

Route Plans 2009
Route 10
North Cross-Pennine,
North and
West Yorkshire

Network Rail

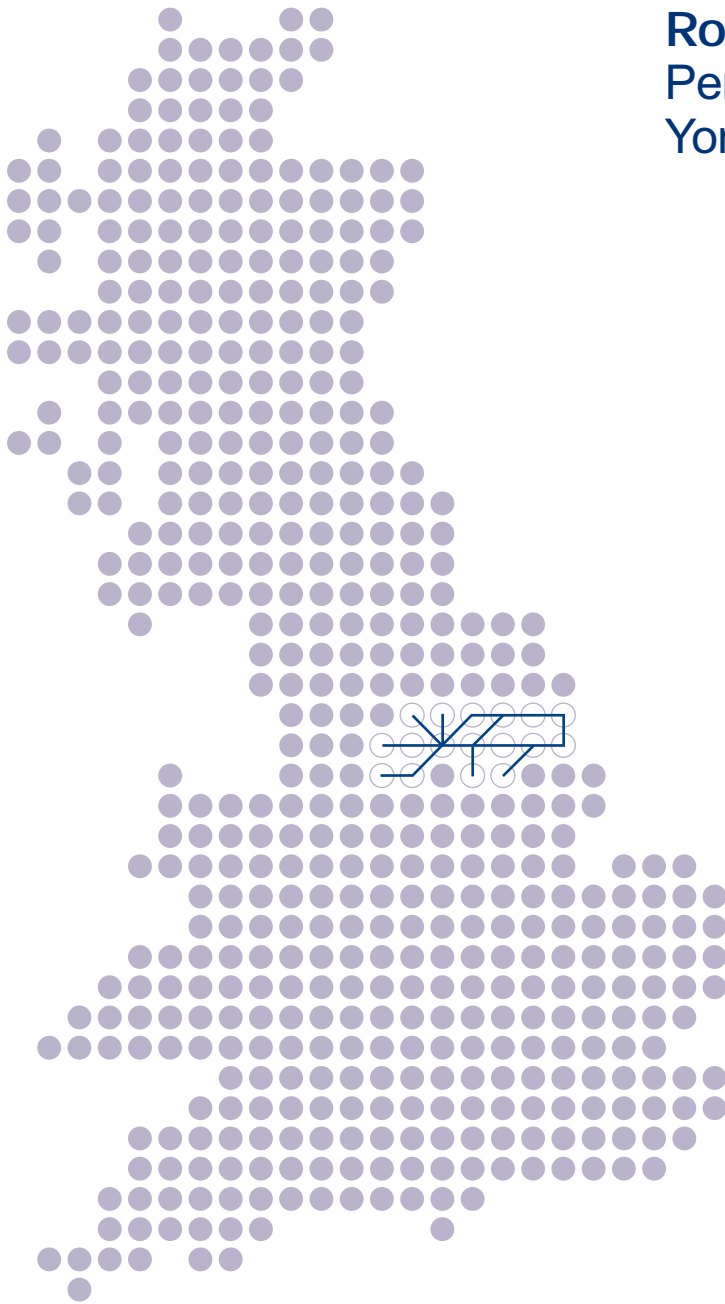
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Route 10 North Cross-Pennine, North and West Yorkshire

Section 1: Today's railway

Route context

The route provides the primary corridor across the Pennines connecting the main conurbations of Manchester, Bradford and Leeds. These major cities are then linked by the route with Hull, York and Scarborough, and via Route 8, to the North East. Several local lines add to the spread of the rail network in the area. The route mirrors an extensive but heavily congested road network.

There is a variety of passenger and freight traffic on the route, providing transport services to local communities, as well as connecting key city destinations on and off the route. It serves the

three Aire Valley power stations, Hull Docks and a variety of other freight terminals, and is also used by through freight traffic.

Work is close to completion on the Yorkshire and Humber Route Utilisation Strategy (RUS), led by Network Rail on behalf of the industry, covering this route and Route 11. The DfT's Regional Planning Assessment for the Yorkshire and Humber Region, which feeds into the RUS, was published in June 2007.

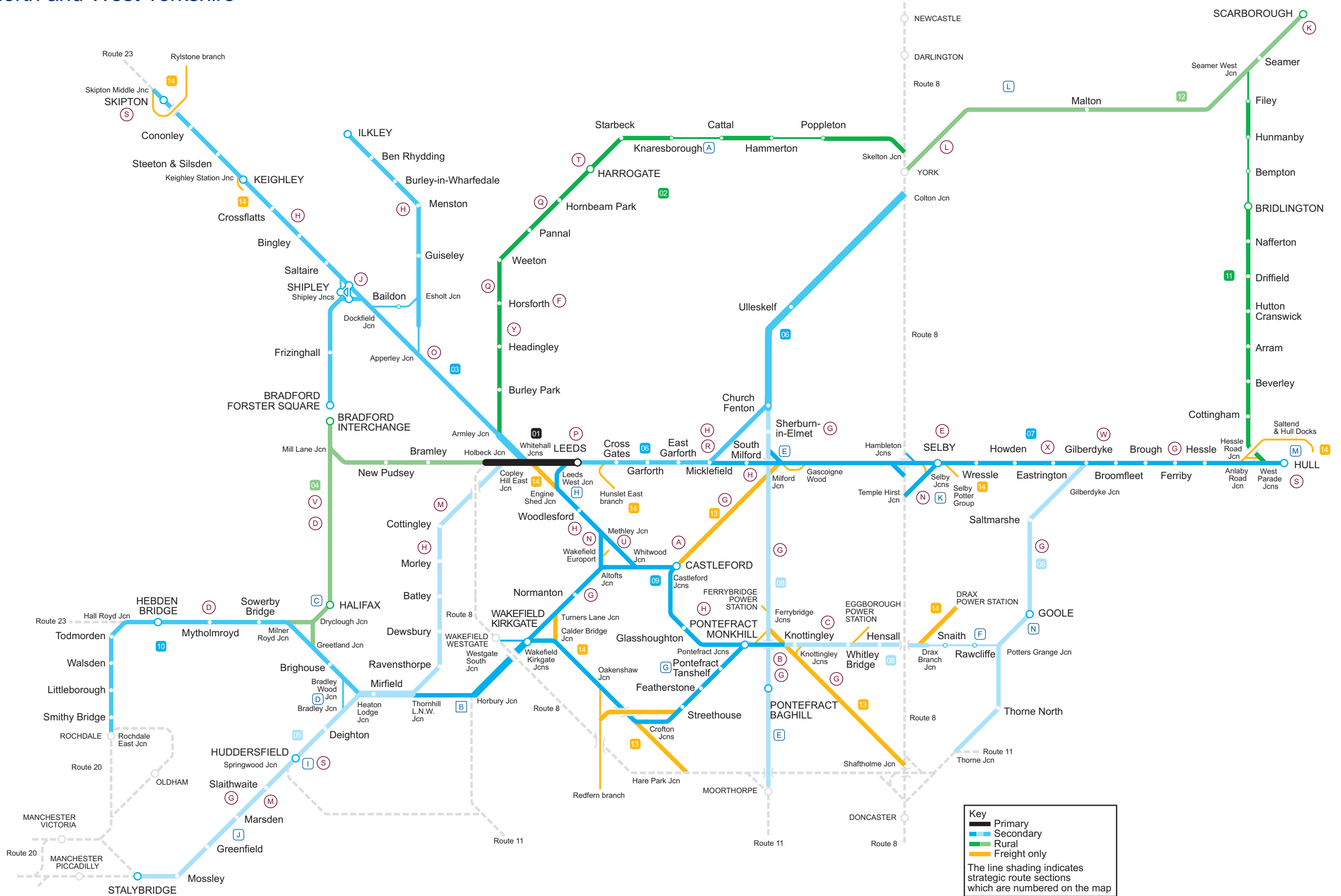
A community rail partnership covers the Wolds Coast and the Barton on Humber (Route 11) routes.

Today's route

The route comprises the following groups of lines. The relevant Strategic Route Section is shown in brackets:

- interurban – from Stalybridge to Hull and Scarborough via Leeds, excluding a short section of the East Coast Main Line around York (10.01, 10.05, 10.06, 10.07 and 10.12)
- urban lines – a selection of routes centred on Leeds carrying PTE sponsored passenger services and, in many cases, freight as well (10.03, 10.04, 10.09 and 10.10)
- rural lines – mainly in East and North Yorkshire carrying local services and, in some cases, freight traffic (10.02, 10.08 and 10.11)
- freight only lines – mixture of freight only through lines, sometimes used for passenger train diversions, and branches (10.13 and 10.14).

Route 10 North Cross-Pennine, North and West Yorkshire



Current passenger and freight demand

This route links the key cities and towns in the northern half of the Yorkshire and Humber region and also provides key links to other major cities and towns outside the route. It is therefore used by a mixture of local and longer distance passenger services. There are many medium distance passenger journey opportunities on the route for both work and leisure use.

Interurban services operate between Manchester and Leeds, continuing to Hull, Scarborough and the North East with long distance high speed services operating between Birmingham, Leeds, the North East and Scotland.

Local passenger services are of two types; regular PTE sponsored services in West Yorkshire and more rural services in East and North Yorkshire. The PTE services, in particular, are continuing to see a large increase in patronage.

This route forms an integral part of the journey for many long distance rail freight flows, particularly the line from Colton Junction via Ferrybridge to Moorthorpe which connects the North East with the Midlands.

There are also several key freight markets located on the route itself. Some of the most significant freight flows are those of coal traffic from the East Coast ports and Scotland bound for the three Aire Valley power stations of Drax, Eggborough and Ferrybridge which provide more than 25 percent of England's electricity, and also to power stations in the Trent Valley. Coal from Ayrshire operates via the Settle and Carlisle line and then traverses the route from Skipton, via Leeds west end and Woodlesford. There is also increasing coal tonnage originating on this route at Hull Docks for the same power stations.

Other notable freight flows include intermodal traffic to and from Wakefield Europort, Selby (Potter Group) and Stourton Freightliner terminal, near Leeds. There is also aggregates traffic from Rylstone Quarry near Skipton.

Current services

Northern Rail, First Keolis TransPennine Express (TPE), National Express East Coast (NEXC), Hull Trains, CrossCountry, East Midlands Trains and West Coast Railway Company operate passenger services on this route. Freight trains are operated by DB Schenker Rail (UK) Limited, Freightliner Limited, Freightliner Heavy Haul Limited and First GB Railfreight.

The core TPE operation is between Leeds and Manchester with four trains per hour (tph) for most of the day. These extend east of Leeds, one per hour to each of Scarborough, Middlesbrough and Newcastle (all via York) and Hull. This corridor also carries a number of local services operated by Northern Rail, including hourly services from Huddersfield to each of Leeds, and Manchester, and a twice hourly service eastwards from Leeds with one train to York (from Blackpool via Bradford) and one to Selby. An hourly Leeds to Manchester Victoria service via Dewsbury, Brighouse and Hebden Bridge was introduced in December 2008. Additional services operate during peak times.

Northern Rail operates four tph from Leeds to Bradford Interchange including the Blackpool to York trains and a half hourly service from Leeds to Manchester via Rochdale. Other services from Leeds are a half hourly service to Knaresborough via Harrogate, with one train per hour extending to York, a half hourly service to Castleford extended alternately to Knottingley and Sheffield via Barnsley.

There is also a half hourly semi-fast service from Leeds to Sheffield via Wakefield Kirkgate and Barnsley, with alternate trains extended to Nottingham.

The route also has a group of Northern Rail electric local services connecting Leeds, Ilkley, Bradford Forster Square and Skipton, all of which operate on a half hourly basis. These are supplemented by diesel services operating at slightly more than two hour frequencies beyond Skipton to either Carlisle or Lancaster. There is also an hourly service between Wakefield Kirkgate and Knottingley operating via Pontefract Monkhill.

Hull is served by half hourly Northern Rail trains from South Yorkshire and half hourly off-peak (with additional peak services) from the Wolds Coast line from Scarborough and Bridlington plus the hourly TPE service to Leeds and Manchester. There are also trains roughly every hour between York and Selby with half of these extending to/from Hull operated by Northern Rail.

As well as the hourly TPE service between Liverpool and Scarborough, the section from York to Scarborough is used by additional services in the summer including a TPE shuttle service and some steam hauled services operated by West Coast Railway Company.

Hull Trains operates seven long distance trains each way per day between Hull and London King's Cross. NXEC operates all the trains between Leeds and London King's Cross, and a handful of trains on other parts of the route, with East Midlands Trains operating up to three morning and evening peak trains per day between Leeds and London St. Pancras via Sheffield.

Over this route, CrossCountry operate hourly through services between Plymouth and Edinburgh (via Leeds). This is one of the busiest parts of the CrossCountry network and CrossCountry has increased capacity in the form of High Speed Trains (HST) on its most crowded services from December 2008, which provides some growth in capacity on certain peak hour flows to/ from Leeds.

Freight services are described in the previous section.

Figure 1 shows the current level of service to Leeds from principal stations.

Figure 1 Leeds – current train service level (trains per hour)	
Originating station	tph to Leeds
Huddersfield	5
Harrogate	4 peak/2 off peak
Skipton	4 peak/2 or 3 off peak
Ilkley	3 peak/2 off peak
Castleford	2
Hull	1
Manchester	4 via Diggle
Bradford Interchange	4
York	6 peak/5 off peak

Figure 2 Tonnage



Figure 2 shows the total annual tonnage levels on the route.

Traffic volumes are summarised in Figure 3.

Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	19	3	22
Train tonne km per year (millions)	2,583	3,136	5,719

Current infrastructure capability

The following maps set out the capability of the current network.

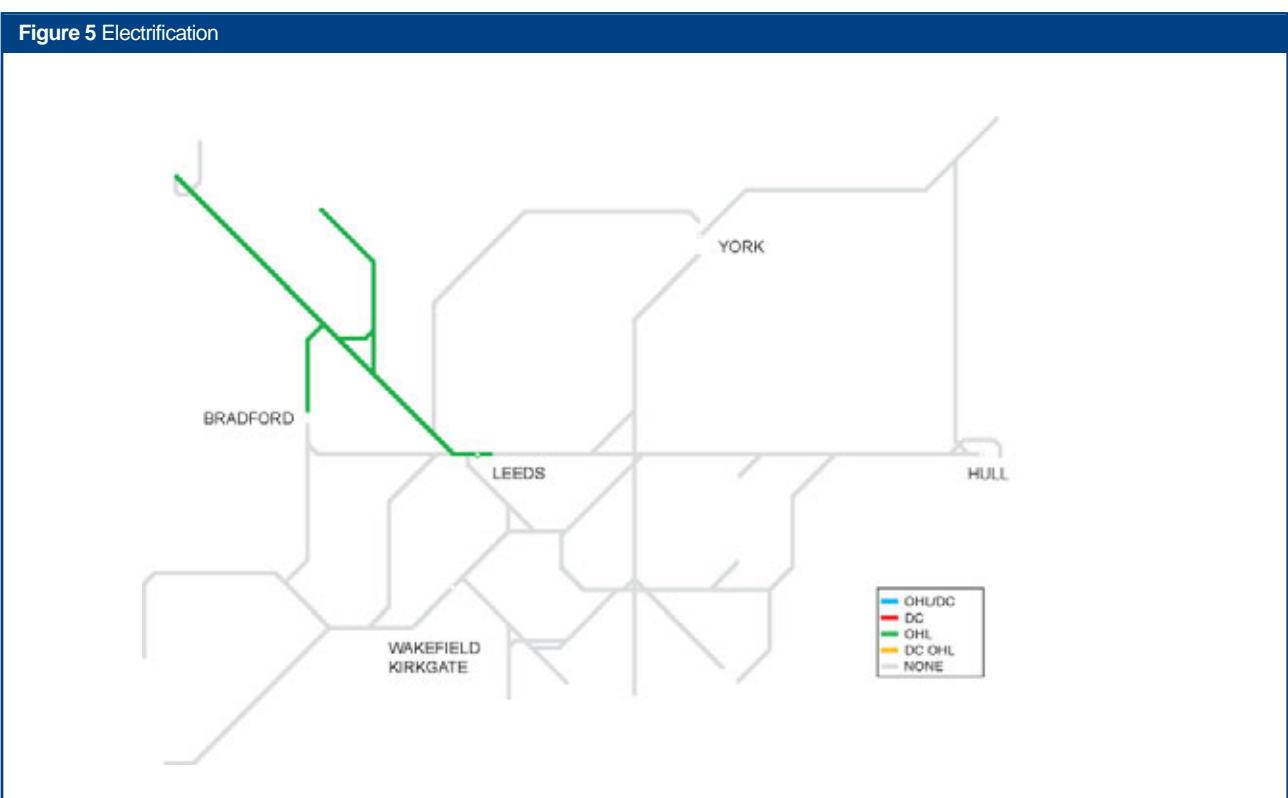
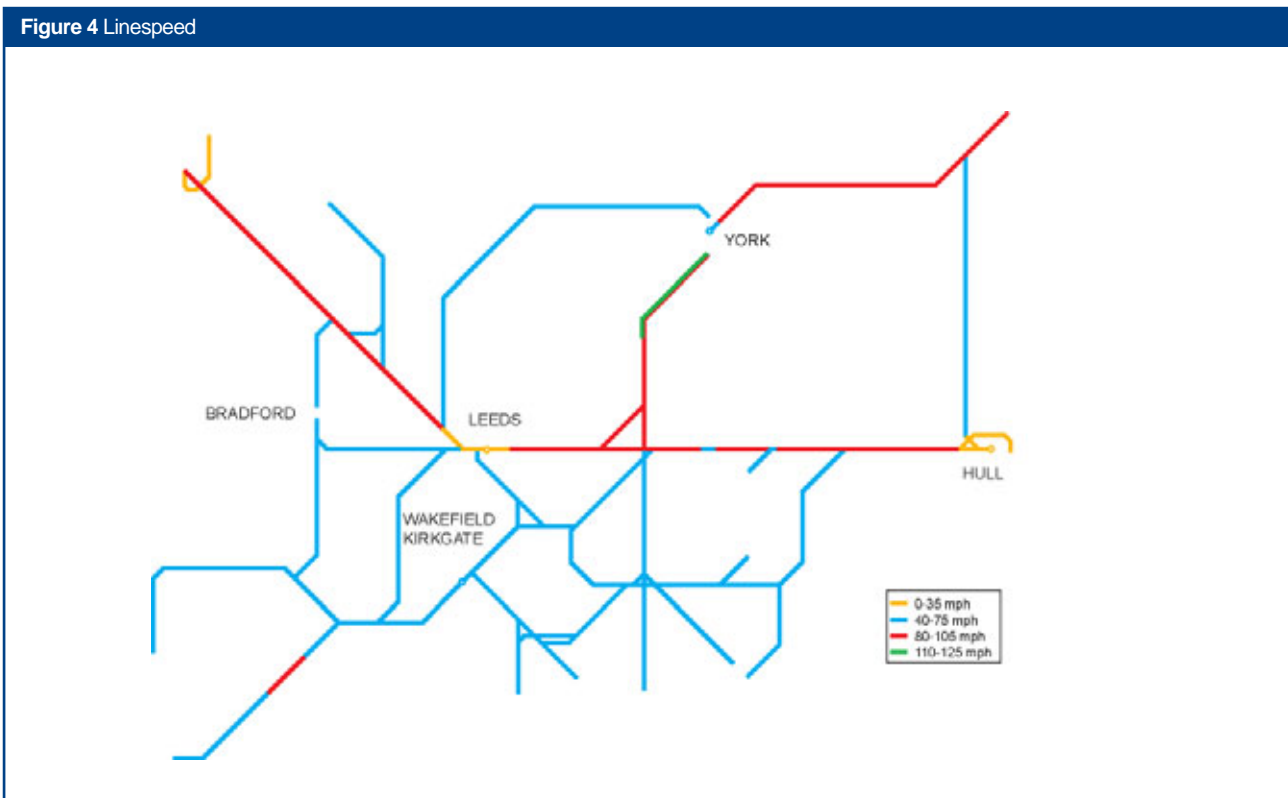


Figure 6 Route availability

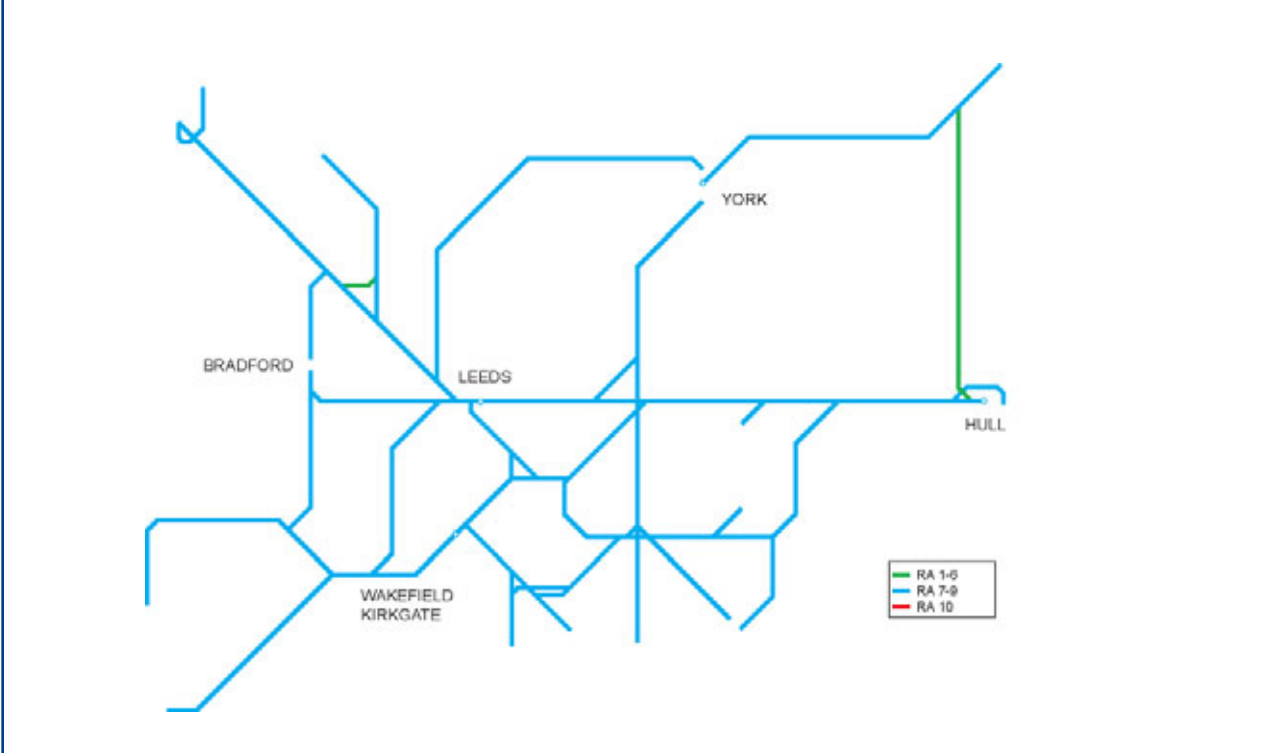


Figure 7 Gauge



Current capacity

There are several major capacity constraints on the route:

- Leeds station area; much of the additional capacity provided by the Leeds 1st capacity upgrade scheme has now been used, especially in the peaks
- Leeds – Micklefield Junction – Church Fenton; busy two track railway with a mixture of fast and stopping services and no overtaking facilities
- Leeds to Skipton; another busy two track section with stopping and semi-fast passenger trains and heavy freight services, featuring a busy 'at grade' triangular junction at Shipley
- Leeds – Huddersfield – Stalybridge; largely a two track route with limited overtaking facilities and a mixture of fast and slower passenger services and freight services
- Hull to Gilberdyke; another two track railway with a variety of traffics
- Hull Docks branch; capacity on the branch has been improved through partial doubling to help meet freight growth.

Figure 8 shows the current train service level in key sections of the route.

Figure 8 Current train service levels (peak trains per hour)

Route section	Number of trains
Neville Hill – Micklefield	9
Armley Jn – Apperley Junction	9
Bradley Wood Junction – Huddersfield	8
Gilberdyke – Hessle Road Junction	6
Wortley Junction – Mill Lane Junction	4

Figure 9 2008/09 PPM

TOC	Forecast MAA	As at period
CrossCountry	89.8%	10
National Express East Coast	86.5%	10
East Midlands Trains	88.6%	10
Northern Rail	89.4%	10
TransPennine Express	90.2%	10

Current performance

Figure 9 shows the forecast 2008/09 PPM for the main TOCs running along the Route.

The capacity constrained lines listed above also cause performance problems when trains are running out of course, particularly when long distance services are involved.

Section 2: Tomorrow's railway: requirements

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

Route	Annual passenger km (millions) forecast in 2008/09	Additional passenger km (millions) to be accommodated by 2013/14
North Cross-Pennine, North and West Yorkshire	1,189	189

Figure 11 Peak hour arrivals to be accommodated by Strategic Route

Regional hub	Peak three hours			High-peak hours		
	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)
Leeds	23,400	5,100	64	11,300	2,700	70

Future demand in Control Period 4 (CP4)

Urban and regional journeys into the major conurbations are expected to continue growing, particularly on routes into Leeds and Sheffield where passenger growth of up to 45 percent over the next 10 years is forecast. In particular, demand growth on the cross Pennine services operating through Manchester and Leeds to Hull, Scarborough and the North East is being stimulated further following the introduction of Class 185 units, which offer improved passenger comfort and have been able to offer some improved journey times.

The most recent counts on CrossCountry services indicated an overall growth rate of 8 percent per annum. In particular, steady growth on their Edinburgh to Plymouth via Leeds services is leading to crowding issues on some trains, notwithstanding the additional capacity that CrossCountry are providing in the form of HST's on certain peak flows to and from Leeds. Through rolling stock internal reconfigurations, investment in more trains with more seats and service re-routing, CrossCountry have plans to further increase passenger capacity on the route via Leeds. This will improve connectivity and reduce crowding between Sheffield and Leeds and reinstate direct services between West Yorkshire and the Thames Valley.

The Freight RUS was published by Network Rail in March 2007 and established by the Office of Rail Regulation in May 2007. A key input to the strategy was a set of ten year demand forecasts that were developed and agreed by the industry through the RUS Stakeholder Management Group.

Substantial freight growth is expected, driven by the expansion of the East Coast Ports, particularly on coal and over the longer term on some intermodal flows through the Yorkshire region. Aggregate traffic from the Yorkshire Dales (Rylstone branch) is expected to continue to grow.

Future demand beyond CP4

Looking at the Network as a whole, the 2007 Government White Paper 'Delivering a Sustainable Railway' anticipated a doubling of both passenger and freight traffic over the next 30 years. On this route most passenger growth will be accommodated through further train lengthening. However, Manchester to Leeds and Manchester to Sheffield are likely to need additional services, necessitating the need for further major infrastructure changes mainly on existing rail corridors.

Freight trends are sometimes less easily predicted, an example being that long term patterns of supply of coal to the electricity industry do not follow readily-forecast trends. All the evidence, however, suggests that substantial growth can be expected on routes highlighted in the Freight RUS, particularly on coal flows and in the longer term on intermodal flows driven by the expansion of the east coast ports.

The Strategic Freight Network process and the Hutchinson Port (UK) Limited project will continue with gauge enhancement work to W9, W10 and W12 and will take into account diversionary requirements.

Section 3: Tomorrow's railway: strategy

Figure 12 summarises the key milestones during CP4 in delivering the proposed strategy for the route. Further explanation of the key service changes and infrastructure enhancements are set out in the following sections.

Figure 12 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2009-2012	Phased programme of train lengthening on most routes	Platform extensions and additional stabling facilities	Increased capacity to meet HLOS peak capacity metric
2010-2014	Revised services on Leeds – Manchester – Liverpool route	Programme of linespeed and capacity enhancement schemes	Increased capacity to meet HLOS peak capacity metric and improved journey times
2010-2014	Revised service patterns on routes where train lengthening is not the best solution to meet growth	Turnback facilities at a number of locations, an additional platform at Castleford, and enhanced signalling on the Harrogate line	Increased capacity to meet HLOS peak capacity metric

Figure 13 Capacity enhancements to meet HLOS peak capacity in CP4

Description	Additional vehicles involved	Station served	0700 – 0959 Capacity Impact	0800 – 0859 Capacity Impact
Northern Rail / TransPennine Express train lengthening and additional services	112	Leeds	12,100	6,500

Figure 14 Impact on HLOS peak capacity metric

London Terminals and regional Hubs	Peak three hours		High-peak hours					
	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4
Leeds	28,500	38,600	50,700	56%	14,000	17,200	23,700	59%

The table above shows how the HLOS load factor targets for locations on the route are met by the proposed strategy.

The measures will also allow the total additional passenger km to be accommodated.

Strategic direction

Work on the Yorkshire and Humber RUS has reached the Draft Consultation Stage with final publication proposed in Summer 2009.

This will provide a strategy for future development of the cross Pennine and Yorkshire routes. The main strategic challenge to be answered by the RUS is to cater for increasing commuter peak passenger demand.

In the short to medium term much of the peak growth will be met through train lengthening as it will be in other parts of the country. However, there are some routes where lengthening is not feasible or where the additional rolling stock required for lengthening could be better used by providing a revised service pattern which would then bring further benefits.

Meeting growth on the Huddersfield – Leeds – York/Selby corridor through passenger service changes and extra platform capacity at Leeds is highlighted in more detail under future train service proposals and future capacity below.

Enhancement of the Leeds – Manchester (via Huddersfield) services is another key area examined by the RUS and links with the issues in the previous paragraph. The Government White Paper specifically mentions improved journey times and increased train capacity on this section. This is likely to require infrastructure changes in the Diggle and Marsden areas.

Through the ongoing RUS programme, CrossCountry aims to address train service provision, capacity and journey time issues within CP4 through the re-routing of some of its services via Leeds.

Leeds is a major passenger interchange and is therefore a key location to be considered when developing future transport strategies.

Improvements around Shaftholme and Joan Croft Junctions should help eliminate the use of the ECML by Immingham to Aire Valley coal trains and allow these services to operate over a shorter route.

Figure 15 Tonnage growth



Future train service proposals

Figure 15 indicates the forecast percentage change in tonnage to 2018.

Northern Rail

In order to meet peak hour growth targets in the HLOS, additional vehicles will be required at Leeds. In the short to medium term (2009 -14), much of the peak growth will be met through train lengthening. However, there are some routes where this is either not feasible, or where more effective use of the rolling stock that is likely to be available needs to be made. On these routes, additional short distance passenger services with a revised service pattern will help meet anticipated future growth. Some of the additional capacity is provided within existing franchise agreements.

One route where train lengthening is difficult is the Airedale route between Skipton and Leeds because of platform length constraints at Shipley which is primarily caused by the station being on a triangle. An option to lengthen the platforms here is being examined.

Another such route is the Harrogate line where our plans for improved signalling headways between Harrogate and Horsforth as part of a signalling renewal would allow service enhancements. A turnback facility at Horsforth would provide capacity improvements and journey time improvements through timetable changes. A new station is also proposed at Horsforth Woodside.

Some additional capacity could be provided on Doncaster to Leeds electric service by operating class 333 units vice the current class 321s.

New bay platform capacity at Leeds station will provide extra capacity for additional and lengthened services at Leeds. A new turnback facility east of Leeds in the Micklefield area will allow some trains to run beyond Leeds thus providing further platform capacity in the Leeds station area.

Various stakeholders are interested in improving services in the upper Calder Valley, including improving journey times between Leeds, Bradford and Manchester. The Hebden Bridge – Leeds service mentioned above under current services is a first step. The recently completed remodelling of Mill Lane Junction near Bradford provides a small journey time reduction and improved operational flexibility.

Two fast passenger services per hour and two stopping passenger services between Leeds/Bradford and Manchester are options within the RUS, together with a shuttle service between Manchester and Rochdale. This will provide capacity improvements and journey time improvements through timetable changes and small infrastructure changes such as turnback facilities at Rochdale. Additional rolling stock required to meet peak growth could provide the resource to achieve at least some of the service enhancement aspirations.

As the additional fleet requirements for the entire Yorkshire & Humber region are so large, there is a need to concentrate the workload of Northern Rail's depot at Neville Hill on maintenance. In order to achieve this, and thereby avoid building another major fleet maintenance facility in the region, a number of new/enhanced stabling facilities are required.

Such facilities on this route are likely to be in the Huddersfield and Skipton areas. We continue to work with Northern Rail to identify the exact requirements for each location.

CrossCountry

Modification to the Class 220/221 fleet of trains will enable CrossCountry to introduce additional seating in CP4.

CrossCountry have aspirations to improve links between York, Leeds and Sheffield. This would aim to provide a regular half hourly pattern between these cities thus helping to address capacity issues on some of their busiest flows, reinstate direct services between West Yorkshire and the Thames Valley and ease crowding in the Yorkshire area.

Grand Central/Grand Union/Grand Northern

The ORR has awarded Grand Northern firm rights to operate a Bradford Interchange – Kings Cross via Halifax, Brighouse, Wakefield Kirkgate, Pontefract and Doncaster to London service.

Grand Union has been developing new service groups since 2005 and has aspirations to introduce the following new services:

- Bradford Interchange – Kings Cross via Halifax, Brighouse, Wakefield Kirkgate, Pontefract and Doncaster
- Huddersfield – Kings Cross via Mirfield, Wakefield Kirkgate, Rotherham (or Barnsley), Meadowhall, Sheffield and Worksop
- Scarborough – Kings Cross via Malton and York.

Hull Trains

The ORR has agreed to change the current access rights to firm rights for all the current Kings Cross to Hull services. Hull Trains aspire to run an eighth train in each direction between Kings Cross and Hull.

First Keolis TransPennine Express

TransPennine Express aspires to operate a fifth train per hour in each direction between Manchester and Leeds. This is a firm recommendation in the draft RUS. TPE and DfT in the 2007 Railway White Paper in conjunction with

Network Rail are developing plans to shorten journey times between Liverpool, Manchester, Leeds and Newcastle with an aspiration to achieve a journey time of 43 minutes between Manchester and Leeds. TPE are keen to achieve some train lengthening and aspire to provide some new or more frequent and faster links between the North West, Yorkshire and the North East.

National Express East Coast

National Express East Coast is planning to operate a two hourly service from Harrogate to London via Leeds from December 2009.

Freight

The critical growth requirements for freight services on the route is likely to be coal imports and in the longer term some intermodal traffic increases through the Yorkshire region driven by the expansion of the east coast ports.

Future capability

A programme of platform lengthening in West and South Yorkshire is proposed to allow services on York/Selby – Leeds, Huddersfield – Leeds, Sheffield – Barnsley – Leeds, Knottingley – Leeds and Sheffield – Moorthorpe – Leeds (via Route 8) to operate at least four 23m vehicles during the peaks in order to meet the HLOS growth targets.

On the Leeds to Manchester route, the removal of the heavy axle weight (HAW) restriction over Golcar Viaduct will be reviewed following major bridge repair work in 2009/10. The HAW restriction over Huddersfield Viaduct on the same route will require major bridge strengthening works so will remain for the foreseeable future.

Train lengthening on some Leeds North West services and some additional services are proposed. There are a few stations where selective door operation (SDO) may be used. Further development work is being progressed to determine the best mix of train lengthening and additional services, in order to meet the HLOS growth metrics.

Phase 1 of the proposed North Cross-Pennine Upgrade would provide capacity improvements and increased line speeds on the Leeds – Huddersfield – Stalybridge corridor in order to allow faster and additional TPE services between Leeds and Manchester.

Improving line speed on the Sheffield – Barnsley – Leeds corridor planned in CP5, would help balance the journey times between Sheffield and Leeds on this route with the route via Moorthorpe, so that both can be used more effectively to provide a

service between these key cities including when the Moorthorpe route is blocked.

Line speed improvements are being examined between Selby and Hull both in advance of and on the back of planned signalling renewals due on the route in CP5.

Modest speed improvements on some secondary routes would give longer turn rounds at one or both ends of a route which would improve performance as well as increase demand through faster journeys. Where renewals are planned we will seek ways to increase line speeds though this may require some funding from NRDF.

The Felixstowe to west Yorkshire Terminals project will provide W10 gauge clearance on the following lines on this route:

- Temple Hirst Junction – Selby (Potter Group Sidings)
- Hare Park Junction – Wakefield Europort – Stourton container terminal.

We are working with DfT and other stakeholders on development work for W9 and W10 gauge enhancement on a number of other routes that could provide a comprehensive network of core freight arteries in the northern half of the country that would be capable of taking deep sea containers on standard deck height wagons and swapbodies. The routes under consideration include Shaftholme Junction to Colton Junction via Knottingley.

Infill electrification schemes are to be considered in order of priority between:

- East Leeds – East Leeds Parkway – Colton
- Micklefield Junction – Hambleton
- Hambleton West Junction – Selby
- Armley Junction – Horsforth.

These schemes could help with the more effective deployment of rail vehicles to meet demand and we will work with Northern Rail to develop them further.

The Network RUS is looking at further electrification between Manchester and Leeds and York/Hull.

Halifax – Leeds – Selby /York electrification is being promoted by the West Yorkshire Passenger Transport Executive as part of a Regional Funding Allocation (RFA) bid in CP5.

We are looking at solutions to improve the safety of the Woodlesford and Normanton level crossings that provide access to the station platforms. We will

continue with level crossing closures / upgrades in order to maintain and improve operational safety and allow additional services to operate.

Future capacity

Redevelopment of Leeds station and a new southern entrance would improve station facilities and footfall capacity and reduce passenger access times to the development area to the south of the station. Given the significant increase in passenger numbers in the HLOS capacity metric for Leeds, this scheme will help ease station congestion, whilst providing a journey time benefit for those customers requiring access to the southern side of the city. Alternative access to meet footfall capacity issues can be deployed, but none of the options provides the aforementioned journey time benefits. This project is the subject of a Regional Funding Allocation bid.

Phase 1 of the proposed North Cross-Pennine Upgrade may need to provide some improved capacity on the Leeds – Huddersfield – Stalybridge corridor in order to allow faster and additional TPE services alongside stopping passenger services and freight trains.

In order to deal most efficiently with growth on the Huddersfield – Leeds – York corridor, the RUS is proposing running high-capacity peak hour shuttles through Leeds to the Micklefield area, with some extending to Manchester or York. Opportunities to extend the bay Platform 5 at Huddersfield are being re-examined in CP4. An additional platform will be required at Huddersfield in early CP5, while the proposed enhancements between Holgate Junction and York (on Route 8) would assist with running additional peak services using the bay platforms at York.

We are developing the proposal for a parkway station at Micklefield close to the A1/M1 link road, at which some long distance services could call. This would be likely to generate significant additional passenger journeys but could also improve capacity by allowing a shuttle service to operate between Leeds and Micklefield rather than having all stations services between Leeds and York/Selby.

The layout for East Leeds Parkway (which is the subject of an RFA bid) includes a centre turnback facility. If this does not go ahead, then a revised station layout at Micklefield with a turnback is proposed.

The above solution aims to better use the through platforms at Leeds and thereby take out some terminating services. This in turn provides some capacity for lengthening other services. However,

RUS analysis indicates around only half the current terminating services could be accommodated when lengthened. This is not sufficient to provide the additional capacity to meet the Leeds HLOS metric.

The only remaining land in the immediate Leeds station area that could provide some capacity relief is the car park area adjoining platform 1 and the former locomotive holding sidings beyond platform 17. The RUS supports a bay platform at Leeds, adjacent to platform 1, capable of handling at least 6 car trains. We are also examining options to provide additional platform capacity on the southern side of the station; options include extending platform 17 and joining platform 13 and 14 to provide an additional through platform. The former area would provide increased capacity on the Harrogate line and Leeds North West services while the latter would assist with the Castleford, Halifax and Huddersfield lines.

A turnback facility is proposed at Rochdale for services currently operating through Manchester Victoria that run to Rochdale and then continue via the Oldham Loop which is expected to transfer to the Greater Manchester tram network in CP4.

In the peaks the Rochdale and Todmorden services could be strengthened rather than providing additional capacity on the Leeds services to deal with Manchester growth, which would be a better use of additional rolling stock resource.

A turnback facility at Hebden Bridge would allow services at peak times to be strengthened and turned back to Leeds rather than providing additional capacity on the Manchester services. Line speeds between Bradford Mill Lane Jn. and Halifax, Hall Royd Junction and Milner Royd Junction will help improve capacity, performance and journey time improvements on those services running between Manchester and Leeds over and above the turnback services.

Capacity improvements are being examined between Selby and Hull in association with planned signalling renewals on the route due in CP5.

West Yorkshire PTE aspirations for improved services in the Castleford area requires an additional platform and associated pointwork and signalling. The service changes could provide the necessary capacity on the Castleford to Leeds corridor to meet the HLOS capacity metric.

With the support of Northern Rail and West Yorkshire PTE in the RUS process, the platform will be brought back into use in CP4, with the train service reversing using the existing crossover

serving the Ledston branch. Additional pointwork and signalling to provide further service enhancements to meet further anticipated growth from proposed new housing developments on this route will be developed for CP5.

A number of options have been considered to meet peak HLOS growth requirements and to effectively deploy resources on the Leeds to Skipton and Leeds to Ilkley route. The preferred option is train lengthening.

We continue to work with Northern Rail and West Yorkshire PTE in support of the above and other RFA proposed schemes. These include:

- new stations at Horsforth Woodside and Low Moor
- Leeds Area rail growth including the provision of station improvements, station car parking and two new stations at Kirstall Forge and Apperley.

We are continuing to develop improvements around Shaftholme and Joan Croft Junctions to eliminate the use of the ECML by Immingham to Aire Valley coal trains and allow them to operate over a shorter route.

We are looking at additional capacity between Holgate Junction to York station with the additional line and other performance/capacity improvements in this area.

The implementation of an Integrated Train Planning System (ITPS) will be phased in during the next two years. The new system allows us to plan at a lower level of granularity, for example, it calculates sectional running times to the nearest second. We believe that using a system that has the ability to plan at this level of detail, may unlock additional capacity and modestly improve some journey times.

Future performance

Figure 16 sets out the planned PPM for each train operator.

Network Rail is managing a number of initiatives, involving considerable resources, to combat the huge rise in cable theft incidents and to reduce the risk of flooding. These plans aim to provide performance benefits and are consistent with the rail industry objectives to minimise the number of significantly late trains.

Figure 16 Forecast PPM MAA – CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
Northern Rail	90.1%	90.7%	91.2%	91.7%	91.8%
First TransPennine Express	91.7%	92.2%	93.2%	93.8%	94.0%
National Express East Coast	86.6%	88.2%	89.5%	90.5%	91.1%
CrossCountry	90.0%	90.2%	90.6%	90.9%	91.3%
East Midlands Trains	88.1%	88.7%	89.4%	89.9%	90.2%

A number of opportunities have been identified for modest infrastructure enhancements to improve performance that could be implemented in conjunction with planned renewal projects.

To meet ongoing freight growth and maintain and improve freight performance, particularly from the Hull port area, we have upgraded the line from Hesse Road Junction to the port. We are examining options for the provision of new or longer loops and shorter block sections between Hesse Road Junction and Gilberdyke Junction in conjunction with signal renewals proposed in CP5.

Some of the schemes required to deliver the HLOS peak capacity for Leeds will provide improved performance.

First Keolis TransPennine Express

First Keolis TransPennine Express currently operates the main cross Pennine routes centred on the Leeds and Sheffield to Manchester corridors together with services from Manchester to the North (including Scotland since December 2007). The performance of TPE is currently 90.2 percent PPM as at period 10 2008/09 and this should reach 91.7 percent PPM by the end of March 2010. Recent performance improvements have been driven by fleet improvements and a well managed JPIP process.

The key performance issues and opportunities for TPE have been identified as:

- the ability to maintain a high performing service connecting multiple key transport nodes each with a challenge for delivery in their own right and limited capacity for traffic growth
- a consequential need to focus on day to day delivery of good operational practice
- improvements from the remodelling of York Holgate Junction
- improvements from the remodelling of Church Fenton junction
- management of freight services
- real ability to manage the impact of the weather and drive down cable theft
- evaluation of line speed and route enhancements in the North West, between York and Northallerton and across the Pennines.

TPE and Network Rail are currently developing a full five year performance plan around these issues. At present the forecast is that TPE will achieve a PPM of 94.0 percent by the end of 2013/14 although this is not signed up to by them as being deliverable.

Northern Rail

Northern Rail operates the local train networks both into the major conurbations and across the more rural areas in the North of England. Its performance is currently 89.4 percent PPM as at period 10 2008/09 and should reach 90.1 percent by the end of March 2010. The franchise is extremely complex with a focus on cost management so that resources are efficiently used with little spare capacity for growth or recovery from incidents. Northern Rail recognises that there is a potential balance between aiming towards a high average performance and targeting a lower, but more consistently achieved level of performance with better use of capacity for passengers.

To meet growth in West and South Yorkshire and in conjunction with Northern Rail we are proposing to operate longer passenger services and on some routes additional peak passenger services. To reduce the performance risk of operating additional vehicles we are proposing to lengthen platforms, provide new platforms, additional turnback facilities and new stabling facilities in order to operate, maintain and stable these additional vehicles.

The key performance issues and opportunities for this TOC have been identified as:

- the ability to maintain a highly performing service connecting multiple key transport nodes each with a challenge for delivery in their own right and limited spare capacity for growth
- scope for growth in general and especially for services in the urban conurbations where there is low spare resource to deliver increased capacity from existing supplies
- the challenge of improving service delivery during disruption from the available resource base driving a preference for focus on incident avoidance
- taking ability to grow revenue across services, including community rail opportunities
- a consequential need to focus on detailed day to day delivery and good quality operating practice
- a complex mix of fleet some of which has an inherently low level of reliability. Opportunities to replace stock will be taken when they arise
- parallel scope for a significant improvement to the quality of the infrastructure over which Northern Rail operates services, including the need for these services to link into more dense operation around conurbations. Some of the TOC's key revenue flows are also within its worst performing service groups
- specific need to improve track quality
- real ability to manage the impact of weather and drive down cable theft
- getting the right balance between performance, journey time and capacity benefits from the enhancements planned on routes operated by Northern (e.g. York Holgate 4th track)
- driving delivery of smaller scale enhancements such as line speed improvements.

The other operators on this route are National Express East Coast and CrossCountry. The future performance section for the former can be found in the plan for Route 8 and CrossCountry in the plans for Routes 8, 12, 13, 17, 18, 19 and 20.

Network availability

In conjunction with our customers we have adopted a unique and special access arrangement for maintenance at Leeds station.

Maintenance and engineering access on the route between Thornhill LNW Junction and Heaton Lodge gives particular problems to TPE as the diversionary route via Bradford is much longer and is difficult to maintain route knowledge over.

Maintenance on this route and between Leeds and Skipton is just at a sustainable level and should not be eroded further.

Most of the key towns and cities in the Yorkshire and Humber region can be accessed by more than one route, so reasonable continuity of service can be provided during times of engineering work or perturbation, albeit with some journey time extension. This largely applies to key freight arteries, inter-regional and cross country passenger links. Comparable capability needs to be provided on diversionary routes, particularly in relation to gauge clearance. This work continues to be developed.

There are a few sections of route for which there is no reasonable diversionary route when cyclic maintenance, renewals or enhancement works are proposed. Options therefore need to be considered to provide a more flexible operational layout through a greater level of maintenance, renewal and enhancement efficiency. This may include the introduction of quicker / simpler processes for taking and withdrawing possessions, coupled with changes in working practices to facilitate Adjacent Line Open train operations and more efficient Single Line Working through infrastructure changes such as bi directional signalling. These are being examined as part of the Seven Day Railway initiative and will be taken account of for future timetable changes and in conjunction with any proposals for infrastructure changes. Such proposals will then be taken forward subject to a strong business case and funding priorities.

It is important that users of short distance services are not disproportionately affected in order to give priority to long distance services as a result of any changes to the maintenance regime or infrastructure.

Finally, West Yorkshire PTE has aspirations for later evening services on several routes. Significant demand will need to be generated on these services to cover both TOC and our operational costs.

Long term opportunities and challenges

Upon completion, the Yorkshire and Humber RUS will provide a strategy for future development of the cross Pennine and Yorkshire routes. The main strategic challenges answered by the RUS are the need to cater for increasing peak demand and to enhance the cross Pennines service between Leeds, Manchester and Liverpool via Huddersfield.

In the long term, if the growth rates predicted in the RUS continue, some lines will need existing services to be six, seven or eight coaches long. This would mean in practise a mixture of train lengthening and additional/alterd services. The most significant longer term constraint will be Leeds station. As trains become longer the ability to have several trains in any one platform at a time will become reduced. More radical options will be needed to meet growth in the Leeds area in CP6 which may include a mixture of remodelling the western approaches to Leeds, pushing more services through Leeds, four tracking east of Leeds, further electrification and tram-train on some routes.

The two year tram-train trial in Yorkshire planned to start in 2010 should help inform options for the future rail strategy for some rural and urban services in the medium to long term.

The Strategic Freight Network process and the Hutchinson Port (UK) Limited project will continue with gauge enhancement work to W9, W10 and W12 and will take into north Pennine route and diversionary requirements.

Infrastructure investment in CP4

Figure 17 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009-14	Ⓜ North Cross-Pennine Route Upgrade phase 1 cross route project – also see Route 20	Liverpool – Manchester – Leeds line speed and capacity increase	Increased capacity and improved performance and journey times	Periodic Review 2008	3
Ongoing	ⓔ Selby	Car park extensions	Improved customer facilities	Third Party	1
2010/11	Ⓚ Falsgrave	Remodelling as part of track and signalling renewal	Renewal and linespeed improvements	Network Rail Renewals	4
2010-13	Ⓜ Platform lengthening	Platform lengthening at various stations in West Yorkshire to cater for 4 car train length on some routes and 6 car train length on other routes	To accommodate HLOS passenger growth	Periodic Review 2008	3
2010/11	Ⓣ Harrogate Station Redevelopment	Redevelopment of station and upgrade of station facilities	Improved station facilities	Third Party	2
2010/11	Ⓝ Felixstowe – Yorkshire Terminals Gauge Clearance	Provision of W10 gauge via Ely and ECML plus some diversionary routes	Capability to carry deep sea containers on standard deck height wagons to Selby (Potter Group), Wakefield Europort and Stourton	Third Party	3
2010/11	Ⓡ Relocated Micklefield station	New station with a single turnback facility	Increased capacity, some new journey opportunities	Periodic Review 2008	3
2010/11	Ⓞ Kirkstall Forge and Apperley Bridge	New Stations	Increased capacity and new journey opportunities	Third Party	3
2010/11	Ⓥ Low Moor	New Station	Increased capacity and new journey opportunities	Third party	3
2010/11	Ⓟ Leeds station	Redevelopment of the station and new southern entrance	Improved station facilities, additional footfall capacity for HLOS passenger growth and improved access	Third party	4
2010/11	ⓐ Castleford additional platform	Reinstatement of platform on eastern side	Increased peak capacity	Periodic Review 2008	1
2011/12	Ⓞ Harrogate – Horsforth	Renewal of lineside signalling equipment and additional signal sections	Renewal and improved capacity to meet HLOS passenger growth and performance	Periodic Review 2008	3
2011/12	Ⓢ Route 10 stabling	Stabling for increased Northern Rail fleet	Increased capacity through fleet enlargement	Periodic Review 2008	3
2011/12	ⓕ Horsforth turnback facility	Provision of a turnback siding	Increased capacity to meet HLOS passenger growth and improved journey times through service changes	Periodic Review 2008	3
2011/12	ⓑ Knottingley West S&C	S&C Renewal	Renewal	Network Rail	2
2012/13	Ⓛ Haxby	New station	New journey opportunities	3 rd party	2
2012-14	ⓐ Whitley Bridge, Sudforth Lane & Hensall	Signal Interlocking Renewal	Renewal	Network Rail	3

Figure 17 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2013/14	Ⓔ Northern Gauge improvements	Gauge clearance of various routes in connection with port developments on the East Coast and northern intermodal terminals	To accommodate the carriage of deep sea container traffic and swapbodies	Subject to agreement	3
2013/14	⒫ Leeds	New bay platform/platform alterations	To meet HLOS passenger growth and improve capacity and performance in Leeds Station area	Periodic Review 2008	1
2013/14	Ⓓ Horsforth Woodside	New station	New journey opportunities and capacity improvements	Third Party	1
2014-15	⒱ Humber Ports capacity	Capacity improvements, may include loop extension or new loops between Gilberdyke and Selby	To allow ongoing growth of rail freight through Port of Hull	Transport Innovation Fund	1

NRDF candidate schemes in CP4

Figure 18 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓣ Shipley	Platform 5 linespeed increase	Improves performance and capacity	Network Rail Discretionary Fund	4
2011/12	Ⓢ Methley Jn	Junction remodelling	Improved performance and capacity	Network Rail Discretionary Fund	3
2010-14	ⓧ Hull – Selby line speed increases	Line speed improvements, standalone and in association with proposed signalling renewals	Improved journey times	Network Rail Discretionary Fund	1
2012/13	Ⓞ Calder Valley: Hall Royd Jn – Milner Royd Jn & Bradford –Halifax	Line speed increases	Improved capacity, performance and journey time improvements	Network Rail Discretionary Fund	1

Renewals activity

Figure 19 shows the estimated renewals costs and activity volumes.

The precise timing and scope of renewals will remain subject to review to enable us to meet our overall obligations as efficiently as possible, consistent with the reasonable requirements of operators and other stakeholders.

It should be noted that in order to manage the deliverability of our civils, signalling and electrification plans we have included an element of over planning in our work banks. As a consequence the sum of our route plans exceeds our plan for the network as a whole. It is likely that a small proportion of the activities in these areas will slip to subsequent years.

Figure 19 Summary of estimated renewals costs and activity volumes						
£m (2009/10 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	CP4 total
Renewals						
Track	13	30	26	31	33	132
Signalling	11	12	15	24	7	69
Civils	22	20	15	24	13	85
Operational property	8	8	9	12	6	44
Electrification	0	0	0	0	0	1
Telecoms	3	2	2	1	2	10
Plant and machinery	2	1	1	2	2	8
Total	58	74	68	85	63	348
Renewals volumes						
Track						
Rail (km)	29					
Sleeper (km)	26					
Ballast (km)	25					
S&C (equivalent units)	6					
Signalling						
SEUs (conventional)	0	39	24	91	0	154
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	2	10	14	0	26

Appendix

Figure 20 Strategic route sections												
Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability												
SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway (mins)	No of Tracks
10.01	Leeds – Holbeck West Jn	DOL2	Primary	DfT	No	W8	RA8/9	25 (40))	25kV	TCB	3 mins	2
10.02	Harrogate Line	HAY1/2	Rural	DfT	No	W6	RA8	60 (65)	None	Various	Various	2(1)
10.03	Leeds North West	TJC3	Secondary	DfT	No	W7	RA8	90 (25)	25kV	TCB	5 (6)	2(1)
10.04	Bradford Interchange Lines	LBE	Rural	DfT	No	W6	RA8 (RA6)	60	None	TCB	4 (11)	2
10.05	NTP: Holbeck East Jn – Stalybridge	MVL3/4/MDL1	Secondary	DfT	No	W8	RA9 (RA8)	70 (80/60)	None	TCB	4 (6 minutes through Standedge Tunnel)	2(3)
10.06	Leeds – Colton Jn	HUL4/CFM/NOG	Secondary	DfT	No	W8	RA8 (RA9)	90	None (25kV)	TCB	4 (3)	2
10.07	Hull – Micklefield Jn	HUL1/2/3	Secondary	DfT	No	W8 (W6)	RA8	90 (75)	None	AB (TCB)	5	2
10.08	Gilberdyke Jn – Thorne Jn and Knottingley West Jn plus Church Fenton Jn – Moorthorpe	TJG	Secondary	DfT	Yes	W8	RA8	70	None	AB (TCB)	4	2
10.09	Knottingley West Jn – Thornhill Jn (via Crofton Jn and via Castleford Jn) – Leeds West Jn	WAG/CPM	Secondary	DfT	No	W8 (W9)	RA8	60 (50/25)	None	TCB (AB)	5	2
10.10	Rochdale East Jn – Heaton Lodge Jn/Bradley Jn	MVN2	Secondary	DfT	No	W7/W8	RA9 (RA8)	60 (70)	None	AB (TCB)	6	2
10.11	Hull – Seamer	HBS	Rural	DfT	Yes	W6	RA6 (RA7)	70 (40)	None	Various	Various	2(1)

Figure 20 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability

SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway (mins)	No of Tracks
10.12	York – Scarborough	YMS	Rural	DfT	No	W6	RA8	90 (75)	None	AB (TCB)	8	2
10.13	Freight Through Branches	Various	Freight	DfT	No	W8 (W6)	RA8 (RA9)	Various	None	TCB (AB)	Various	2
10.14	Freight Branches	Various	Freight	DfT	No	W6/W8	Various	Various	None	Various	Various	1(2)

Capacity and operational constraints

A Harrogate – York: single-line and level crossings

B Horbury Jn: S&C and curvature

C Halifax: S&C and curvature

D Halifax – Bradley Junction: S&C and curvature

E Church Fenton – Moorthorpe: gradients, S&C and curvature

F Drax Branch Junction – Goole: single-line and level crossings

G Wakefield – Pontefract: level crossings and track geometry

H Leeds: S&C and curvature

I Huddersfield: S&C and curvature

J Marsden: curvature on approach to Standedge tunnel

K Selby: curvature at Swing Bridge

L York – Malton: curvature and level crossings

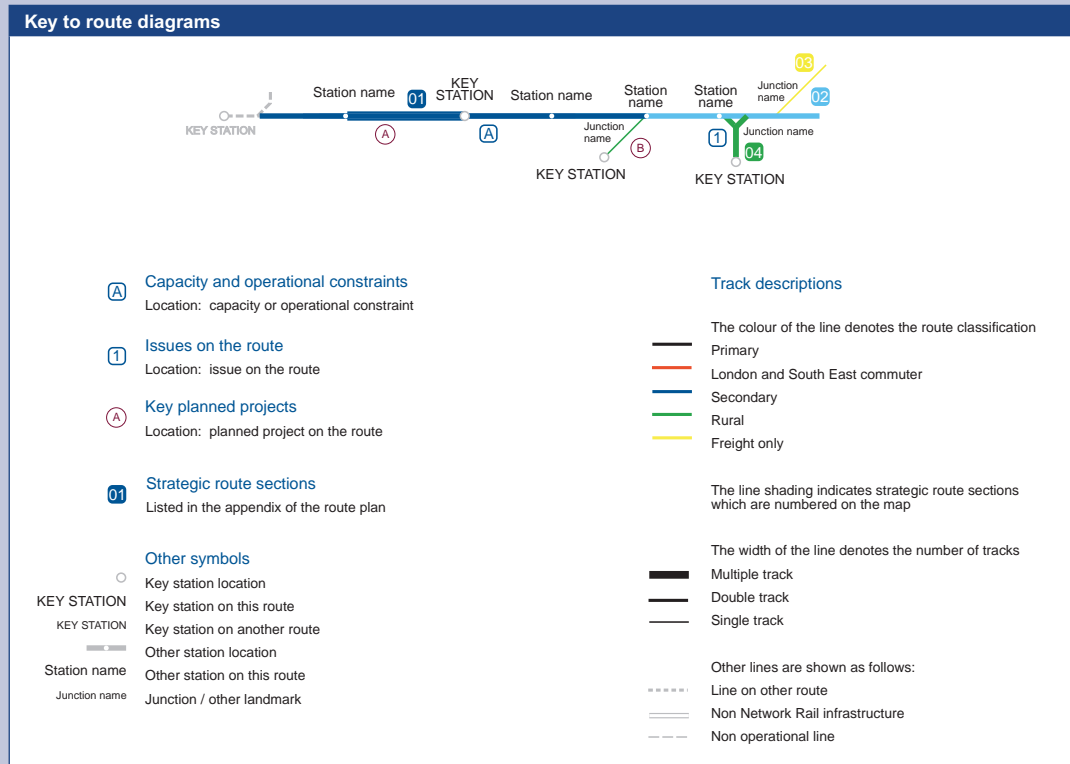
M Hull: curvature and S&C

N Goole Swing Bridge: load bearing capacity

Note

This Route Plan forms part of the Control Period 4 (CP4) Delivery Plan and supersedes the version published in April 2008.

Other documents in the Delivery Plan can be found on the Network Rail website www.networkrail.co.uk



GRIP stages

- 1 Output definition
- 2 Pre-feasibility
- 3 Option selection
- 4 Single option selection
- 5 Detailed design
- 6 Construction, test and commission
- 7 Scheme hand back
- 8 Project close out

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Network Rail
Kings Place
90 York Way
London N1 9AG
Tel: 020 3356 9595