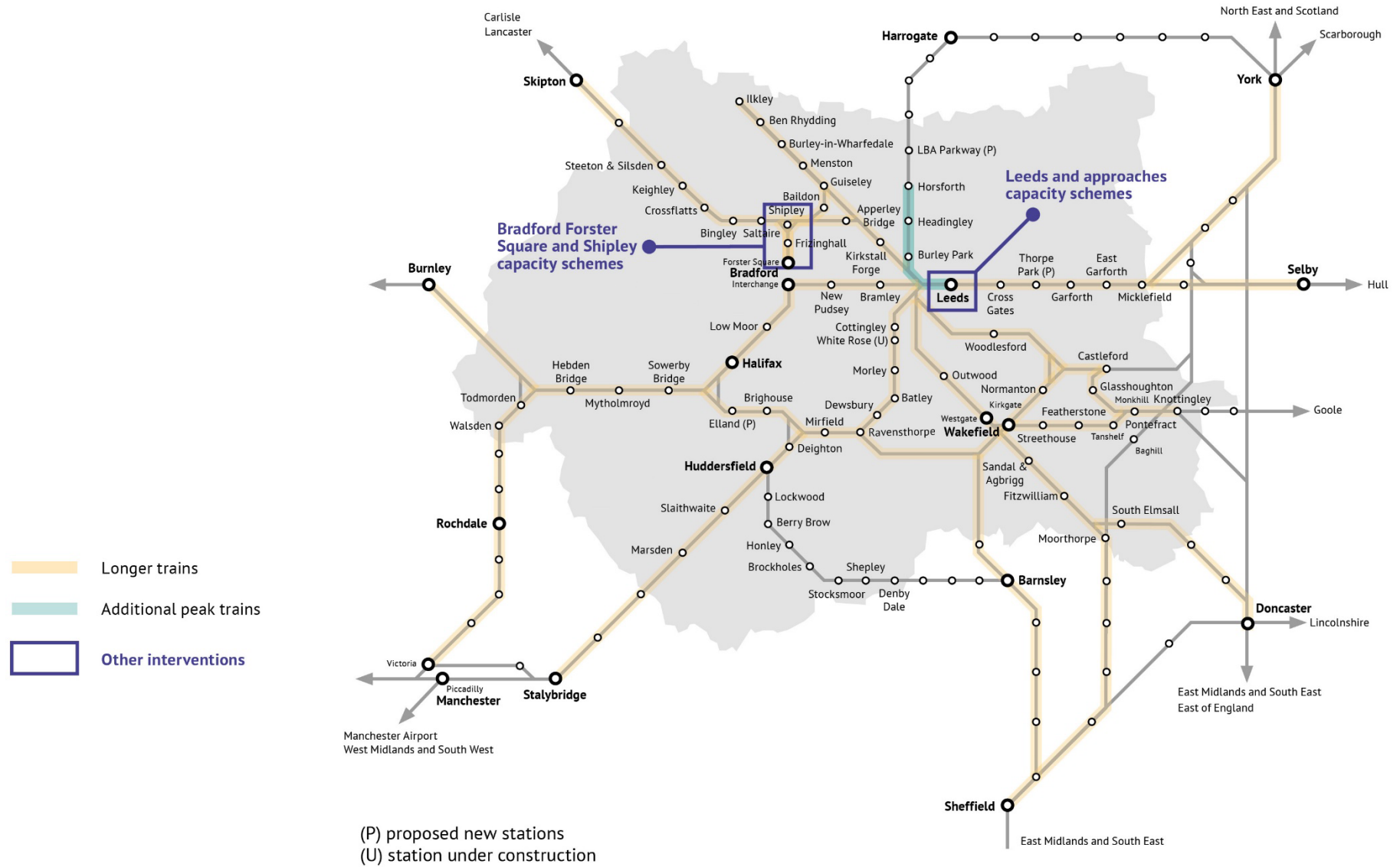
Figure 11: Interventions required to meet our region's objectives

Longer trains

Signalling improvements

Other capacity enhancements e.g. tracks

Electrification priorities (first phase) associated rolling stock improvements.

(P) proposed new stations
(U) station under construction
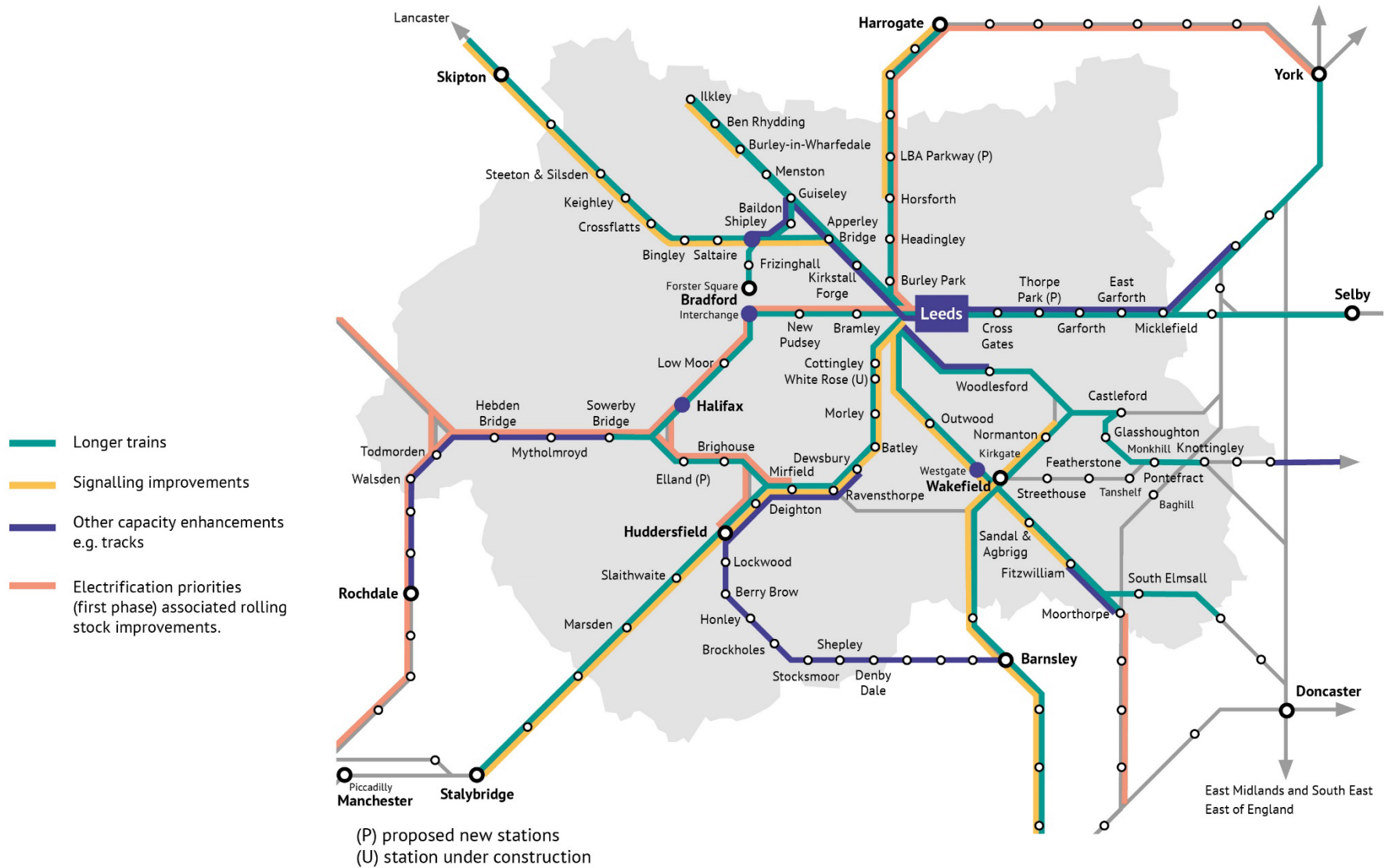
Passenger Experience and Access to the Network

Introduction

A core principle underpinning this Strategy is creating a regional rail network which is safe, easy to use, accessible and convenient. This chapter focuses on improving passenger experience on the rail network in West Yorkshire, spanning across the passenger journey from buying tickets, to accessing and using stations, to the on-train experience.

The development of **rail fares and ticketing** must be considered as part of the wider West Yorkshire and North of England public transport ticketing system. The way that the fares and ticketing system operates has real impacts on the overall attractiveness and affordability of rail. Buying a ticket is often someone's first interaction with the rail network. We need a system that can fit around how people live their lives and travel, and which ensures everyone gets the best and most appropriate fare for the journey they make, but is not overcomplicated.

Stations are the gateways to our rail network. While rarely the true start or end of a journey, they are the face of the railway to the travelling public. The quality and fitness-for-purpose of stations is crucial to achieving modal shift towards rail and promoting socially inclusive and sustainable access to opportunity and amenity.

Rail stations are often places of interchange between rail services, as well as interchange between rail and other modes of transport – including bus, walking, cycling, taxi, car club and car. Stations can also function as local hubs in their own right, hosting valuable services for communities. As well as being attractive and accessible, each station needs to be rooted in its local area and have functions which suit its community. Provision of high-quality information about onward transport options will help to ensure that

the interchange between rail and the first/last mile of the passenger journey is seamless.

Most of the passenger journey is spent onboard trains, so providing the right **on-train environment and experience** is important to encourage modal shift. Making sure that journey types and train types are properly matched up (e.g. using higher density seating for shorter journeys while maximising comfort on longer trips) can also help make travel more comfortable. Many trains currently used in West Yorkshire are over 30 years old and will need to be upgraded or replaced to comply with de-carbonisation requirements and to meet the minimum quality standards that we expect.

> **Station and On-train Safety and Inclusivity:** We believe that the railway must be safe and accessible for everyone, from all walks of life. Ensuring that stations and the on-train experience are inclusive and safe should be the default position of the railway industry, and is a position we strongly advocate. This principle underpins all the possible interventions set out below.

> **Rail Network Safety:** Our position is that the inherent safety of rail is a major strength and we will continue to support industry-wide efforts to maintain and improve it, such as through upgrading or closing level crossings where appropriate. As well as safety benefits to road and rail users, these investments can also bring further benefits through improving rail journey times, reliability and capacity.

Fares and ticketing

Fares and ticketing form an important first impression of the rail network. No matter how efficient, reliable, comfortable, and fast the rail system may be, we will struggle to achieve modal shift and inclusive growth if buying a

ticket is perceived as poor value for money or is so complex that it creates accessibility barriers.

Currently, the wide range of rail products, fares, rail cards, restrictions, and retail channels present a complex and often difficult system for passengers to navigate. This can make it challenging for people to have confidence that the products they purchase are correct and provide them with the best value for money for their travel requirements. While some rail fares are seen as good value, others are viewed as prohibitively expensive, and the wider perception is that arbitrary inconsistencies abound, especially where journeys cross administrative boundaries.

Alongside this, travel patterns are changing – including part-time or flexible working, multiple work locations, and the growth of the leisure economy compared to business travel and commuting. The way tickets are delivered is also changing, with gradual migration away from paper tickets towards mobile or e-ticketing, smart cards (such as MCard), and other products. However, this has been limited by the complex structure of the rail industry, including the fares and ticketing systems themselves.

To help achieve our objectives for the Rail Strategy, we have identified a set of specific priorities for the development of rail fares and ticketing:

- Simplicity – We will call for improvements to reduce the complexity of fares and ticketing – aiming for a system which is simple, clear, logical and easy to use for passengers;
- Value for money – We will support measures to ensure passengers achieve good value for money for their travel – whilst also tackling issues relating to affordability and increasing the attractiveness of rail travel as the 'product' purchased; and
- Passenger needs – We will endorse changes to the fares and ticketing system to better suit changing travel patterns and passenger needs, integrated across all modes of travel – including catering for pan-Northern travel markets as connectivity improves.

Addressing these issues is likely to be challenging within the current fares structure, and as a Combined Authority, we have only limited influence over ticketing and do not set rail fares. However, the Williams-Shapps Plan for Rail set out a case for a new fares structure which is better equipped to cater for the aims set out above, including simplifying fares and introducing London-style ticketing on urban and commuter networks throughout the UK.

We will feed into the implementation of this structure, making sure it contributes to our economic, social, and environmental objectives and is coordinated with our wider transport network. We also recognise the tensions and potential conflicts that would need to be carefully considered – notably in balancing simplicity, value for money, fairness, flexibility, and operating efficiency.

Stations

Stations are the face of the railway to the travelling public. The location, quality and methods of access to stations fulfil an important role in potential passengers' travel decisions. Stations can also offer wider social value, providing hubs where people meet, and shaping wider community- and place-based economic development.

Our vision for rail stations is for them to be attractive gateways to the rail network which help rail to contribute to socially inclusive and sustainable economic growth. They will provide comfortable, safe and pleasant waiting environments with accurate, timely, clear and accessible information. They will also play a role in attracting investment in our region and regenerating their catchment areas.

We consider it a given that the rail industry will provide station facilities that meet passengers' requirements in terms of safety and accessibility, but also station amenities which should provide a minimum level of comfort.

In some instances, the Combined Authority will also be involved as a co-funder to accelerate the accessibility improvements to achieve the ambition of inclusive growth. Working with the industry, we will complete

planned accessibility improvements in Todmorden, Menston and Pontefract Monkhill and we will continue to secure further funding to accelerate accessibility enhancements elsewhere.

Looking beyond these basic amenities we have undertaken work to identify the relationship between stations and the area they serve, and therefore the facilities and infrastructure needed for passengers to best access stations. This considers the role of each station in West Yorkshire and their fit within the community and economy they serve.

This section summarises the identified station roles and relationships with the surrounding area, and next steps to develop a work programme which will upgrade stations to meet those standards.

Station Amenities

As gateways to the network, stations are an important part of the passenger experience. **All stations** in the region must provide a minimum standard to allow all passengers to access the network. This includes:

- Facilities and infrastructure that ensure a safe station for all;
- Step-free access to every platform to allow access for all;
- A comfortable waiting environment, with seating and shelters; and
- Appropriate information to inform passengers about the rail journey and the journey to and from the station.

In addition, many stations act as hubs for interchanging rail passengers, be it between trains or with bus (and in future mass transit) – these locations will require additional facilities to be effective interchanges. Stations serving longer-distance travel also require amenities for passengers arriving at the station early, and for other activities such as meeting friends and colleagues. This is particularly important for stations in **regional and sub-regional centres** - Leeds, Wakefield Westgate and Kirkgate, Huddersfield, Halifax and Bradford Interchange and Forster Square. Such amenities are likely to include upgraded waiting facilities, retail and refreshment outlets, toilets, and higher levels of provision of information and assistance.

Opportunities will be taken wherever they arise to enhance facilities at stations to improve the quality of journey and encourage use by passengers and others alike. However, those opportunities, and the funding available, are likely to be unique to each station and so must be considered on a case-by-case basis.

Station access

Each rail station will have its own unique requirements for connectivity with other transport modes. This will depend on the station's location relative to the area served and the nature of journeys being made to and from the station - such as longer or short distance, or for commuting, leisure or business travel. For example, stations in **regional/sub-regional centres** and **principal towns** have significant volumes of passengers both starting and finishing their rail journeys at the station. Passengers using the station as the start or end of their rail journey are likely to have different priorities in terms of their access travel. For example, someone ending their morning commute at a city station is unlikely to have access to their own bicycle, meaning they require alternative modes of transport for their onward journey. These stations are also located towards the centre of the urban areas they serve, making integration with bus network and other transport modes essential and generally relatively easy to achieve.

For local stations, there is likely to be a greater number of passengers travelling between the station and their home address, and using the station as the starting point for their outward rail journey. Because these stations are so unique, with their own local contexts, the best way for passengers to access the station is likely to be bespoke, reflecting:

- The station setting, including whether the station is in the centre or on the edge of a settlement and whether the surrounding area is high or low density; and
- The length of rail trips from the station, which affects whether other modes of transport complement or compete with rail travel.

What is clear is that across all stations a blend of different access types will be necessary to provide the best possible integration between the rail station, its complimentary access modes and the communities and economies they serve. The table overleaf summarises the range of access facilities that should be provided at different types of station, the station settings in which each mode is likely to be dominant, and therefore where interchange facilities are most needed. Interchange between public transport may however happen at stations of all types, and our prioritisation will reflect these roles and potential.

Table 7: Access requirements and gaps

Access mode	Station settings where access mode should be emphasised	Facilities needed to deliver good access	Typical gaps in provision
Walk access	**All stations.** Priority where stations centrally located within catchments and car ownership low E.g. Burley Park, Featherstone, Lockwood, Mytholmroyd, Frizinghall	• Information about walking routes, route signposting and maps • Walking infrastructure including good quality paths, road crossings, pedestrian areas, traffic calming and road safety measures • Personal security measures such as improved lighting, sightlines and CCTV	Walking infrastructure and wayfinding typically poor; some routes indirect; features (e.g. bridges, poor lighting / sightlines) create poor perception of safety
Cycle access	**All stations.** Priority where stations have dispersed catchment and rail trips are medium to long (i.e. cycling entire journey is not viable option) E.g. Pontefract Monkhill, Steeton and Silsden, Brighouse, Denby Dale	• Secure cycle parking including bike maintenance facilities/repair shop • Integration with cycling infrastructure e.g. cycle paths, route maps and signposting • Traffic calming and other road safety measures	Cycle racks common, but not other facilities (such as maintenance tools) Limited integration with main cycle routes and infrastructure
Bus access	Facilitated where bus and rail journeys can improve connectivity and/or where station can act as interchange between buses. Emphasis where stations serve (or could serve) a wide catchment, including major hub stations E.g. Keighley, Dewsbury, Castleford, Hebden Bridge	• Enhancing and re-routing services, and altering timetables, to integrate better with rail as is currently being covered in our integrated connectivity work • Multi-modal route maps, timetables and real-time information at stations and stops, signposting between rail and bus • Multi-modal integrated ticketing options • Designed interchange spaces including bus stops and waiting areas, and pedestrian routes between station and bus stops	Most stations have bus routes near stations, but physical integration between bus stop and station is often poor Bus and rail routes, timetables and fares are not typically integrated

Access mode	Station settings where access mode should be emphasised	Facilities needed to deliver good access	Typical gaps in provision
Car access	Drop-off and Blue Badge parking for all stations. General car parking prioritised only where space available to provide parking and stations are on the edge of their catchment and provide a park-and-ride function, or served by roads on the Key Route Network and where rail trips are typically long, with stations providing a 'parkway' function. E.g. New Pudsey, Thorpe Park	• Must include drop-off and pick-up locations (including for taxi and private hire vehicles) and Blue Badge parking spaces where possible • Where provided, should include signed car parks at or close to the station with priority spaces for certain groups (e.g. car sharers, parent and child) • Management of on-street parking within vicinity of the station • Provision of electric vehicle charging points whenever is appropriate.	Historic approach to station parking has been ad hoc and opportunity-based, resulting in inconsistent quantity of spaces and quality of provision Demand for car parking at stations has often exceeded the available spaces
Mobility Hubs	Best suited to "destination" stations which have a higher proportion or high numbers of inbound trips, or with a large nearby population that may use the facilities independently of rail travel. E.g. Hebden Bridge and Keighley	• Flexible bike/e-bike rentals, e-scooter schemes and car club provision	CA are currently working to develop proposals for mobility hubs which has a wider scope across the whole of WY.

Stations: Next steps

Our Station Access study included an initial gap analysis to identify stations where access provision currently falls short of the facilities identified in Table 7 above. As active travel provision is identified as a priority for all stations, our next steps will be to undertake a piece of work to identify opportunities for further improvements to improve walking and cycling access to stations across West Yorkshire. This will be developed as a pipeline of potential improvements for implementation when funding opportunities arise.

Finally, whenever funding opportunities arise, we will seek to develop business cases and secure funding to rectify the gaps identified in Table 7 and improve access to our stations.

Accessibility improvements

Equal access to the rail network is a right, not a luxury. The accessibility of rail stations varies considerably across West Yorkshire. 71% of stations in West Yorkshire do not have compliant step-free access, and many lack facilities that assist the user experience, such as toilets, drop-off/pick-up points and induction loops. Other existing facilities such as signage do not meet current standards. All of these exclude people from travelling by train to access jobs, education, leisure and health services. Improving accessibility and inclusivity benefits a broad range of existing/potential rail users including older and mobility impaired people, people with pushchairs and small children – while improving the experience for all travellers. The existing accessibility at stations on our network is illustrated on the map overleaf.

Figure 12: West Yorkshire rail station accessibility

Station accessibility

- ■ Step-free
- ▲ Step-free but not fully accessible
- ● Not step-free
- □ Committed scheme

Note: All stations along the Transpennine route could potentially be made step-free as part of the TRU programme.

(P) proposed new stations
(U) station under construction
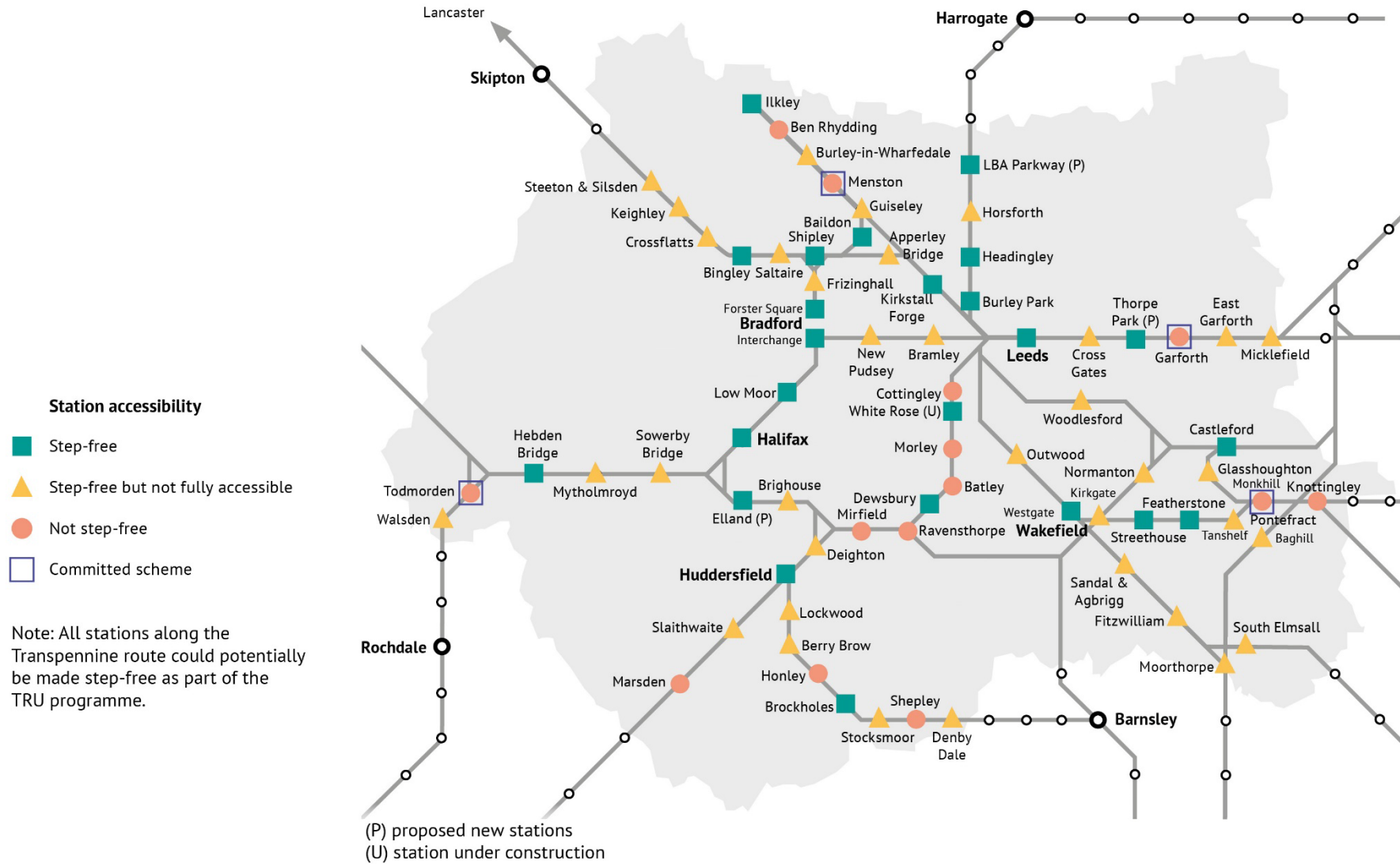
Government investment in recent years for improving accessibility has been limited, meaning slow delivery and limited impacts. The Government's Access for All Programme for accessibility improvements is available every five years. In recent years, West Yorkshire has only received funding to improve two stations in every five-year cycle. Rail franchises covering the North of England have only had modest annual budgets to deliver small-scale accessibility improvements. Given that 71% of West Yorkshire's stations do not have compliant step-free access, the current rate of investment would mean that it will take decades for all our rail network to be fully accessible. Combined Authority intervention therefore is needed to accelerate delivering accessibility improvements sooner, not only to provide benefits to passengers more quickly but also to maximise the opportunities available to lever in substantial government and industry investment.

We have completed accessibility audits in all West Yorkshire stations operated by Northern Rail. The Combined Authority is working closely with the rail industry to make use of the available funding to implement a programme of smaller accessibility schemes, such as compliant signage and toilets. In terms of larger-scale accessibility improvements, such as installing lifts, we are working closely with Northern to make joint submissions for Access for All funding and will provide match-funding whenever appropriate to maximise the opportunity for success.

On-train experience

The quality of trains serving our region's railway forms a large part of the overall passenger experience – optimising which is vital to achieving our decarbonisation objectives by encouraging more people to use the railways. Trains need to be an attractive place for passengers to spend time, whether it be for commuting, business travel, visiting friends and family, or going on holiday.

West Yorkshire's current fleet ranges from suburban units over 35 years old to brand-new local, inter-regional and long-distance trains. In some cases, trains are used in a way that does not suit their design – such as using high density urban trains for long-distance services or interurban trains on suburban work. This can compromise comfort and/or cause operating problems such as delays in boarding and alighting.

Table 8 provides a summary of the main train types operating in our region. Several are over 30 years old and reaching the end of their useful lives, and/or are diesel trains which will need to be replaced to meet challenging decarbonisation objectives (see Decarbonisation chapter). Some trains offer poor accessibility, cramped interiors, poor seating, a lack of air conditioning, or limited information provision. However, many of the trains operating in West Yorkshire have recently been refurbished, adding amenities such as power sockets, Wi-Fi and upgraded information systems, and we would like to see this high standard rolled out across the network.

150		2 and 3 car sets	Diesel	1984 - 87	75mph	●●●●● ●●●● 3+2	Y	Y	Ⓝ	Ⓝ	Text only	Local
158		2 and 3 car	Diesel	1989 - 92	90mph	●●●● ●●● 2+2	Y	Y	Y	Y	Text only	Local, inter-regional
170		3 car	Diesel	2004 - 05	100mph	●●●● ●●● 2+2	Y	Y	Y	Y	Text only	Local
185		3 car	Diesel	2005 - 06	100mph	●●●● ●●● 2+2	Y	Y	Y	Y	Digital screens	Local, inter-regional
195		2 and 3 car	Diesel	2017 - 20	100mph	●●●● ●●● 2+2	Y	Y	Y	Y	Digital screens	Local, inter-regional
220/221		4 and 5 car	Diesel	2000 - 01	125mph	●●●● ●●● 2+2	Y	Y	Y	Y	Text only	Long distance
331		3 and 4 car	Electric	2000 – 03	100mph	●●●● ●●● 2+2	Y	Y	Y	Y	Digital screens	Local
333		4 car	Electric	2015 -2018	100mph	●●●●● ●●●● 3+2	Y	Y	Ⓝ	Ⓝ	Text only	Local
800 series		5 and 9 car	Electric/ bi-mode	1988 - 92	125mph	●●●● ●●● 2+2	Y	Y	Y	Y	Text only	Inter-regional, long distance
91 + Mk4		9 car	Electric (loco)	2016 - 18	125mph	●●●● ●●● 2+2	Y	Y	Y	Y	Digital screens	Long distance
68 + Mk5a		5 car	Diesel (loco)	2016 - 18	100mph	●●●● ●●● 2+2	Y	Y	Y	Y	Digital screens	Inter-regional, long distance

To help achieve our objectives, we have identified a set of specific priorities for improving the on-train experience:

- Passenger experience – We will promote the development of a consistent high quality on-train experience for each type of journey, suited to the market being served; and
- Productivity benefits – We will push to maximise productive time on trains by providing adequate comfortable seating capacity and high-quality digital connectivity.

Our Rolling Stock Study defined a potential future fleet based on the types of services which are being run now and will be in future. These were categorised as local, inter-regional and long-distance, with unique requirements for each type as shown below. Critical quality factors that should be reflected in all rolling stock specification include:

- Full compliance with all accessibility requirements
- Air-conditioning
- High-performance mobile and wi-fi connectivity plus power sockets
- Informative and accurate real-time information screens
- Space for luggage reflecting the routes the train serves, including large items such as pushchairs, and cycles as appropriate
- A high standard of seating comfort, generally aligned with windows
- For local services, capacity to stand for short periods in reasonable comfort and safety
- For inter-regional and long-distance services, extra facilities such as first-class accommodation and catering (trolley and/or buffet)

Experience has shown that the "2+3" pattern of high-density seating for short-distance rolling stock brings few benefits in practice, with centre seats often not used while reducing usable standing space, and so it is not recommended for future fleets.

We will seek to influence future rolling stock procurement (including new-build and refurbishment) to ensure that these standards are reflected and that the quality of the passenger experience is paramount when specifications are set.

Expanding the Reach

There are parts of our region which are not currently well served by rail or other forms of public transport – including significant towns with no station. Our Rail Vision committed us to identifying ways to address these gaps, where additions could significantly increase the network's ability to achieve our objectives and spread the benefits of rail more widely across our region.

While rail is particularly effective at moving large numbers of people over longer distances than modes such as bus or active travel, our network at present serves a wide variety of travel needs, and this will certainly continue and increase, especially in the context of an integrated network. Rail will not always be the best solution to a connectivity need, or in some cases may not be practically deliverable. In these situations, alternatives such as upgraded bus services or mass transit will be developed – often in the context of multi-modal solutions such as designing bus and rail integration into our network planning to provide an attractive through journey opportunity. Our work has therefore considered the connectivity gaps identified in the round.

Where rail is the best-suited mode to addressing gaps in the transport network, we have considered measures to address these gaps. Some gaps could be filled by more 'standalone' measures, such as introducing new direct services or constructing new stations. Others could require more substantial intervention such as the construction of new lines and routes. This chapter identifies the schemes which we will be considering in further detail, following initial consultation and evidence gathering.

New services on the existing network

For many people in our region, longer-distance journeys will involve travelling to a hub station by a non-rail mode, rather than taking a direct service from their local station. This can make travel by public transport unattractive compared to travelling by car, and means that travel to employment and other opportunities is highly dependent on private cars.

New direct services could provide a step change in connectivity in these situations, alongside other opportunities based on high-quality interchange.

This is a particular challenge for the 'Five Towns' of Pontefract, Castleford, Knottingley, Normanton and Featherstone in the south-east of the region with their dispersed population. Here, rail connections to regional centres like Doncaster, York, or Bradford almost inevitably involve an interchange at Leeds, adding time, cost and complexity.

Travel is often dominated by private cars, causing problems with social exclusion, congestion and emissions, and limiting the potential for further development and employment growth. Our Five Towns Connectivity Study found that a relatively small number of interventions could address many of the connectivity gaps between these places (shown in Figure 13), where rail is a viable solution:

- Increasing the frequency of Sheffield-Pontefract-York services from 3 trains per day to 1 train an hour;
- Extending the hourly Huddersfield-Castleford service to York;
- Extending the existing Leeds-Knottingley service hourly to Goole;
- Regular services between the Five Towns area and Bradford; and
- Introducing a new, hourly Leeds-Pontefract-Doncaster service.

We will work with industry and local authority partners to support further business case development for these services, alongside any possible infrastructure enhancements and the additional rolling stock needed to deliver them.

Figure 13: Rail map of the Five Towns with December 2019 and future service levels

Key

	Route	Present service	Future service*
▬	Main Pontefract Lines regular services	Hourly each route	Twice-hourly each route
▬	Dearne Valley S&K (Baghill) line	Three per day	Hourly
▬	Goole line	1/2 per day	Hourly
▬	Askern line	2/3 per day	Hourly
▬	Huddersfield – Wakefield – Castleford line	No through service at present	Hourly

Service levels to meet medium-term priorities under this Rail Strategy

As set out earlier in this Strategy, we have also reviewed connectivity to longer-distance destinations outside West Yorkshire, identifying key flows where travel is currently dominated by private car journeys and where rail is not currently competitive with road journey times or costs, and certain flows where air travel is significant. Making rail more attractive for these journeys, both for business travel and for leisure and tourism, can contribute to decarbonisation and support economic growth. New direct services to South Wales, the South West of Scotland and the East and South East of England could make these journeys more appealing, driving modal shift and improving connections between these regions for business and leisure to grow the economy.

New stations

New stations can deliver a wide range of possible benefits. They improve connectivity for existing residents, enabling more people to access the public transport network and providing more options for sustainable travel. In some cases, they can also be a catalyst for economic growth and new development, unlocking further investment and providing an anchor for development in an area.

Case Study: Kirkstall Forge station opened in 2016 as part of the first phase of a major mixed-use development, which will eventually include 1,050 houses, 300,000 sq ft of office space and 100,000 sq ft of retail, leisure and community space. The station is a key part of the project, with high-quality connectivity to Leeds city centre enabling a higher quality and density of development than would otherwise have been possible.

We have successfully delivered several new station projects in recent years, with the delivery of another four proposals currently in progress - at Elland, Leeds Bradford Airport Parkway, Thorpe Park and White Rose. These stations will connect communities which have been cut off from the network, support the decarbonisation of journeys by increasing public transport's modal share, and support new and existing enable development. **We will prioritise the delivery of these new stations, while continuing to assess other potential station sites where there could be a potential case for investment**.

While new rail stations improve access to the rail network and support growth and development, they may not be the right solution for every location. On a congested rail network, a new rail station can be detrimental by adding rail congestion and slowing down existing journeys. This means potential new stations need to be carefully assessed to ensure they will benefit the network as a whole, as well as benefitting local communities and supporting local development.

We carried out a study assessing potential new station sites in West Yorkshire, with the aim of increasing access to rail services and supporting wider sustainable development opportunities. This work reviewed and updated a previous study carried out in 2014 to identify where the findings may have changed and evaluate additional sites. **The study confirmed that in almost all locations where there is a clear case for a new station and one could be delivered reasonably easily, this has either already happened, or (as with Elland, White Rose, Thorpe Park and Leeds-Bradford Airport Parkway) a scheme is already in progress. Certain additional sites were however identified as having potential for stations, but in all cases hurdles, such as operating or construction issues, were identified as being significant at present. Nonetheless, the following are potential candidates for more detailed examination:**

- Hemsworth;
- Horsforth Vale;
- Horsforth Woodside;
- Golcar; and
- Middleton.

New routes

Some gaps on the network, such as major towns with no rail station, cannot be addressed without constructing entirely new infrastructure, particularly where lines have been closed or have never existed.

While new rail connectivity can have transformative economic and social benefits, there are substantial costs to delivering reinstated or new-build

rail schemes. Capital costs are high, and most services will also require ongoing funding to cover future operational costs. New routes are often concentrated in more densely populated areas, which can mean there is limited land available for construction. Capacity constraints such as around major stations can also constrain the ability to accommodate new services without further additional investment which in many cases may be disproportionate to the overall scheme. These issues can make it challenging to develop a business case acceptable to funders.

Recognising these challenges, we have carried out a sifting exercise to identify potential schemes that merit more detailed examination. The following schemes have been identified, subject to availability of development funding:

- Reinstating services on a branch line between Menston and Otley, running services through to Leeds and/or Bradford;
- Reinstating the Crigglestone Chord to link the Huddersfield-Wakefield line to the Wakefield-Barnsley-Sheffield line, which would enable faster journeys from Bradford, Huddersfield, and Halifax through to Barnsley and Sheffield;
- Reinstating the Spen Valley route south of Bradford, linking through to Wakefield, which in conjunction with the chord at Crigglestone could also allow greatly improved services from Bradford to Sheffield and beyond as well as addressing an area of major connectivity disadvantage;
- Reinstating the line between Penistone and Deepcar, to join the existing freight route which the South Yorkshire MCA is proposing to upgrade for passenger use, which could enable additional (and faster) services to run from Huddersfield through to Sheffield; and
- Introducing a regular passenger shuttle on the existing heritage railway line from Keighley to Oxenhope, to connect to existing services at Keighley.

Further examination of these schemes will continue to be carried out in parallel with the development of our mass transit corridors, with any

synergies, complementarity or possible conflicts considered closely – for example, ensuring that a future solution for the Spen Valley reflects both local and longer-distance connectivity needs.

The above schemes are in addition to the **Skipton-Colne reinstatement** scheme, a scheme located outside West Yorkshire but with clear benefits to our region. This scheme has been the subject of a significant amount of work by a variety of bodies, meaning that a strong body of evidence already exists. As such, we have already confirmed our support for this important strategic reinstatement to proceed as a priority.

We will also support the South Yorkshire MCA in their proposals to reinstate the line between **Wakefield and Barnsley via Cudworth**, while working to better understand the benefits within the West Yorkshire area.

Expanding the reach of the rail network is an ongoing aspiration. We will continue to identify places where connectivity could be improved, looking across rail and other modes, particularly as other proposals develop such as the IRP study on connectivity between Leeds and the East Coast Main Line. The longer-term vision for Bradford's connectivity is also subject to further work.

In the meantime, we will ensure that - where relevant - any historic rail alignments are protected from development until the relevant reinstatement schemes have been considered further.

Freight

Introduction

Improving provision for rail freight in West Yorkshire aligns strongly with our priorities. The Government placed significant emphasis on the role of rail freight in its William-Shapps Plan for Rail. Locally, our Rail Vision provides strategic arguments and several areas of priority for increasing the levels of freight carried by rail in and through West Yorkshire, and a detailed Rail Freight Study has been produced to develop this evidence further.

Rail freight is highly energy- and carbon-efficient, with the ability to be zero-carbon under electric haulage; it also produces far lower levels of other forms of pollution than road freight and can contribute to substantial easing of road congestion.

The Rail Vision sets out key objectives and aspirations for improving rail freight in the West Yorkshire area. At the heart of the Rail Vision is an aspiration to grow the role of rail freight to support our wider objectives, in two main ways:

- By enabling and attracting modal shift from road haulage, thereby supporting decarbonisation and other environmental and social impacts - as set out in our Decarbonisation Pathways which require a minimum of 10% of current HGV movements to be shifted to rail and a 150% increase in rail freight tonne km, representing a significant increase in the distance and volume of freight moved by rail; and
- By providing a better overall logistics solution that allows business in West Yorkshire to expand their markets in a sustainable way, and in doing so supporting clean economic growth and productivity.

Our Rail Vision identifies the need to improve connectivity (in terms of both road-rail freight interchange facilities and the availability of direct routes), capacity and capability for rail freight to achieve these objectives,

and to do so while meeting the needs of both freight and passengers. It specifically identifies the need for a strategy with a clear focus on the critical operational factors which need addressing to enable rail freight growth.

The Rail Vision also acknowledges the key role that major projects play in expanding the role of rail freight, including the TransPennine Route Upgrade and the previously planned HS2 and Northern Powerhouse Rail projects. We will continue to make the case for these or subsequently defined projects to create an environment that allows rail freight to prosper.

This chapter summarises the evidence from our detailed Rail Freight Study, setting out the role of rail freight in supporting the West Yorkshire and wider UK economy. It also sets out the next steps for us and our local authority partners to achieve the Rail Vision for freight.

What is the evidence?

There is a vibrant freight market within West Yorkshire. The wider Yorkshire & Humberside region - of which West Yorkshire is part - is home to 5.5 million people and 8.5% of the UK population, but generates around 11% of the UK's total road freight traffic (157m tonnes), and has 15% of the total warehousing floor space in England.

The disproportionately high shares of road freight traffic and warehousing floor space are related to the presence of the Humber ports and associated trade flows, but also reflect the strategic importance of freight and logistics to our region. Freight is particularly important to the area where the M1, M62 and A1 converge, in the Five Towns. Table 9 below shows the significance of employment in the freight generating industries of wholesale and transport/storage in the Five Towns area.

Table 9: Jobs by sector

Industry	% of jobs in Five Towns	% of jobs in Leeds	% of jobs in York	% of jobs in Doncaster
Wholesale	9%	7%	2%	4%
Transport & storage (incl. postal)	11%	7%	5%	8%

Freight terminology:

- **Tonnes lifted** – the weight of goods moved (measured in *tonnes*)
- **Tonnes moved** – a function of the weight of goods moved *and* the distance over which they are moved (measured in *tonne-kilometres*)

Figure 14 shows the relative volume of road freight traffic **_lifted_** to, from or within the region. Around 219 million tonnes are lifted in total, with 105 million tonnes moving within the Yorkshire and Humber region. This is the tonnes moved by GB-registered goods vehicles. This means it is a conservative view of overall road freight traffic, as it excludes foreign-registered goods vehicles.

Figure 15 shows the tonne-km of road freight traffic **_moved_** to, from and within the region - which takes into account both the weight of goods moved and the distance they were moved. A total of 27 billion tonne-km of road freight traffic was moved, but a much smaller volume was moved *within* the region, at 6.9 billion tonne-km. This is because tonne-km reflects the distance travelled, with trips within the region typically being shorter distance distribution from warehouses to retail and end-user premises.

Figure 14: Tonnes lifted by road to/from/within Yorkshire & Humberside 2019 (source: DfT)

Scotland
6M TONNES

North West
27M TONNES

Northern Ireland
2M TONNES

Wales
4M TONNES

West Midlands
14M TONNES

Yorkshire and Humberside
105 MILLION TONNES

North East
14M TONNES

East Midlands
25M TONNES

South West
5M TONNES

London and South East
11M TONNES

East
11M TONNES
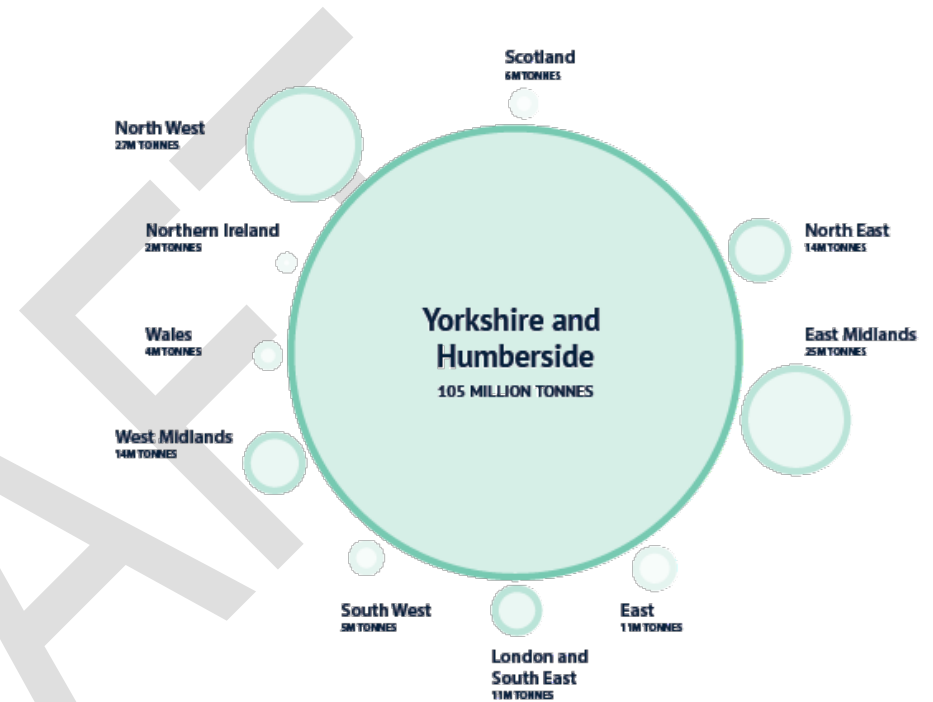
Figure 15: Tonnes moved by road to/from/within Yorkshire & Humberside 2019 (source: DfT)
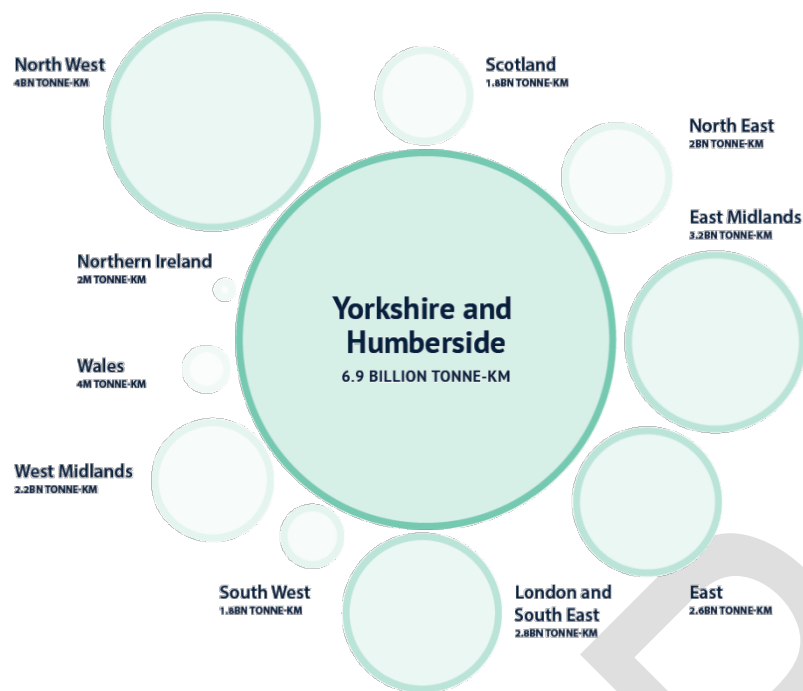
This analysis illustrates that, with carbon emissions generally proportionate to the tonnes *moved*, the greatest short-term gains in decarbonisation terms are likely to be from targeting longer-distance trunk hub-to-hub HGV hauls. In many cases these may also be the flows most suited to modal shift to rail.

However, it also underlines the clear opportunity and need for rail to find innovative ways to serve the 'first and last mile' (often a few kilometres in practice), given that there will in most cases be a need for rail-connected hubs/warehousing to be linked to the ultimate destination of freight by sustainable road-based links – representing both a challenge and an opportunity.

The market for rail freight

At present, both in our region and nationally, rail freight is overwhelmingly of two principal types:

- Bulk goods, carried in full trainloads – these include fuels (oil products, biomass, nuclear), construction materials (aggregates, cement), steel, new road vehicles, domestic refuse; and
- Intermodal containers – either regular services available to a variety of shippers (such as from seaports to inland terminals), or in some cases for a single customer (such as flows of containerised food and drink for supermarkets).

Beyond these, much smaller volumes of other commodities travel by rail such as mail, parcels and premium low-volume goods. Since the 1990s, the railway has not generally carried consignments less than a trainload which are not containerised – in contrast to many other European countries where wagonload freight continues.

Rail freight in Britain is run by private operators on a commercial basis with no direct subsidy, and, in general, competition with road haulage is intense and cost-driven.

In other markets, such as lower-volume premium logistics (such as high-priority parcels), there are opportunities for innovation such as using spare capacity on existing passenger trains to move cage-load freight, or using converted passenger units for caged or palletised goods. However, doing so requires investment in freight handling capability at our current stations to allow goods to be handled and transhipped. Several studies and trials are currently being undertaken to prove this concept. We will monitor the development of these trials and work with the industry to identify these opportunities in West Yorkshire.

Because very few freight origins have their own rail connections (other than certain large industrial plants, quarries, oil terminals and similar sites), transhipment is generally necessary for most types of freight other than traditional bulk-commodity flows. This incurs a time and cost penalty

West Yorkshire Combined Authority – Rail Strategy

and means that without subsidy to encourage modal shift, there tends to be a threshold below which rail freight is not economical. This threshold varies depending on local conditions, but in Britain is usually around 100 miles for intermodal and similar flows – though there is evidence that this figure is falling as rail becomes more competitive due to increases in the cost of fuel and shortages of HGV drivers.

The evidence also shows that there is a significant volume of longer-distance freight movements to and from the region. This is an area which more naturally lends itself to traditional rail freight markets. Given the major challenges associated with decarbonising HGVs themselves, modal shift in these markets is a significant opportunity to decarbonise freight.

However, there are constraints to expanding the role of rail freight for this market, including the capacity and capability of the rail network to handle more freight trains and connect to the places freight needs to move. A relatively modest number of additional paths for freight trains across the national core mainline network would be enough to achieve a significant modal shift from HGVs, but certain key sections will need much more capacity and improvements to loading gauge clearance – e.g. the TransPennine rail line via Huddersfield. The number and location of rail freight terminals within the region may also act as a barrier, in terms of overall terminal capacity and being suitably located to serve the end customer.

In addition to freight movements to and from West Yorkshire, there are significant current and potential freight movements *through* our region. These include:

- North-South movements between the Midlands or Southern England (notably the South Coast ports) and the North East and Scotland; and
- East-West movements, including fuel for the energy industry and the potential for intermodal container traffic from Liverpool and the North East ports.

While there is a major opportunity for increasing rail freight in these corridors, network capacity and capability currently constrain growth. This is particularly true for East-West movements, where there is highly constrained capacity on the TransPennine routes and through Manchester. In addition, on this corridor the restricted loading gauge (the height and width clearance under bridges and similar structures) limits the movement of intermodal containers. There are also significant network capacity constraints to North-South movements. Though these constraints are largely found outside West Yorkshire, we will support work with the industry to resolve them.

More generally, there are a range of external factors which constrain opportunities for rail freight, including national policy, tax and fuel subsidies and decisions to invest in highway infrastructure. We will aim to influence national government to create an environment that is positive for rail freight.

Electrification is a clear benefit for freight as well as passengers, not only decarbonising it and enabling higher-performing trains that are easier to slot between passenger services, but also reducing operating costs and so making rail freight more cost-competitive against road.

Working with local authority partners and rail industry, the Freight Study has considered a range of possible solutions to these challenges.

What are the recommendations?

Our Freight Study sets out the following recommended actions to address the identified constraints, working with the freight industry. It should be emphasised that the requirements of the rail freight sector can vary considerably according to the commodity being carried and the consignment size: what is relevant for low-volume premium parcels logistics travelling at 125mph is quite different from that required by block trains of aggregates limited to 60mph; revitalising the wagonload market would require yet other considerations. Equally, the requirements of the markets for intermodal containers differ from those of biomass for

electricity generation or refuse for recycling. Therefore the following recommendations will form the framework of our future freight work, but the interventions that follow will reflect these differing needs.

Development of strategic freight interchange opportunities: As part of the Freight Study, we worked with Local Authority partners to undertake a detailed freight interchange site assessment. This suggested a wide availability of opportunities for strategic freight interchanges in our region. There are notably more sites to the east of our region, reflecting both the better topographical conditions, the existing distribution-related infrastructure, and the good highway links via the A1, M1 and M62. However, the presence of opportunities is set against a backdrop of development pressures. We will need to work with the freight industry and our local authority partners to establish and develop the long-term opportunities to promote major rail-served sites, including safeguarding potential land, similar to that already existing at Wakefield Europort.

Allocation of capacity: A critical challenge for expanding rail freight is providing sufficient capacity, capability and flexibility to accommodate new services. As an immediate and ongoing action, we will encourage and support the industry to consider ways to improve the allocation of existing capacity across the regional rail network, in a balanced manner that avoids "trading-off" growth in rail freight with the improved passenger services our region also needs.

Supporting an increase in capacity and capability: There is a critical need to provide additional infrastructure to support rail freight growth. We will continue to support the needs of the rail freight industry in the context of major schemes across the network, including the case for the TransPennine Route Upgrade to help increase network capacity and capability across West Yorkshire, and expand capacity improvements out onto other routes to help spread demand across the network. Capability (such as loading gauge and axle loads) must also keep step with industry's needs. This will help to unlock latent demand for East-West rail freight, alongside enhancements to the Calder Valley route and the

potential Skipton-Colne reopening. A combination of the TransPennine Route upgrade investment and opportunities for additional road-rail freight interchanges could lead to the creation of a new rail freight corridor, on the Ravensthorpe – Wakefield – Castleford route.

Developing evidence for investment: We will work with partners to develop the evidence for interventions to unlock freight opportunities on the rail network. This assessment will extend beyond the rail corridors themselves to identify opportunities for unlocking major lineside commercial development which could then leverage additional investment. It will also work alongside the Local Plan process of site allocation and protection of opportunity sites.

Dialogue with industry partners: To achieve this strategy, we will work proactively with our local authority and industry partners. We will commit to building on recent consultation with these stakeholders to develop a Freight Forum for the region. This will support ongoing dialogue across partners to realise future rail freight opportunities by addressing barriers and adapting local transport investment programmes, as well as informing the Local Plan development process. It can also provide input to a more detailed multi-modal freight strategy approach in West Yorkshire, alongside local authority partners, as part of work on LTP4. This will also include development of further responses on the 'first and last mile', decarbonisation of road haulage, and promoting the use of inland waterways for freight.

Pan-Northern connections: We will continue to support the role of TfN in developing an action plan for the Freight and Logistics Strategy agreed in 2022. TfN has an important role in co-ordinating activity across its partner authorities on freight matters, given the highly inter-connected nature of the freight market and networks. This extends to supporting and maintain a North of England evidence base, and access to national freight forecasts.

Working towards supportive national policy: We will continue to support the rail freight industry in seeking to influence national policy in its

favour, such as steps to redress the competitive balance against road freight and lower the "threshold distance" at which rail becomes competitive. This will include support for innovations designed to unlock new markets for rail freight, such as pilot projects to provide facilities for premium goods/ parcels at passenger stations.

Decarbonisation

Introduction

Transport accounted for 40% of all carbon emissions in West Yorkshire in 2019. Reducing these emissions will be a key and critical component of achieving net-zero.

Our West Yorkshire Carbon Emissions Reduction Pathways report set out scenarios to test the level of policy, infrastructure and behavioural change required to achieve net-zero. Modal shift to rail is a crucial part of reducing transport emissions across all scenarios, alongside overall demand reduction. The most ambitious scenario, reducing emissions from transport by 83%, requires rail passenger-kilometres to increase by 60% by 2038, in addition to rail demand growth forecast to arise from other changes: this would require a substantial increase in rail capacity.

Even this scenario leaves us short of achieving net-zero – so even more modal shift may be required.

Our Rail Vision set tackling the climate emergency as a primary objective for rail in our region. Rail has two key roles to play in decarbonising transport: encouraging modal shift from private car journeys (and, where applicable, air travel), and decarbonising rail operations through electrification.

Many of the projects and plans set out in this Strategy aim to enable modal shift by making rail a more attractive and available option for a larger proportion of journeys within and outside the region. Therefore, the previous sections of this strategy, such as those on connectivity, integration, capacity and the quality of the passenger travel experience across trains, stations and network access, are highly material to decarbonisation. Improving social inclusion and quality of life will see people become more mobile and result in additional journeys, which need to be made through sustainable means, alongside shifting freight from roads to rail.

Additional rail capacity will be needed to accommodate this growth, as set out in the Capacity chapter of this Strategy, and rail will need to be made more attractive by providing a higher-quality, more consistent and more accessible service through our plans for services, stations and rolling stock. Delivering new stations and routes will make rail a potential option for journeys where there is currently no real alternative to driving, as will better integration between rail and other modes such as buses, active travel and the future mass transit network.

Rail is already a low-carbon mode of transport. However, achieving substantial carbon reductions and delivering committed emissions targets will require further additional action. This includes phasing out diesel power, with the national Transport Decarbonisation Strategy setting an ambition to phase out all diesel-only trains by 2040. This is a huge challenge in our region, where less than a third of the network is currently electrified. The Rail Vision outlined our plans for a rolling programme of electrification across all routes in our region.

While electrification is a key contributor to decarbonisation – and electric trains can be practically zero-carbon when power is drawn from renewables – there are other important benefits from electrification which are valuable in their own right. Electric trains are generally faster and more reliable, with reduced maintenance liability helping drive the passenger benefits needed to secure modal shift. Electrification also brings wider societal and health benefits, through improvements to local air quality and noise pollution. These challenges are particularly pertinent for routes which travel through dense, highly populated parts of our region. There are acute air quality issues across our network, particularly inside Leeds station.

The upfront capital investment in electrification helps to drive longer term industry cost savings. Electric rolling stock is typically considerably cheaper to purchase and/or lease - electric traction is generally cheaper than diesel or bi-modal trains, and maintenance is simpler too. We also expect that the upfront cost of electrification will become cheaper as other

electrification programmes, including the TransPennine Route Upgrade, identify more efficient ways of working. We are committed to supporting the industry in making the case for electrification across the network.

Battery, and possibly hydrogen, power could be valuable as interim solutions to deliver faster decarbonisation, including through hybrid solutions. However, the limited range and performance of such trains is likely to suit only low density, low-traffic, low-speed, and shorter-distance passenger routes.

Existing proposals and projects will deliver electrification between York and Manchester via Huddersfield as part of the TransPennine Route Upgrade, as well as from Leeds to Bradford Interchange, which was introduced in the IRP. It is crucial that these happen and are not further delayed. However, this leaves clear gaps in electrification which limit the benefits delivered; for example, all services between Leeds and Bradford currently continue down the non-electrified Calder Valley Line and are operated by diesel trains, meaning that no benefits will be delivered between Leeds and Bradford without changes to rail services and/or rolling stock. There is a strong case for filling these gaps to deliver benefits more quickly.

Priorities for Electrification

We have carried out analysis to understand the routes which would benefit the most from electrification – focused on the decarbonisation impact, but also reflecting operational and performance benefits. This research identified the volume of journeys each scheme would be able to decarbonise. This depends on the service pattern and the extent to which an individual route or section also requires use of un-electrified track, both of which affect the number of diesel vehicles that could be taken out of service.

Another key strategic consideration is the existing rolling stock on each line. A substantial proportion of the diesel rolling stock used on services in our region is likely to require replacement before 2040. Electrifying routes

which currently use the largest numbers of diesel trains means that more trains are replaced. As a result, the oldest diesel trains can be retired and newer diesel and bi-mode rolling stock can be cascaded down to other routes, improving the quality of a larger number of journeys. Electrifying routes in advance of rolling stock life-expiry removes the need to purchase diesel units which will only be used for a fraction of their expected life, or bi-mode diesel-electric units which are heavy, complex and expensive.

While our analysis has primarily been based on electrifying passenger services, moving a larger proportion of freight by rail is also critical to decarbonisation, with a 150% increase required for our most ambitious carbon reduction scenario. At present, the vast majority of rail freight is transported using diesel locomotives; emissions per tonne are substantially lower than road transport, but this can still be reduced further. It can be more challenging to decarbonise freight services fully than passenger services, as they often cover long distances across the country with several non-electrified sections of track. However, electrifying routes within the West Yorkshire area would enable some freight services to be operated with electric or bi-mode locomotives, reducing the unit cost of rail freight and increasing the benefits of modal shift, and there are also infill schemes (not necessarily within our region) which could bridge electrification gaps and enable flows to switch to pure electric.

On the basis of this assessment, the priority routes for electrification, based on current and planned passenger services, have been divided into three tiers.

Electrification phasing – passenger network

- —— Existing
- ⋯⋯ Planned
- —— Tier 1
- —— Tier 2
- —— Tier 3

Skipton, Morecambe, and Carlisle ←

BRADFORD

Wharfedale line

Airedale line

Harrogate and York ↗

Harrogate Line

✈ Airport

LEEDS

Keighley & Worth Valley Railway

Airedale line

Bradford

Leeds

East of Leeds to York/Selby line

Selby, York and Hull →

Calder Valley line

Burnley, Preston, and Blackpool ←

TransPennine West line

Five Towns line

York ↑

Calder Valley line

West Riding line

Goole and Hull →

Halifax

CALDERDALE

Greater Manchester and Merseyside ↙

Wakefield

WAKEFIELD

Huddersfield

West Riding line

Dearne Valley line

TransPennine West line

Hallam line

Penistone line

KIRKLEES

Barnsley and Sheffield ↓

Sheffield and West Midlands ↓

Doncaster and London →

Greater Manchester and Merseyside ↙

Barnsley and Sheffield ↓

Tier 1 reflects the highest-priority routes based on our assessment of the infrastructure, rolling stock, operational benefits, and feasibility of electrification. These routes would fill crucial gaps and enable the rapid delivery of benefits:

- The Harrogate Line: Many neighbouring routes are electrified, so electrification would enable more flexibility of local service patterns, and high numbers of diesel vehicles would be removed.
- The Calder Valley Line: As one of the busiest routes in the region, high numbers of diesel vehicles could be removed, and full electrification would maximise the benefits of Leeds-Bradford electrification; there is also significant freight traffic.
- Wakefield Westgate/Dearne Valley Line: This would fill the gap from West Yorkshire to the planned Midland Main Line electrification at Sheffield, and enable improvements to the service pattern on the route, which could be considered in the options for bringing high speed rail to Leeds as part of the IRP studies.

Tier 2 routes could also deliver substantial benefits, but less frequent services and shorter trains (currently) mean these would likely follow after Tier 1. In some cases, the nature of the route may mean a wider scope of initial investment is needed to realise the benefit. These schemes would therefore be expected to follow after Tier 1:

- The Pontefract Lines covering both routes between Leeds and Knottingley;
- The Hallam Line between Leeds, Barnsley and Sheffield; and
- East of Leeds to York/Selby between Micklefield and Hull, which is mostly outside the region but has a high potential to remove diesel vehicles from the network in West Yorkshire.

After Tiers 1 and 2 are completed, 80% of route-kilometres in the region will be electrified.

Tier 3 encompasses all remaining routes in the West Yorkshire area: the Penistone, Huddersfield-Castleford, and Castleford-York lines, plus the

Dearne Valley (S&K) line section from Moorthorpe north to York via Pontefract. In these cases, the direct benefits of electrification, from the standpoint of passenger services, would be smaller, generally due to lower demand and service frequency.

However, the relative benefits of electrifying these lines would increase as the programme continues. Electrification will become easier where the main hub stations are already electrified. Electrifying the Tier 3 routes will also remove the need to retain small and isolated fleets of diesel (or other self-powered / hybrid) rolling stock, bringing further operational and cost benefits by improving the overall efficiency of the region's rolling stock operation. This could also help facilitate the delivery of improved rolling stock for passengers.

Similarly, more widespread electrification will help make electric traction more feasible for longer distance **freight** services by reducing the number of 'diesel islands' on the network where diesel traction is required and unlocking long sections of the freight network for full electric operation. More detailed consideration of freight network benefits would be expected, in particular, to highlight the case for infill electrification of Thornhill LNW Junction (near Ravensthorpe) through Wakefield and Castleford to Church Fenton, and also the route from Stourton and Wakefield freight terminals to Hare Park Junction (south of Wakefield) where the West Riding line towards Doncaster is joined – as well as ensuring electrified access to the future strategic rail freight interchange sites discussed in the previous section of this strategy.

We will push for these priority schemes to be delivered as part of a national electrification strategy, and work with industry partners to build the evidence and business cases required to deliver them.

Implementation

Introduction

This chapter presents how we will deliver our Strategy, through our role in the industry and the delivery mechanisms available to us. To provide an indication of the timescales of the Strategy, we have categorised each of the actions and next steps in the Strategy, based on the status of each scheme or intervention.

Our role

Delivery of the Rail Strategy will require a strong and collaborative relationship with our rail industry partners. We will consolidate and develop these partnerships through:

- Co-investing in rail facilities and services;
- Local service integration;
- Co-ordination of investment planning activity;
- Integrated strategy-making; and
- Holding the railway to account on behalf of passengers.

Although we do not have direct control over some aspects of the network such as fares / ticketing, station management and trains - as these are owned or operated by Network Rail and Train Operating Companies - we can work in partnership with the industry to prioritise and deliver investment, as well as influencing how services are specified via Transport for the North.

We have the ambition to establish a formal working relationship with the new industry body, Great British Railways (GBR). We hope to work with GBR to deliver improvements across our rail network and ensure that passengers in West Yorkshire feel the benefits that industry reform can offer. We have established a Strategic Rail Partnership with industry partners as a forerunner for the strong and effective local partnership with Great British Railways that the Williams-Shapps proposals promise.

Our Rail Strategy and the wider Connectivity Infrastructure Plan align strongly with the Williams-Shapps Plan for Rail. The plans share similar objectives, namely a commitment to growing, not shrinking, the railway network at a time of uncertainty in the industry and wider economy. We look forward to maximising the opportunities that industry reform presents for our rail network, particularly any future relationship that is established with Great British Railways.

The majority of the rail investment is currently dependent on the government funding, our ambition is to have increased local control over investment in our rail network. The Levelling Up White Paper points towards further devolution of powers and funding on infrastructure spending. We will closely monitor the Government's policy position on rail spending and work proactively to make the most of any opportunities for devolved powers to invest in our rail network.

We will continue to work closely with our local authority partners throughout West Yorkshire, with neighbouring authorities, and with Transport for the North, on matters where co-operation across a wider geography is required.

The mechanisms and opportunities for us to specify, influence and procure transport provision in our region are evolving, across all modes and for rail particularly. This implementation chapter is based on the structure of the industry as it is today. However, this may not always be the case, and while the approaches set out here are likely to remain valid at least in principle, the way in which we work may change.

Skills and the Strategy

The transport agenda is inextricably linked with skills and employment. Large-scale infrastructure projects included in our Rail Strategy will require access to skills and labour which are already in high demand and short supply in our region. At the same time, they could provide opportunities for training and employment to up-skill the labour force of West Yorkshire.

The Future Ready Skills Commission, made up of leading experts from education, policy think-tanks and employers, set out its blueprint for a post-16 skills system. One of the nine recommendations of the Commission was that large-scale public infrastructure projects designed to level-up areas should include an additional skills premium of up to 5% of the total budget of the project to maximise their economic potential.

The additional money raised through a skills premium and devolved to our region would fund future workforce needs, as well as support social mobility through better connections between local skills strategies and investment. This would ensure that projects deliver their full social and economic potential and deliver benefits to our communities. We urge the Government to include this skills premium as part of the funding for implementing our Rail Strategy.

Strategy implementation

The next steps identified below have been categorised in terms of the next stage of work that needs to be undertaken and the timescale for delivery. The stages of work can be summarised as follows:

- Investigations and feasibility: Longer-term sifting and feasibility work to identify the best solution to a problem or gap on the rail network and begin understanding the feasibility of delivery.
- Development: Development of Business Cases and establishment of value-for-money for schemes that have been specified to some level of detail but are not yet ready for delivery.
- Delivery: Schemes that should be delivered, at least partially, in the next five years.

The identified timescales for delivery are summarised as follows:

- Short term: where stages of work are expected to be undertaken over the next 5 years.
- Medium term: where stages of work are expected to be undertaken in around 5-10 years' time.

- Long term: where stages of work are expected to be undertaken beyond 10 years' time.

There are also several possible roles the Combined Authority can undertake in delivering these actions. The role we take depends on the sources of funding – whether it is locally funded or funded by central Government. For schemes that are funded by central Government, we will take on an influencing role, providing local information and evidence to support the case for investment.

The table below presents how we will deliver our Strategy through the funding and the delivery mechanisms available to us. It also provides an indication of the timescales of specific actions and next steps.

Table 10: Implementation Plan - next steps

Scheme or priority	Timeframe	Stage of development	Local funding	Central government funding
Reinstate services withdrawn during Covid wherever appropriate.	Short	Delivery		●
Complete gateway schemes at five of our biggest stations (Leeds, Bradford Forster Square and Interchange, Huddersfield, and Halifax).	Short	Development / delivery	●	●
Complete major accessibility improvements at Menston, Garforth, Pontefract Monkhill and Todmorden and secure funding for further major accessibility improvements.	Short	Delivery / development	●	●
Deliver minor station accessibility improvements across the region.	Short	Delivery	●	●
Deliver car park extensions as appropriate to be identified in our emerging park and ride study.	Short	Delivery	●	●
Identify and reach agreement on a cross-industry solution for capacity and capability at Leeds station.	Short	Development	●	●
Provide evidence to support service improvements such as Five Towns, Brighouse, Penistone line and South of Wakefield to support economic growth.	Short / medium	Feasibility		●

Scheme or priority	Timeframe	Stage of development	Local funding	Central government funding
Support investment to provide extra track and on-train capacity across the network.	Short / medium	Feasibility / development		●
Identify further gaps in station accessibility and develop a pipeline of improvements with a key focus on cycling and walking access.	Short / medium	Feasibility / development	●	●
Deliver new rail stations at Elland, Thorpe Park, White Rose, and Leeds Bradford Airport.	Short / medium	Development / delivery	●	●
Support the implementation of Transpennine Route Upgrade (TRU), with a focus on maximising benefits and minimising the impacts of disruption. Specifically support implementation of increased freight capacity and capability on the Transpennine route.	Short / medium	Development / delivery	●	●
Develop evidence and supporting initiatives in relation to local freight interchange facilities and rail network capability and establish a Freight Forum.	Short / medium	Feasibility		●
Develop the case for electrification on our priority Tier 1 routes (Harrogate, Calder Valley and Wakefield Westgate/Sheffield lines) including rolling stock improvements.	Medium / long	Feasibility		●
Support the implementation of all investment identified in the Integrated Rail Plan including Leeds-Bradford electrification and East Coast Mainline upgrades.	Medium / long	Development		●
Carry out further works on identified locations and routes which currently have no access to the rail network.	Medium / long	Feasibility	●	●
Fill the strategic rail connectivity gaps including Bradford-Manchester, Leeds-Sheffield, and between West Yorkshire and Birmingham and the East Midlands. Bring HS2 services to Leeds.	Medium / long	Feasibility		●
Provide inputs and support to whole-industry smart ticketing programmes.	Medium / long	Feasibility		●

Delivery opportunities

To deliver the Strategy we will need to be dynamic and alive to the new delivery and funding mechanisms available to use as the rail industry is reformed. This section shows some of the delivery and funding opportunities that are currently available and may become available in the future.

Industry forums

Wherever appropriate possible we will engage with members of the rail industry to understand their different perspectives on the region's rail priorities, and take advantage of different opportunities to deliver improvements for passenger and freight services. We have established a Strategic Rail Partnership with industry partners and will continue to engage through this route, with an emphasis on doing business with the railway and securing accountability on behalf of passengers and business. For example, we recently engaged with local partner authorities, rail freight groups, and end-user customers to inform our Freight Study. We will continue this direct engagement with all stakeholders in the industry where possible.

Rail Network Enhancements Pipeline (RNEP)

RNEP is the principal funding opportunity for improvements to physical rail infrastructure, including track, signalling. It is managed by the Department for Transport. Previous schemes delivered through RNEP include electrification and capacity improvements, and we expect to explore RNEP as a possible funding opportunity for similar schemes in West Yorkshire in the future. We will monitor if, and how, the role of RNEP changes as industry reform is delivered.

Service operating agreements

Train services across West Yorkshire, and the wider network, are contracted to operators through operating agreements with Department

for Transport and in some cases Rail North Partnership. In the future, the nature of these agreements and the roles and responsibilities set out in them will change as the industry moves towards Passenger Service Contracts (PSCs) as set out in the Williams-Shapps Plan for Rail. When these PSCs are established, we will expect to provide input on the improvements they should include, for example rolling stock upgrades or new and improved services.

We do not expect PSCs to be implemented for Northern or TransPennine Express services for some years, but in the meantime, we will continue to work through the Rail North Partnership to provide our priorities for improvements to the industry as the existing agreements are negotiated and renewed.

'Funding pot' opportunities

In recent years funding for public transport improvements has often come through specific funding 'pots' held by the Department for Transport or other Government departments. Recent opportunities included the Restoring Your Railway Fund, Transforming Cities Fund, City Region Sustainable Transport Settlement (CRSTS), Access for All programme and the Levelling up Fund. These funds have typically focused on improvements to facilities and accessibility at rail stations and we expect to continue delivering similar schemes through similar funding opportunities in the future.

As and when specific 'pots' of funding become available, we will work with local partners as appropriate to support their funding bids for improvements to the rail network in West Yorkshire.

Further devolution and Great British Railways

The Government's 'Levelling Up' White Paper positions further devolution as a key mechanism to reduce social and economic inequalities in the UK. Whilst the details of any further agreements and what they mean for investment in the rail network are currently unclear, we welcome any

opportunity for increased local control over investment in our rail network and will monitor developments in this area closely.

We also welcome opportunities to establish a formal working relationship with the new industry body, Great British Railways (GBR). We hope to work with GBR to deliver improvements across our rail network and ensure that passengers in West Yorkshire feel the benefits that industry reform can offer.

Next Steps to secure the future of rail in our region

We have created this Strategy to deliver this vision for the future of rail in our region:

Our Rail Vision is for the rail network to be the core of a fully integrated multi-modal network of public transport and active travel, which is attractive, conveniently accessible to everybody, and links people to opportunities and amenities across our region and beyond, with door-to-door journey times that are reliably at least as fast as driving; rail must also be the mode of choice for industry across a wide variety of sectors to ship their freight. This is needed to allow the network to support the wider objectives of boosting productivity, enabling inclusive growth, tackling the climate emergency and delivering a 21st century transport network. Further, we must reach net-zero carbon emissions by 2038.

A rail service to support decarbonisation and sustainable growth

Our Rail Vision sets out what the rail service in West Yorkshire needs to look like to attract passengers and freight to rail as a mode of choice, to support the wider decarbonisation and sustainable growth objectives.

The following points summarise our ambition and our intended outcomes for our rail service offer, noting these are subject to developing affordable, deliverable and value for money solutions.

An all-day, all-week service

with service frequency reflecting when passengers want to travel, including early morning, late evening and weekend peak periods.

Frequent local and inter-regional services

a minimum service frequency of two evenly spaced trains per hour, with enhanced frequencies connecting sub-regional centres and other larger towns, allowing people to travel when they need to.

An integrated public transport offer

where ticketing, information, interchange facilities and timetables are planned to make the door-to-door public transport journey, across all of West Yorkshire, as simple and convenient as possible.

Quick journey times

so that the public transport offer is as competitive with car as possible.

An attractive longer-distance service

with a minimum of two fast trains per hour frequency connecting to our neighbouring regional centres and an hourly opportunity further afield – including services from Bradford, Wakefield, Huddersfield and Halifax to better access pan-regional and national opportunities.

Capacity and capability for future demand

allowing us to accommodate at a minimum the 60% increase in passenger-kilometres and a 155% increase in freight tonne-kilometres needed to support decarbonisation in the region.

Consistent service quality

so that all parts of the region enjoy a high standard of station facilities and design which integrates stations with the communities they serve, rolling stock that meets passengers' expectations and a punctual service that passengers and business can rely on.

To make this a reality, the Combined Authority is committed to working together with Government, Regional Transport Authorities, the rail industry, Local Authorities, our local partners and other stakeholders to take forward our implementation plan to deliver improvements across our rail network and ensure that passengers in West Yorkshire feel the benefits that industry reform can offer.

Glossary

Accessibility	The physical layout of trains, stations and other passenger-facing facilities that mean that persons of all physical and cognitive ability (and disability) levels can use them easily.
Access (to network / stations)	How rail travellers arrive at their station from their actual journey origin, and by extension how they arrive at their ultimate destination after leaving the last rail station – contrast with "accessibility".
Active travel	Making journeys by physically active means, like walking and cycling.
Axle load	The load that presses on each axle of a (rail) vehicle. Railway infrastructure must be capable of accommodating the axle load of the heaviest freight (and passenger) trains that run (also known as 'route availability').
Bi-mode unit / locomotive	A train that can operate either using more than one power source, usually being electro-diesel (meaning electric power plus diesel engines) but can mean electric-battery or other alternative power.
Business case	An assessment of the value-for-money of investment in a scheme, encompassing strategic, economic, management, commercial and financial elements.
Cage-load freight	Freight that is transported in wheeled metal cages that allow easy transfer between vehicles.
Capacity: infrastructure / track	The ability of the railway network itself, in terms of the tracks, signalling and junctions, to handle the number and types of trains required to deliver the timetabled passenger and freight services.
Capacity: trains	The space available on passenger trains, in terms of the number of seats and available space for standing on shorter journeys, to accommodate consistently and reliably the number of passengers wishing to travel.
Climate emergency	A situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.

Commuting	Regular travel from home to work and back, which may or may not take place several days a week; also often includes trips to and from a place of education.
Decarbonisation	The process of reducing and removing carbon emissions from our society in order to approach or reach net-zero carbon, as a response to the climate emergency.
East Coast Mainline (ECML)	The line from London King's Cross northwards towards Doncaster, York, Newcastle and Edinburgh, often taken to include the West Riding section which connects Doncaster to Wakefield Westgate and Leeds.
Electrification	A railway electrification system supplies electric power directly to railway trains, most commonly (though not always) via overhead power lines.
First and last mile	For passengers, first and last mile refers to the start and end of the journey, for example from a residence to a bus stop or railway station. For freight, first-mile delivery is at the start of the delivery of the supply chain and last-mile delivery is at the end of the supply chain, especially where the actual origin and/or destination are not directly on the railway so another mode is needed to access the network. ("Last mile" is sometimes also used for electric freight locomotives with a small diesel engine to allow movement over unelectrified sidings and short branches.)
Freight tonnes lifted	The weight of goods moved (measured in tonnes)
Freight tonnes moved	A function of the weight of goods moved and the distance over which they are moved (measured in tonne-kilometres)
Frequency	The number of trains operating on a specific route each hour, typically expressed as 'trains per hour' or 'a 30 minute frequency'.
Gap analysis	A process that assesses the capability of the service or network against the desired, expected provision.
Great British Railways (GBR)	Great British Railways is a planned state-owned public body that will oversee rail transport in Great Britain, with the exception of Transport for London, Merseytravel services, and light rail and trams elsewhere in England.

Gross Value Added (GVA)	A measure of the value of goods and services produced in an area, industry or sector of an economy.
Heritage railway	A rail line that operates primarily as a tourist and leisure attraction rather than primarily as a public service; such lines typically do not operate daily throughout the year – in West Yorkshire, the successful Keighley & Worth Valley Railway is an example.
High Speed 1 (HS1)	The existing high-speed railway line that connects London to the Channel Tunnel.
High Speed 2 (HS2)	A new high speed railway connecting London with the Midlands and North of England.
Inclusive growth	Economic growth that is distributed fairly across society and creates opportunities for all.
Indicative Train Service Specification (ITSS)	An indication of the level and types of train service provided (or to be provided) within a given area. It usually contains details of origin, destination, routing, stopping pattern and train characteristics. It is used as a first stage in service planning, from which timetables can be developed.
Integrated connectivity / transport	A network where different services are coordinated with one another, for example in terms of the routes and timings of separate services, of unified fares and ticketing systems, and of passenger information and marketing.
Integrated Rail Plan (IRP)	The Integrated Rail Plan for the North and Midlands, published in November 2021, set out the Government's proposals to improve the rail network in the North and Midlands.
Interchange	The requirement to change between vehicles, whether it be changing trains, or changing between train and bus or vice versa.
Intermodal containers	A shipping container available in standardised shapes and sizes, designed and built for freight transport across varying modes such as rail, road and sea.
Inter-regional	Travel over intermediate distances beyond West Yorkshire's boundaries, often to neighbouring conurbations (interurban travel), but not including longer-distance intercity travel.

Intra-regional	Within the West Yorkshire region, including travel between the districts of West Yorkshire, for example between Bradford and Wakefield.
Leisure travel	Journeys which are made not to work or education (compare "commuting") or for business purposes; these therefore include travel for personal business (e.g. shopping or a visit to a doctor), day-trips, incoming and outbound tourism, and social trips such as visits to family and friends.
Loading gauge	The height and width clearance available to trains, such as under bridges and similar structures. No vehicle, or load on a freight wagon, can pass along a line for which it is not gauge-cleared.
Local Transport Plan	Local Authorities in England produce and regularly update statutory Local Transport Plans (LTPs). LTPs identify priorities for maintaining and improving local transport systems, based on the needs and wants of residents and organisations in the region, and put forward plans for how they will be achieved. These proposals may then given funding to be implemented.
LTP4	The fourth Local Transport Plan developed by West Yorkshire Combined Authority, currently in development.
Mass Transit	A proposed new transport system in West Yorkshire which is currently under development.
Modal shift	Changing the way in which passengers travel, or freight is moved, from one form of transport to an alternative one – for example, attracting car drivers to use public transport instead, or changing a freight shipment from lorry to rail trunk haulage.
Multi-modal	Using more than one form of transport, such as rail and bus.
Net-zero carbon	A state in which the difference between greenhouse gases emitted into and removed from the atmosphere is zero, or close to zero.

Northern Powerhouse Rail (NPR)	A proposed major strategic rail programme, designed to transform connectivity between the key economic centres of the North.
Off-peak	Periods outside peak times (see 'Peak' below).
Palletised goods	Goods carried on small, flat wooden platforms of standardised sizes designed for easy shipping, transfer and loading / unloading.
Peak	The busiest period for commuting travel, typically occurring on weekdays between 07:00 and 10:00, and 16:00 and 19:00.
Performance	On rail, this covers both the Punctuality of trains (whether they arrive and depart on time) and Reliability (whether they operate or are cancelled).
Polycentric	Having more than one urban centre of strategic importance.
Premium goods / freight / logistics	Carrying items of high value whose rapid delivery is time-critical – typical examples include mail and parcels.
Rail Network Enhancement Programme (RNEP)	The principal funding opportunity for improvements to physical rail infrastructure, including track, signalling and electrification. It is managed by the Department for Transport and periodically updated.
Rolling stock	Railway vehicles including passenger carriages, freight wagons, self-powered multiple units and locomotives.
Short-formed	A train running with fewer carriages than planned. This is not necessarily the same as a train composed of too few carriages than required to meet actual demand.
Strategic Rail Partnership	We have established a Strategic Rail Partnership with industry partners as a forerunner for the strong and effective local partnership with Great British Railways that the Williams-Shapps proposals promise.
T-shaped station / T-station	In the context of Leeds, this refers to the concept of providing new platforms to the south of the existing Leeds station, such as for the use of HS2, NPR and/or other services, with the new platforms on a north-

	south alignment perpendicular to the existing east-west-aligned station. The concept has featured in HS2 planning for Leeds.
Ticketing	This refers not only to traditional train or multi-modal tickets, but to all means by which entitlement to travel is shown, including travel passes, stored-value / pay-as-you-go smart cards and similar, and other payment methods such as contactless bank payment cards or mobile apps.
Trainload freight	Rail freight where the whole train is operating for one specific customer (who made be the end customer like a quarry, or maybe a forwarder such as a container shipping company) – contrast with "wagonload freight".
TransPennine Route Upgrade (TRU)	A programme of work to the route between Manchester, Huddersfield, Leeds and York to improve passenger services and provide capacity for freight.
Transhipment	Moving freight from one vehicle to another, such as transferring containers from a ship onto a train, or unloading parcels from a train for delivery by van.
Turn up and go	A service with a high frequency that means passengers generally do not need to check the times in advance and will simply arrive at the station, usually taken as a train every 10 to 15 minutes or better.
Wagonload freight	Rail freight where a train is composed of wagons for more than one customer – in an extreme case, each wagon of the train could be carrying a different customer's goods. The consequence is that the minimum shipment size which a customer can have conveyed by rail is much less than under a trainload-only system. The wagons may or may not all be travelling between the same origin and/or destination. Contrast with "trainload freight".
Williams-Shapps Plan for Rail	A 2021 White Paper that set out the Government's plan for changing the railways in Great Britain, based on the shared vision of Keith Williams, the independent Chair of the Rail Review, and the Rt Hon Grant Shapps MP, the former Secretary of State for Transport.

Find out more

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All information correct at time of writing