Route Plans 2008

Route 10

North Trans-Pennine, North and West Yorkshire

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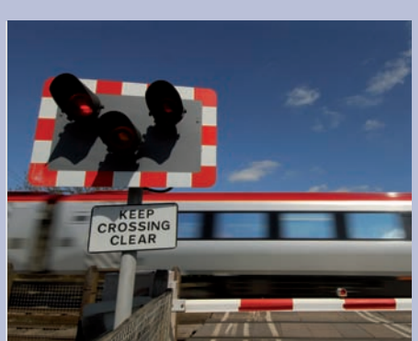
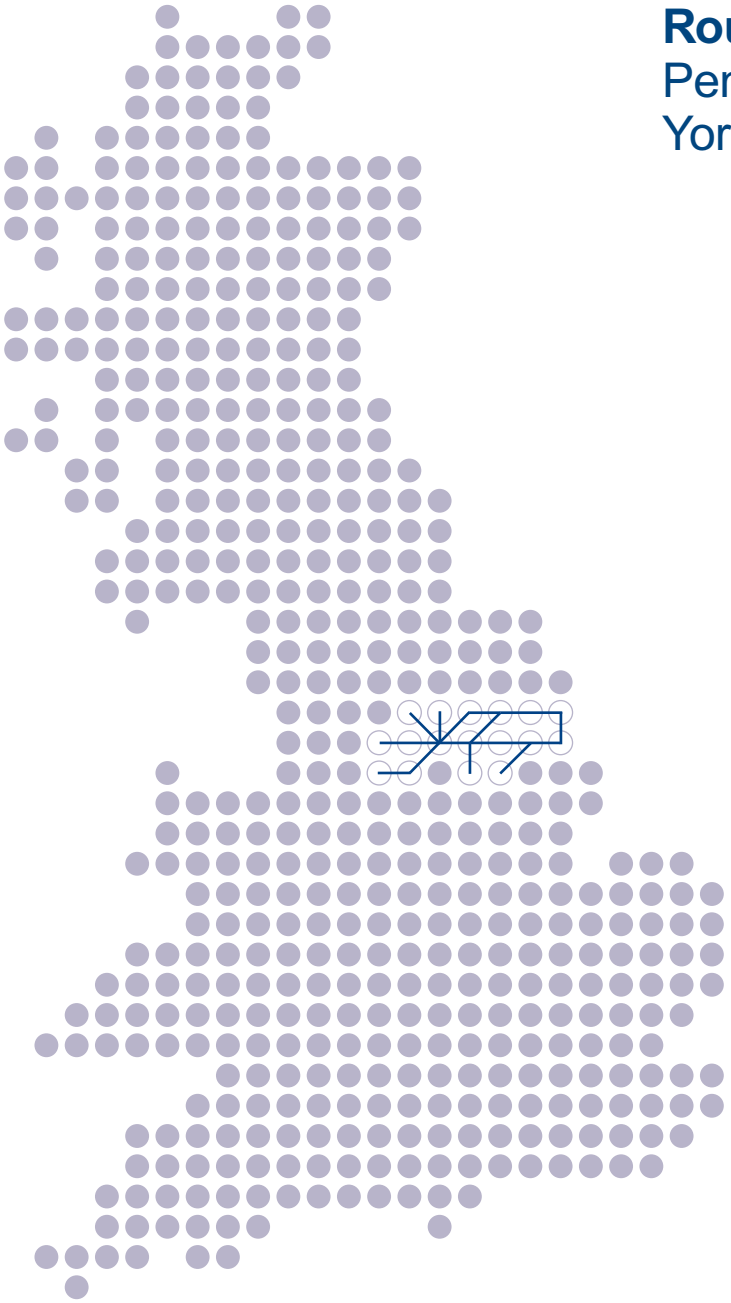




Route 10 North Trans-Pennine, North and West Yorkshire

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 underway 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.

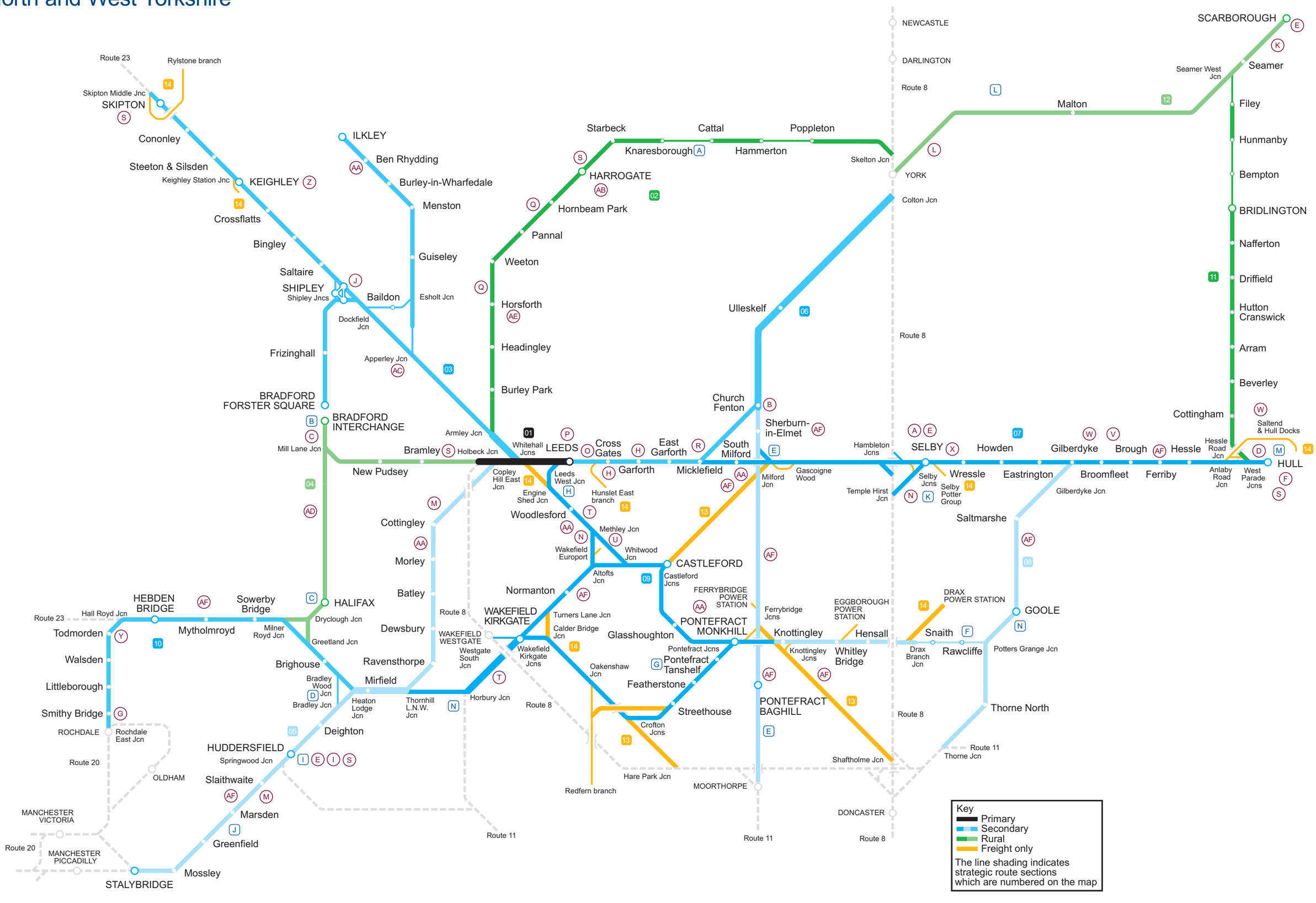
A community rail partnership covers the Wolds Coast and the Barton on Humber (Route 11) routes.

Today's route

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

- inter-urban – 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); and
- 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 Trans-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 and 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 (NXEC), Hull Trains, CrossCountry, East Midlands Trains and West Coast Railway Company operate passenger services on this route. Freight trains are operated by English Welsh & Scottish Railway, Freightliner, Freightliner Heavy Haul and GBRailfreight.

The core TPE operation is between Leeds and Manchester with four 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. From December 2007 there is an hourly Leeds to Hebden Bridge service via Dewsbury and Brighouse. 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 an hourly semi-fast service to Sheffield via Wakefield Kirkgate and Barnsley.

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. There are also trains roughly every hour between York and Selby with half of these extending to/from Hull.

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.

Other long distance passenger trains are operated by CrossCountry who provide an integrated network that links virtually all the GB nations and regions. Long distance services operate between Aberdeen and Penzance, Manchester and Bournemouth, Nottingham and Cardiff, and Birmingham and Stansted. On this route the pattern of service is 1 tph between Edinburgh, Birmingham and the South or South West. These operate via Wakefield, Leeds and York and form part of the Birmingham to Leeds corridor which is one of the busiest parts of the CrossCountry network.

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	6 peak/5 off peak
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

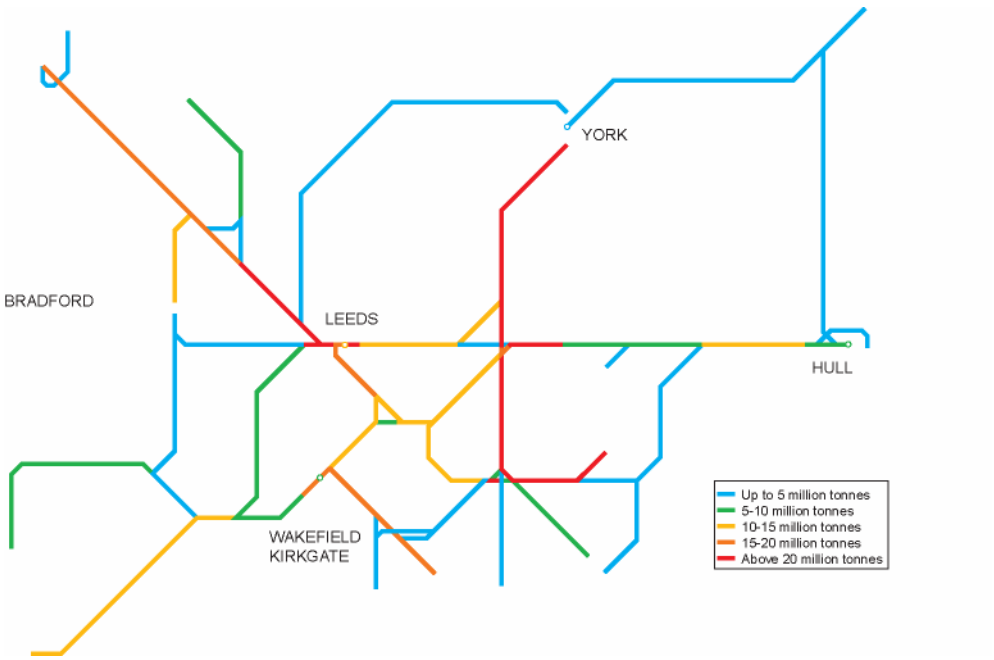


Figure 2 shows the total annual tonnage levels on the route.

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 4 Linespeed

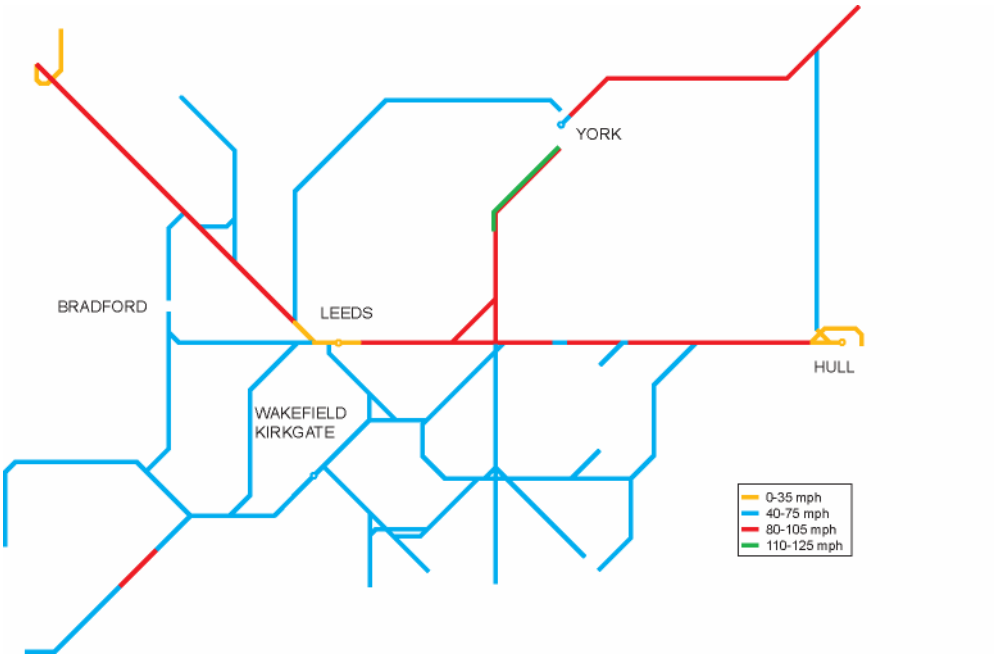


Figure 5 Electrification

Figure 6 Route availability

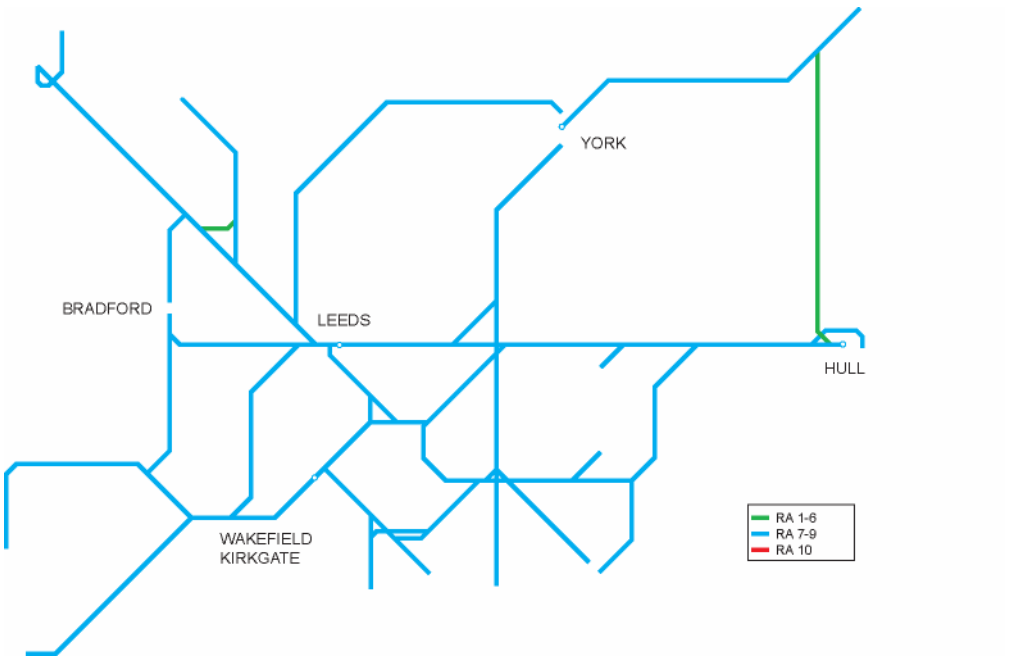
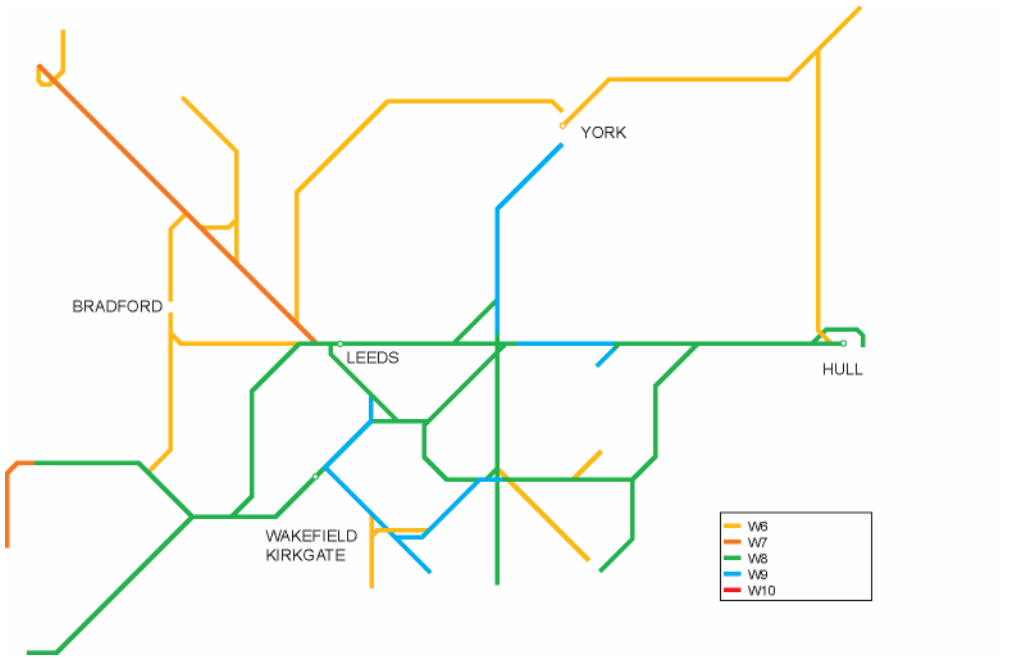


Figure 7 Gauge



Current capacity

There are capacity issues on the route, particularly in the Leeds area.

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 services;
- Hull to Gilberdyke; another two track railway with a variety of traffics; and
- Hull Docks branch; partly single track using the unusual Divisible Train Staff method of operation.

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

Current performance

Figure 9 shows the current 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.

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

Route Section	Number of trains
Neville Hill – Micklefield	9
Wortley Junction – Apperley Junction	9
Bradley Wood Junction – Huddersfield	8
Gilberdyke – Hessle Road Junction	6

Figure 9 Current PPM MAA (2007/08)

TOC	MAA	As at period
CrossCountry	86.9%	12
National Express East Coast	82.5%	12
East Midlands Trains	87.1%	12
Northern Rail	88.4%	12
TransPennine Express	91.7%	12

Section 2: Tomorrow's railway

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

Route	Annual passenger km forecast in 2008/09 (millions)	Additional passenger km to be accommodated by 2013/14 (millions)
North Trans-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

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 already being stimulated further by the introduction of new Class 185 units, which offer improved passenger comfort and have been able to offer some improved journey times.

Significant freight growth is expected once the scheme to upgrade the Hull Docks branch is implemented.

Section 3: Proposed 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
2009-2011	Phased programme of train lengthening on most routes	Platform extensions and additional stabling and servicing depot facilities	Increased capacity to meet HLOS peak capacity metric
2011/12	Revised service pattern on Calder Valley route	Enhanced infrastructure at Bradford Interchange, Rochdale, Todmorden and Hebden Bridge	Increased capacity to meet HLOS peak capacity metric, improved journey times and new/improved journey opportunities
2011/12	Revised service pattern in Castleford area	Possible small enhancement in Castleford area	Increased capacity to meet HLOS peak capacity metric and improved journey opportunities
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
2011/12	Revised service patterns on routes where train lengthening is not the best solution to meet growth	Turnback facility at Keighley, additional platform at Huddersfield, enhanced signalling on the Harrogate line and possibly East Leeds Parkway new station	Increased capacity to meet HLOS peak capacity metric

Strategic direction

Work on the Yorkshire and Humber RUS is progressing. 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.

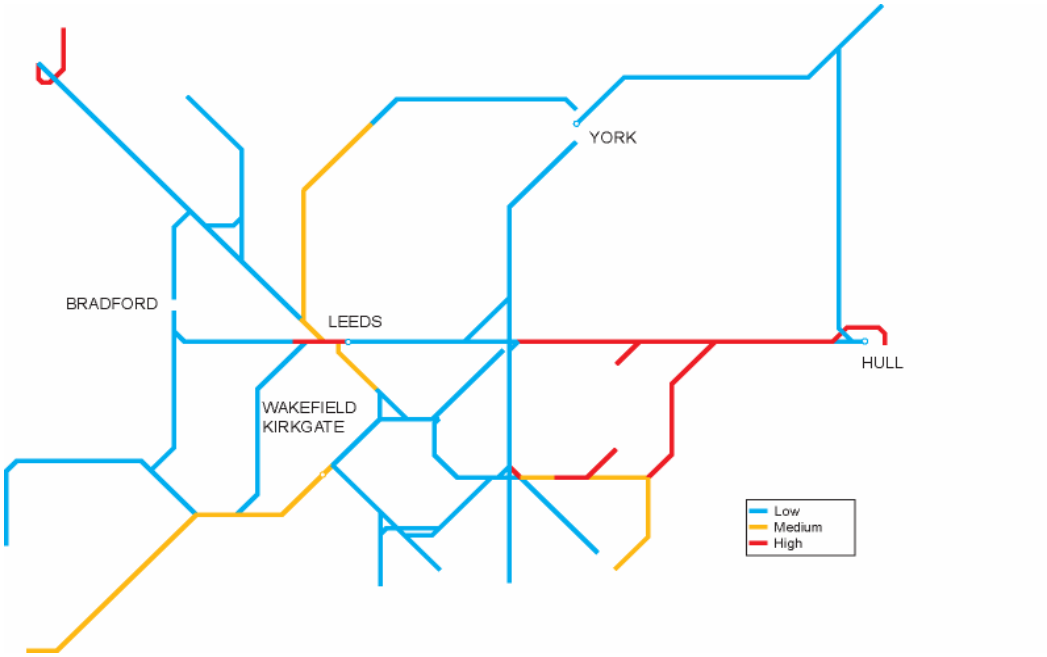
In the short to medium term much of the peak growth will be met through train lengthening as it will be in other parts of the country. However, there are some routes where lengthening is not feasible or where the additional rolling stock required for lengthening could be better used by providing a revised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

Meeting growth on the Huddersfield – Leeds – York/Selby corridor and platform capacity at Leeds will be particular challenges. New ways to serve the intermediate stations on the above corridor need to be considered and also ways to avoid some services terminating at Leeds so that additional bay platform capacity is available for the remaining (lengthened) services.

Enhancement of the Leeds – Manchester – Liverpool services is another key area for the RUS to examine 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.

Improvements to the Leeds – Sheffield and Calder Valley services are further key areas for the RUS to examine.

Figure 13 Tonnage growth



Future train service proposals

Figure 13 indicates the forecast percentage change in tonnage to 2017.

A number of train service changes will occur from the start of the December 2008 timetable. The first is a new hourly Nottingham – Sheffield – Barnsley – Leeds service to be operated by Northern Rail. Not only will this create new direct journey opportunities but it will also provide a third fast train per hour between Sheffield and Leeds.

The new CrossCountry franchise will also provide an increase in capacity on its most crowded services which should provide some growth capacity on certain peak hour flows to/from Leeds, particularly on the Wakefield and York lines.

Open access operator Grand Central has aspirations to run six trains per day each way between Bradford and London King's Cross via Halifax and Wakefield Kirkgate. It also wishes to run four trains each way per day between Bradford and London Euston via Halifax, Huddersfield and Stockport.

In order to meet the peak hour growth targets in the HLOS, around 40 additional vehicle arrivals will be required at Leeds. These will be provided by a mixture of additional capacity in agreed franchise changes and additional vehicles. On the majority of routes the latter would be deployed by lengthening existing services thereby making best use of track capacity and train crews.

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. A solution is to provide a turnback facility at Keighley which will allow some new peak hour services between Keighley and Leeds. In turn this would allow some Skipton services to run fast between Keighley and Leeds (possibly calling at Bingley) thereby spreading peak loads and also providing improved journey times for many commuters.

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.

Meeting growth on the Huddersfield – Leeds – York/Selby corridor and platform capacity at Leeds will be particular challenges. New ways to serve the intermediate stations will be considered in the RUS to avoid some services terminating at Leeds so that additional bay platform capacity is available for the remaining (lengthened) services.

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 is a first step. Two fast passenger services per hour and two stopping passenger services between Leeds/Bradford and Manchester are being examined as part of 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 Todmorden and Rochdale. It is proposed one of the above services would serve Leeds via Brighouse. 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 servicing and stabling depots are required. These would provide fuelling, cleaning (including exterior washing) and toilet servicing.

Such depots on this route are likely to be in the Leeds station area and at Harrogate, Skipton, Huddersfield and Hull. We will work with Northern Rail to identify the exact requirements for each location.

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. Train lengthening on some Leeds North West services is still being examined in the RUS. There are a few stations where SDO will be used.

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

Improving line speed on the Sheffield – Barnsley – Leeds corridor would help balance the journey times between Sheffield and Leeds on this route and 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); and
- 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.

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; and
- 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.

We are looking at solutions to improve the safety of the Woodlesford level crossing near Leeds.

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 is required to avoid station congestion. The development work on this project since the October SBP has shown that the HLOS peak

capacity metric gives rise to footfall capacity issues so the scheme has now been included for funding through the Period Review for 2008.

Phase 1 of the proposed North Trans-Pennine Upgrade may need to provide some improved capacity on the Leeds – Huddersfield – Stalybridge corridor in order to allow faster 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 examining running high capacity peak hour shuttles between Huddersfield and Leeds East parkway and/or York. An additional platform will be required at Huddersfield 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. The layout for East Leeds Parkway includes a centre turnback facility.

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. This analysis was not available for the October SBP hence the addition of several Leeds area schemes in this document.

The only remaining land in the immediate Leeds station area that could provide some capacity relief is the car park area adjoining platforms 1 and the former locomotive holding sidings beyond platform 17. The RUS is examining the opportunity for bay platforms on these. The former area would provide increased capacity on the Harrogate line and Leeds North West services while the latter would assist with the Castleford 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. A further turnback at Todmorden would assist with providing peak hour capacity into Manchester.

The Todmorden turnback could allow some Leeds to Manchester Victoria services to be speeded up by taking out certain intermediate calls. 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 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 may require an additional platform and associated pointwork and signalling. We will work with the PTE and Northern Rail to determine what is required through the RUS process. The service changes could provide the necessary capacity on the Castleford to Leeds corridor to meet the HLOS capacity metric.

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. One issue that would need to be resolved is how best to serve South Milford station. The RUS will examine this further, particularly in relation to dealing with peak growth as described in a previous paragraph.

Two new stations are proposed at Kirstall Forge and Apperley. Whilst these require additional vehicles to operate the services, the revised service pattern is expected to improve performance.

To help meet peak HLOS growth requirements on the Leeds to Skipton route there is a need to operate additional services. A new turnback facility at Keighley is required to help meet the demand and to effectively deploy resources.

Figure 14 Forecast PPM MAA - CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
Northern Rail	90.5%	91.0%	91.5%	91.9%	92.2%
TransPennine Express	92.8%	93.3%	93.7%	94.0%	94.2%
National Express East Coast	86.8%	88.4%	89.5%	90.5%	91.1%
CrossCountry	87.9%	88.7%	89.7%	90.4%	90.9%
East Midlands Trains	88.3%	89.1%	89.9%	90.4%	90.8%

Figure 15 Forecast PPM MAA - proposed local commitments

	2009/10	2010/11	2011/12	2012/13	2013/14
Northern Rail	89.9%	90.4%	90.9%	91.3%	91.6%
TransPennine Express	92.2%	92.6%	93.1%	93.4%	93.6%
National Express East Coast	85.2%	86.7%	87.9%	88.9%	89.5%
CrossCountry	86.7%	87.4%	88.4%	89.1%	89.7%
East Midlands Trains	87.2%	88.0%	88.9%	89.4%	89.8%

Future performance

Figure 14 sets out the planned PPM for each train operator. Figure 15 sets out the trajectory we propose as local commitments with each operator. These are lower than planned given the need for flexibility in achieving the HLOS targets and to reflect the greater uncertainty and risk associated with projecting performance at a disaggregated level. Reasonable requirements will finally be established for CP4 in our 2009 Business Plan.

Network Rail is managing a number of initiatives, involving considerable resources, to combat the huge rise in cable theft incidents. Driving down cable theft will provide performance benefits.

A number of opportunities have been identified for modest infrastructure enhancements to improve performance that could be implemented in conjunction with planned renewal projects, whilst improved access and egress at Neville Hill depot is being developed to improve the regulation of trains in the Leeds east area.

To meet ongoing freight growth and maintain and improve freight performance particularly from the Hull port area we are upgrading the line to the port and are examining options for the provision of new or longer loops between the port and the power stations.

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 91.7 percent PPM and this should reach 92.5 percent PPM by the end of March 2009. 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;
- uncertainty over the impact of the December 2008 West Coast timetable change especially around the southern approaches to Manchester;
- improvements from the remodelling of York Holgate Junction;
- management of freight services;
- real ability to manage the impact of the weather and drive down cable theft; and
- evaluation of line speed and route enhancements in the North West, between York and Northallerton and across the Pennines.

TPE and Network Rail are looking forward to developing a full five year performance plan around these issues during the Summer. At present the forecast is that TPE will achieve a PPM of 94.2 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 88.4 percent PPM and should reach 90.0 percent by the end of March 2009. 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 satellite maintenance depots 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 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 incomplete scope for infrastructure enhancements and 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 need to ensure these services 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; and
- 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); and 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.

Engineering access

West Yorkshire PTE has aspirations for later evening services on a number of routes. The RUS will examine where Rules of the Route is a constraint.

We would like to explore with our customers ways to improve access for maintenance, particularly between Leeds, Woodlesford and Altofts, Leeds to Neville Hill, Leeds to Skipton and Heaton Lodge to Thornhill. On the latter two routes, maintenance is just at a sustainable level and should not be eroded further.

Possessions between Thornhill LNW Junction and Heaton Lodge give particular problems to TPE as the diversionary route via Bradford is much longer and is difficult to maintain route knowledge over.

The above issues will be examined as part of the 7 day railway initiative.

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

Long term opportunities and challenges

Work on the Yorkshire and Humber RUS is progressing. This will provide a strategy for future development of the cross-Pennine and Yorkshire routes. The main strategic challenges to be answered by the RUS are 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/altered 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. The RUS will probably need to examine some radical solutions.

Enhancements to be completed by end of CP3

Figure 16 CP3 enhancements

Implementation date	Project	Project description	Output change	Funder	GRIP stage
2008/09	Ⓐ Selby Platform 3 extension	Allow 5-car operation of terminating services	Increased capacity and improved performance	Network Rail Discretionary Fund	2
2008/09	Ⓑ Church Fenton S&C enhancement element	Linespeed increase	Increased capacity and performance and improved engineering access	Network Rail Discretionary Fund	4
2008/09	Ⓒ Bradford Mill Lane S&C . enhancement element	Revised layout.	Increased capacity and performance, and improved journey times	Network Rail Discretionary Fund	8
2008/09	Ⓓ Hull station	Upgrade carriage sidings	Improved stabling facilities	Third Party	1
2008/09	Ⓕ Hull Docks	Increase track capacity between Hessle Road and the docks	Improved capacity, performance and route capability	Third Party	8
2008/09	Ⓖ Platform extension at Smithy Bridge and Mills Hill	Platform extension to accommodate 4x23m vehicles	To accommodate commuter growth on Calder Valley services	Network Rail Discretionary Fund	8
2008/09	Ⓗ Platform extension at Crossgates and Garforth	Platform extension to accommodate 6 car class 185 trains	To accommodate commuter growth	Network Rail Discretionary Fund	8

Proposed enhancements in CP4

Figure 17 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2010/11	(K) Falsgrave	Remodelling as part of track and signalling renewal	Renewal and linespeed improvements	Network Rail Renewals	4
ongoing	(E) Selby, Scarborough, Huddersfield	Car park extensions	Improved customer facilities	Third Party	1
2009/10	(Y) Todmorden	Turnback facility	To accommodate HLOS passenger growth	Periodic Review 2008	3
2009/10	(P) Leeds Station Automatic ticket barriers	Provision of new ticket gates at Leeds Station	Improved customer access and revenue protection	Third Party	8
2010/11	(AA) Platform lengthening	Platform lengthening at various stations in West Yorkshire to cater for 4 car train length	To accommodate HLOS passenger growth	Periodic Review 2008	3
2009-14	(M) North TransPennine 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	1
2010/11	(AB) Harrogate Station Redevelopment	Redevelopment of station and upgrade of station facilities	Improved station facilities	Third Party	2
2010/11	(N) 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	(R) East Leeds Parkway (Micklefield)	New parkway station close to A1/M1 link road	New journey opportunities and increased capacity	Periodic Review 2008	1
2010/11	(AC) Kirkstall Forge and Apperley Bridge	New Stations	Increased capacity and new journey opportunities	Third Party	3

Figure 17 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2010/11	(AD) Low Moor	New Station	Increased capacity and new journey opportunities	Third party	3
2010/11	(P) Leeds station	Redevelopment of the station and new southern entrance	Improved station facilities, additional footfall capacity for HLOS passenger growth and improved access	Periodic Review 2008/Third party	3
2011/12	(Q) 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	1
2011/12	(S) Route 10 Depots	Servicing and stabling depots for increased Northern Rail fleet	Increased capacity through fleet enlargement	Periodic Review 2008	1
2011/12	(AE) 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	1
2012/13	(Z) Keighley turnback facility	Introduces a turnback platform or siding.	Increased capacity and improved journey times through service changes	Periodic Review 2008	1
2012/13	(AA) Ilkley – Leeds	Platform lengthening to cater for 6 car train lengths	To accommodate HLOS passenger growth	Periodic Review 2008	1
2013/14	(AF) 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	(P) Leeds	New bay Platforms	To meet HLOS passenger growth and improve capacity and performance in Leeds Station area	Periodic Review 2008	1
2013/14	(I) Huddersfield	New Platform 9	Increased capacity to meet HLOS growth	Periodic Review 2008	1

Figure 17 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
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
2011/12	Ⓐ Horsforth Woodside	New Station	New journey opportunities and capacity improvements	Third Party	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	3
2009/10	Ⓛ York – Scarborough	Linespeed increases	Improved journey times	Network Rail Discretionary Fund	1
2010/11	Ⓞ Neville Hill Depot performance improvements	Improved access/egress to Neville Hill Depot	Improved performance and regulation of trains in the Leeds to Neville Hill area	Network Rail Discretionary Fund	1
2011/12	Ⓤ Methley Jn	Junction remodelling	Improved performance and capacity	Network Rail Discretionary Fund	1
2012-14	Ⓣ Sheffield - Leeds line speed increases.	Linespeed increases via Barnsley on Routes 10 and 11.	Increased capacity and improved performance and journey times.	Network Rail Discretionary Fund	1
2013-15	Ⓥ Hull – Gilberdyke	Enhancement in connection with resignalling	4 aspect colour light signalling to improve capacity	Network Rail Discretionary Fund	1
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	ⒶⒻ Hall Royd Jn – Milner Royd Jn	Line speed increases	Improved capacity, performance and journey time improvements	Network Rail Discretionary Fund	1

Maintenance and renewals activity

Figure 19 shows the estimated maintenance and renewal 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 maintenance & renewals costs and activity volumes

£m (2006/07 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	Control Period Totals CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	22	20	19	19	18	98	85	79	81
Signalling	7	7	7	7	6	34	30	29	29
Electrification	1	1	1	0	0	3	2	2	2
Telecoms	3	3	3	3	3	14	12	11	11
Plant and Machinery	1	1	1	1	1	3	3	2	2
Other (overheads / indirect)	17	17	16	16	16	83	74	71	71
Total	**51**	**48**	**46**	**45**	**44**	**234**	**207**	**196**	**198**
Renewals									
Track	33	35	33	33	33	167	150	93	84
Signalling	14	18	19	17	18	86	76	148	43
Civils	21	17	18	15	16	87	70	68	67
Operational Property	9	7	10	8	8	43	38	37	37
Electrification	1	1	1	1	1	3	1	2	4
Telecoms	13	12	7	5	2	39	14	12	17
Plant and Machinery	5	3	2	2	3	15	16	15	17
Total	**95**	**94**	**90**	**82**	**81**	**441**	**366**	**375**	**269**
Renewals Volumes									
Rail (KM)	43	42	42	42	42	211	185	78	82
Sleepers (KM)	40	40	40	40	40	201	216	159	169
Ballast (KM)	34	34	34	34	34	170	208	151	161
S&C Units	11	25	23	28	30	117	109	87	63
SEUs commissioned	0	62	21	0	86	169	195	644	278

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/MD L1	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/ NOC	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

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
10.09	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)
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)

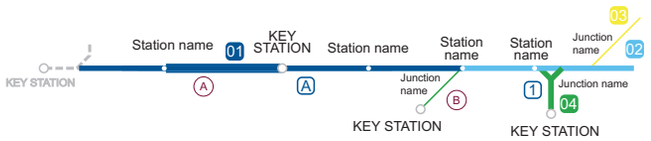
Capacity and operational constraints
A Harrogate – York: single-line and level crossings
B Bradford Interchange: S&C and curvature
C Halifax: S&C and curvature
D Halifax – Bradley Junction: S&C and curvature
E Church Fenton – Moorthorpe: gradients, S&C and curvature
F Drax Branch Junction – Goole: single-line 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
N Horbury Jn S&C and curvature

Note

This Route Plan forms part of the April 2008 update of Network Rail's Strategic Business Plan. The Route Plan supersedes the version published on 1 November 2007.

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

Key to route diagrams



Capacity and operational constraints
A — Location: capacity or operational constraint

Issues on the route
1 — Location: issue on the route

Key planned projects
A — Location: planned project on the route

Strategic route sections
01 — Listed in the appendix of the route plan

Other symbols
- Key station location
- KEY STATION — Key station on this route
- KEY STATION — Key station on another route
- Other station location
- Station name — Other station on this route
- Junction name — Junction / other landmark

Track descriptions

The colour of the line denotes the route classification
- Primary
- London and South East commuter
- Secondary
- Rural
- Freight only

The line shading indicates strategic route sections which are numbered on the map

The width of the line denotes the number of tracks
- Multiple track
- Double track
- Single track

Other lines are shown as follows:
- Line on other route
- Non Network Rail infrastructure
- Non operational line

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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