

Route Plans 2008
Route 11
South Trans-Pennine,
South Yorkshire
and Lincolnshire



**Delivering
for you**

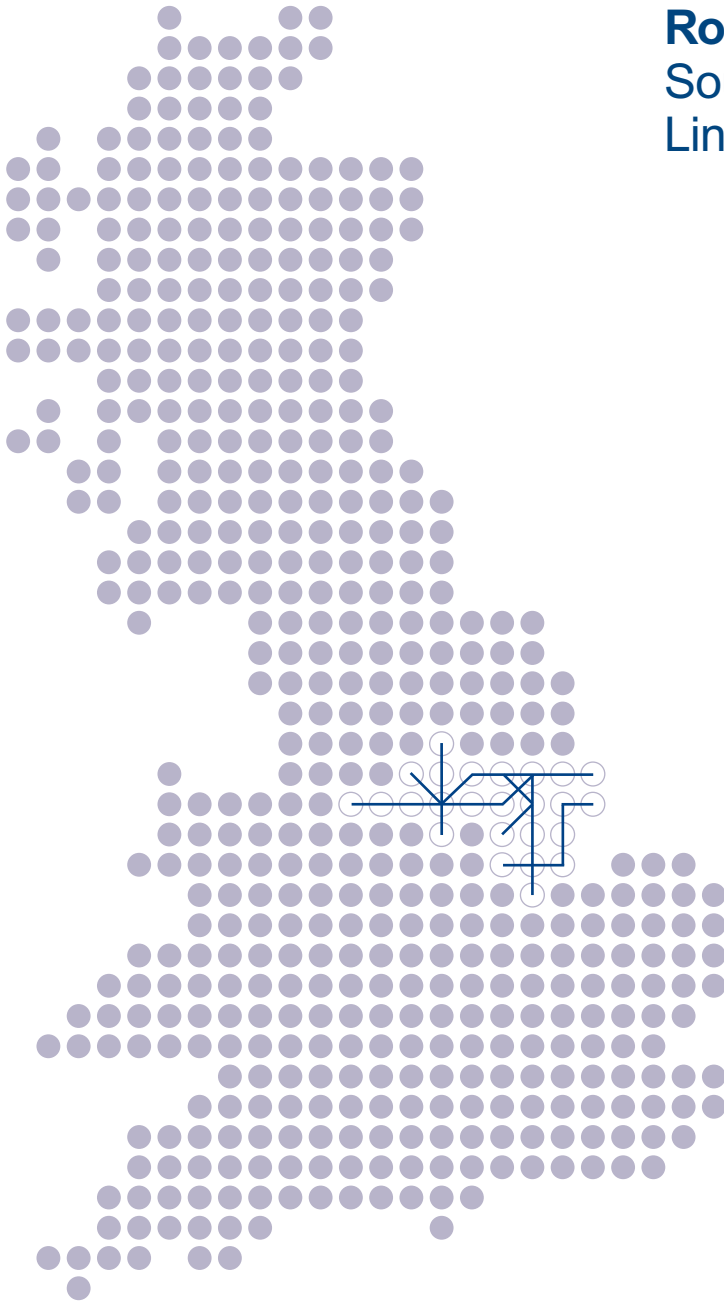


Network Rail helps bring the country together. We own, operate and maintain Britain's rail network, increasingly delivering improved standards of safety, reliability and efficiency. Our investment programme to enhance and modernise the network is the most ambitious it has ever been. Delivering a 21st century railway for our customers and society at large.

Every day. Everywhere.



Route 11 South Trans-Pennine, South Yorkshire and Lincolnshire



Section 1: Today's railway

Route context

This route traverses the Pennines through the Hope Valley, linking Manchester and Stockport to Sheffield, and extends through Doncaster to Scunthorpe, Grimsby and Cleethorpes. The route also provides links to the ports on the south bank of the Humber which generate significant volumes of rail freight. It provides links to the South Yorkshire conurbation and to the communities in Lincolnshire. It also carries a significant volume of freight traffic in connection with the steelworks at Scunthorpe and provides access to the lower Trent Valley power stations.

The route largely parallels a number of major cross-Pennine roads and along the south bank of the Humber estuary.

Work is underway on the Yorkshire and Humber Route Utilisation Strategy (RUS), an industry study led by Network Rail covering this route and Route 10. The DfT has published its Regional Planning Assessment for the Yorkshire and Humber Region which feeds into the RUS.

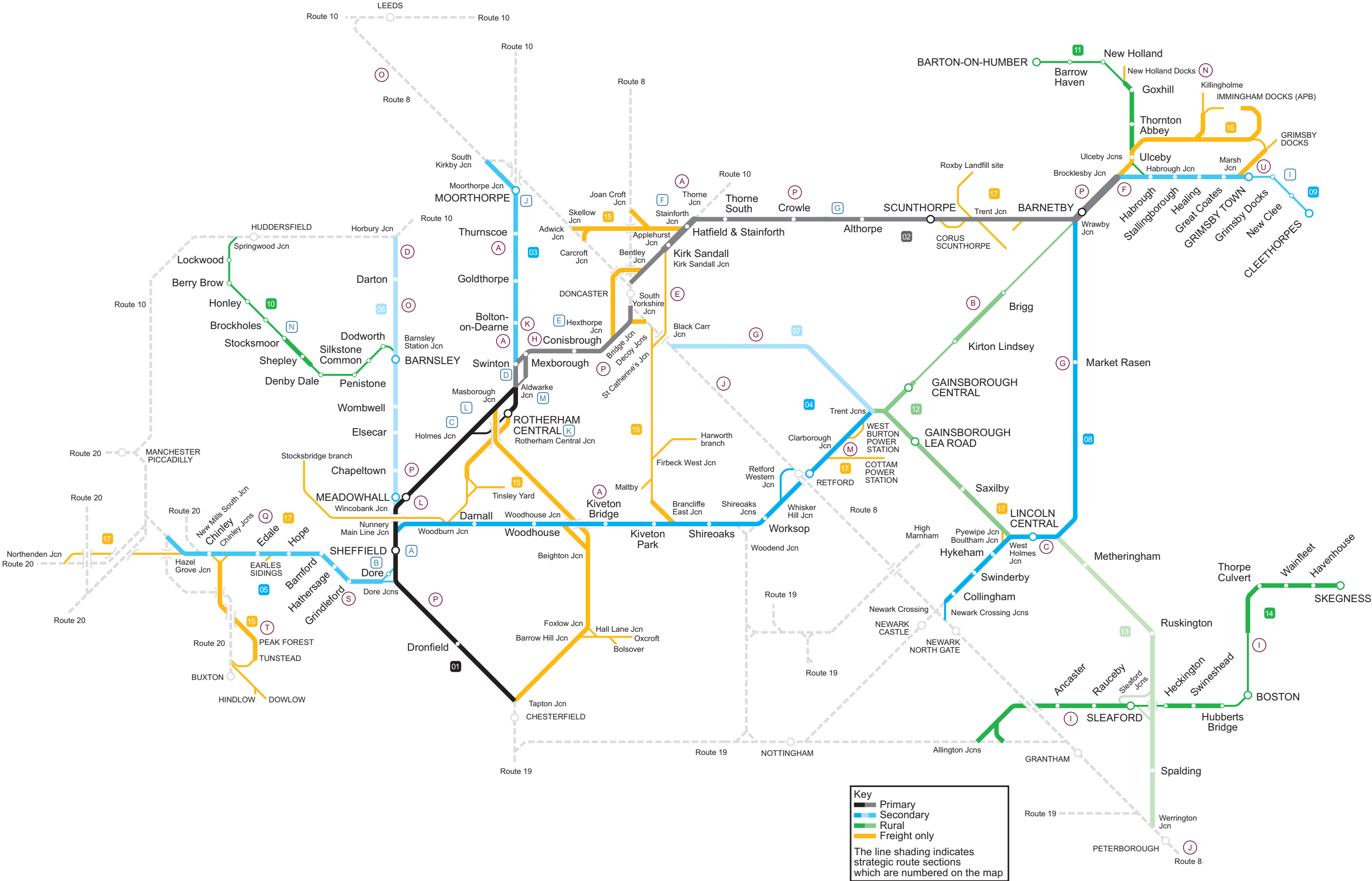
The Barnsley to Huddersfield line is a designated community railway led by a community rail partnership. The Grantham to Skegness line has a community rail partnership and services are designated as community rail services. A further community rail partnership covers the Barton on Humber and Wolds Coast (Route 10) routes.

Today's route

The principal components of this route are described below. The relevant Strategic Route Section is shown in brackets:

- the Hope Valley – the line between Stockport and Dore (11.05);
- South Yorkshire network – extends from Chesterfield to Doncaster, Moorthorpe, the Barnsley area and Kiveton. It includes some primarily freight through routes (11.01, part of 11.02, 11.03, 11.04, 11.06, 11.10 and parts of 11.15 and 11.17);
- South Humberside main line – from Doncaster to the east coast towns of Grimsby and Cleethorpes along with the ports on the south bank of the Humber (parts of 11.02, 11.09, 11.11, 11.16 and parts of 11.17); and
- Lincolnshire and Nottinghamshire lines – including the Kiveton to Barnetby line via Worksop, Doncaster – Lincoln – Sleaford – Peterborough, Barnetby – Lincoln – Newark and the Grantham to Skegness line. (11.07, 11.08, 11.12, 11.13, 11.14 and parts of 11.15 and 11.17).

Route 11 South Trans-Pennine, South Yorkshire and Lincolnshire



Current passenger and freight demand

Four distinct passenger markets are served by the route. The first is for cross-country journeys linking eastern Scotland, the North East, Yorkshire, the North West, Lincolnshire, the Midlands, East Anglia and the South West. The second is the initial portion of journeys between locations on the route and London either by direct services or by changing on to long distance services.

The third market is for local journeys within South Yorkshire, most of which are supported by South Yorkshire PTE. Finally, this route provides local journeys in rural areas to the east of the East Coast Main Line. These offer valuable links, for example schools traffic, and access to resorts such as Skegness and Cleethorpes.

The route is heavily used by freight with some of the highest freight tonnage movements in the country operating on the south bank of the Humber between Immingham, Scunthorpe and Doncaster. In excess of sixty freight trains operate each way per day on the core section between Brocklesby and Wrawby Junction. The main traffics are:

- imported coal for power stations;
- imported coking coal for the steelworks at Scunthorpe;
- imported iron-ore for Scunthorpe steelworks;
- steel products to/from Scunthorpe steelworks; and
- oil products from Lindsay and Conoco refineries to various distribution depots.

Another section with significant freight flows is the Moorthorpe/Doncaster – Rotherham – Beighton – Chesterfield axis which sees considerable amounts of through freight traffic between the North East and the Yorkshire & Humber region, and the Midlands and South West.

The freight only South Yorkshire Joint Line from Doncaster to the Worksop area is also a key freight line which carries coal traffic from various locations in the Yorkshire and Humber region, the North East and Scotland to the lower Trent Valley power stations and in the opposite direction from the East Midlands coalfield to the Aire Valley power stations.

The Hope Valley line carries considerable aggregates traffic from the Peak District quarries and traffic connected with Hope cement works.

Current services

Passenger services are provided on this route by Northern Rail, First Keolis TransPennine Express (TPE), East Midlands Trains and CrossCountry. English Welsh & Scottish Railway, Freightliner, Freightliner Heavy Haul and GB Railfreight operate the freight trains.

Sheffield is a key interchange for long distance services. The majority of East Midlands Trains services from St. Pancras International terminate here.

Other longer distance passenger trains are operated by CrossCountry who provide an integrated network that links virtually all the UK's 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 2tph between Newcastle and Birmingham with one of these running to/from Bristol, and the other extending to Edinburgh and the South or South West. These operate via Chesterfield, Sheffield, and Doncaster/Moorthorpe. Those via Moorthorpe form part of the Birmingham to Leeds corridor which is one of the busiest on the CrossCountry network.

East Midland Trains also runs a long distance service from Liverpool, via the Hope Valley and Sheffield, to East Anglia via Nottingham on an hourly basis. TPE operates on the opposite half hour through the Hope Valley, from Manchester Airport, via Sheffield and Doncaster, to Cleethorpes.

A number of PTE sponsored hourly stopping services, operated by Northern Rail, link Sheffield to Lincoln via Worksop, Leeds via Barnsley, Leeds via Moorthorpe, and Huddersfield via Barnsley.

A half hourly stopping service to Doncaster extends alternately to Scunthorpe and Adwick, and approximately every two hours there is a stopping service through the Hope Valley to Manchester. Hourly semi-fast services link Sheffield and Hull via Doncaster, and Leeds via Barnsley.

In Lincolnshire, East Midlands Trains operates hourly services from Leicester to Lincoln via Nottingham. East Midlands Trains also operate an hourly service between Nottingham and Skegness and approximately hourly service between Lincoln and Peterborough via Sleaford and Spalding. This latter service is split into two services, Lincoln to Sleaford and Spalding to Peterborough for part of the day due to limited route opening times.

Figure 1 Sheffield – current train service level (trains per hour)

Originating Station	tph to Sheffield
Chesterfield	3
Manchester (fast services)	2
Barnsley	3
Lincoln	1
Worksop	2 peak/1 off peak
Doncaster	6 peak/5 off peak

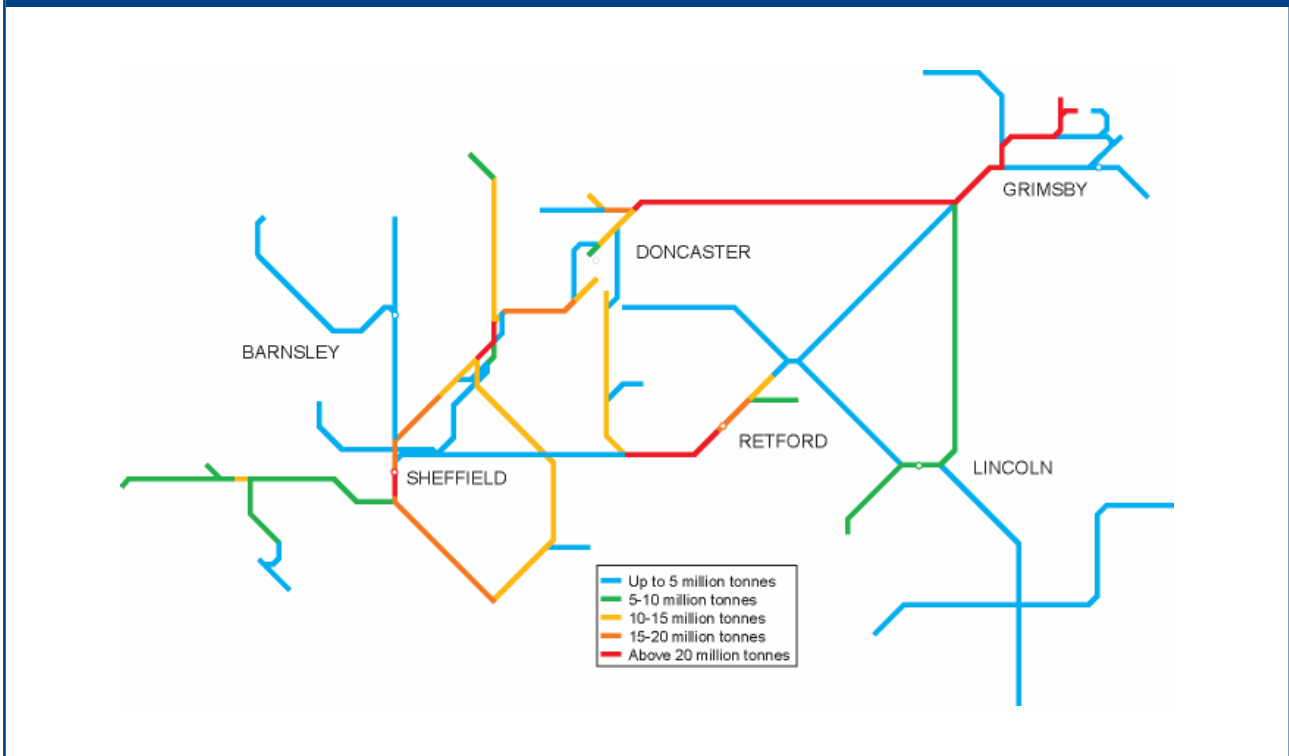
An approximately two hourly service operates on the route from Grimsby to Lincoln with most services extended to Newark North Gate. A limited service runs between Doncaster and Lincoln via Gainsborough (Lea Road) and a two hourly Northern Rail shuttle service operates between Cleethorpes and Barton-on-Humber.

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

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

Traffic volumes are summarised in Figure 3.

Freight services are described in the previous section.

Figure 2 Tonnage**Figure 3** Current use

	Passenger	Freight	Total
Train km per year (millions)	12	5	17
Train tonne km per year (millions)	1,455	5,405	6,861

Current infrastructure capability

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

Figure 4 Linespeed

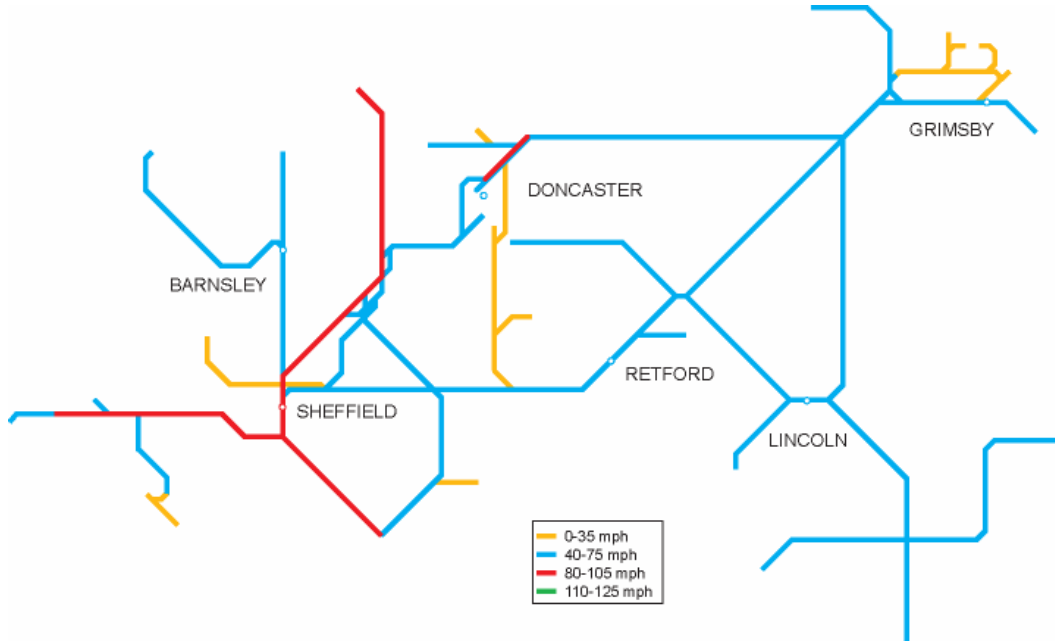
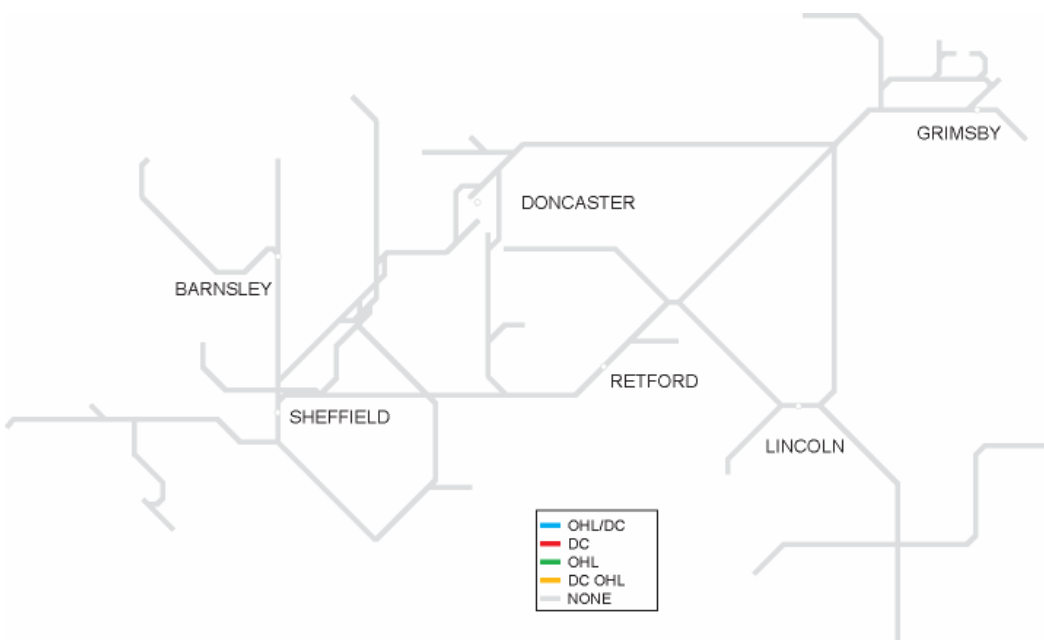
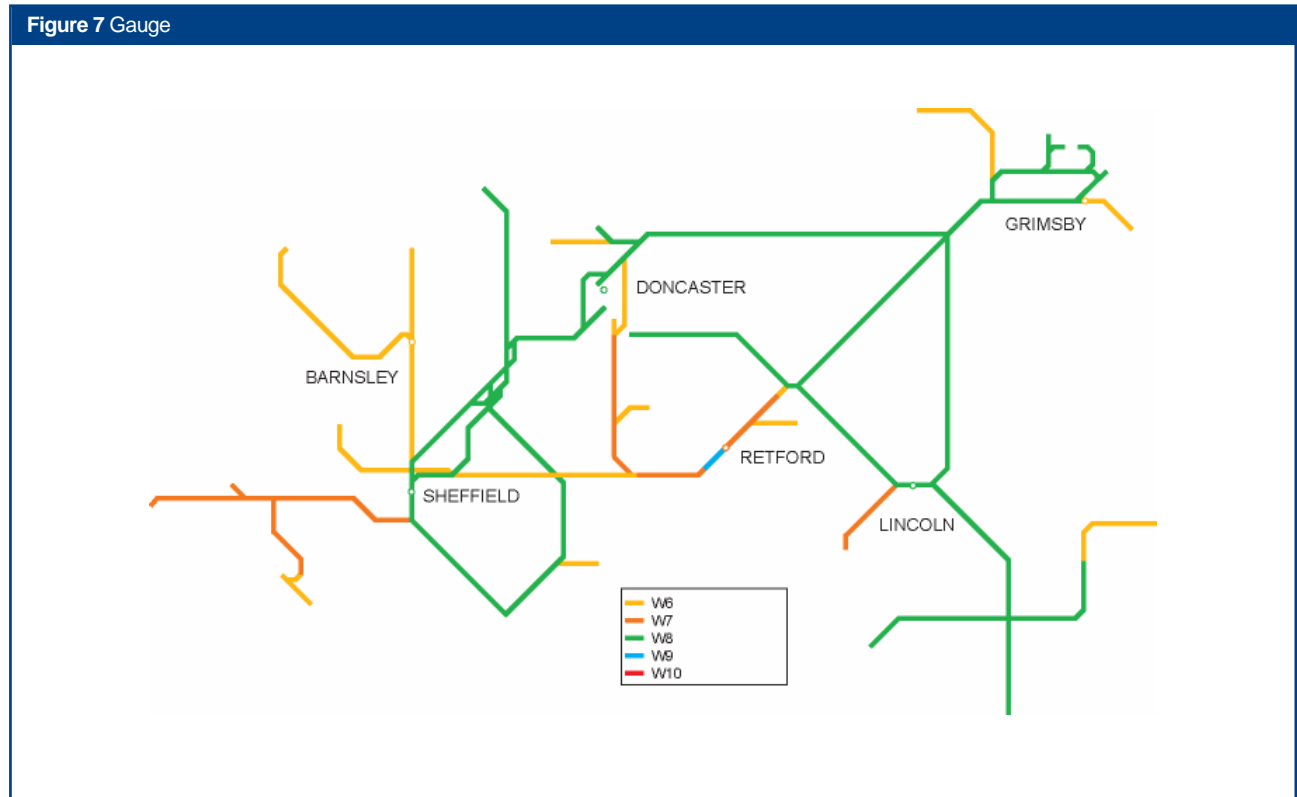
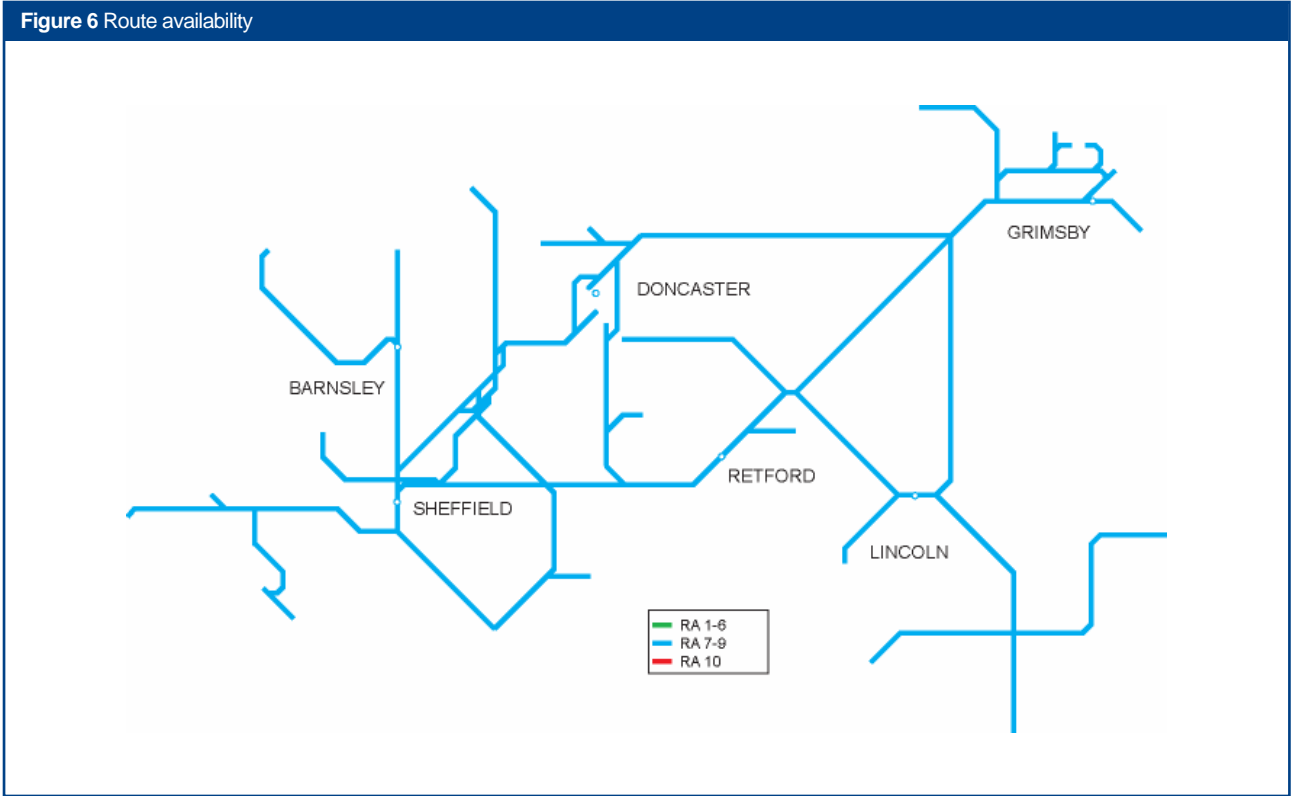


Figure 5 Electrification





Current capacity

The main section of the route with significantly high volumes of traffic and major capacity constraints is the Chesterfield – Sheffield – Moorthorpe/Doncaster corridor. It features eight flat junctions (excluding Sheffield station itself) within a 13 mile stretch between Dore South Jn and Swinton Jn. The infrastructure is at or near capacity on many hours and presents difficulties for the timetabling of services through the area, some of which run over considerable distances.

Other sections that are significantly capacity constrained and therefore also have an adverse affect on performance are as below:

- Immingham – Brocklesby – Wrawby Junction – Scunthorpe: primarily driven by large freight tonnages out of Immingham and other south Humber ports;
- Doncaster – Maltby – Brancliffe East Junction: large volumes of local and through coal traffic operating through a low speed route with single line sections; and
- Hope Valley: mix of fast long distance and slower stopping passenger trains and freight services in connection with the Peak Forest quarries;

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

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

Route Section	Goods Line	Main Lines
Brocklesby Junction – Barnetby (westbound)	2	5
Brocklesby Junction – Barnetby (eastbound)		7
Marshgate Junction – Kirk Sandall Junction		6
Swinton – Aldwarke Junction		12
Sheffield – Meadowhall		9
Sheffield – Dore Station Junction		8

Figure 9 Current PPM MAA (2007/08)

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

Current performance

Figure 9 shows the current PPM for the main TOCs running along the route.

On the Chesterfield – Sheffield – Moorthorpe/Doncaster axis, the mix of fast and stopping passenger trains and freight services presents the major challenge to performance. The infrastructure operates at or near capacity and some of the services run over considerable distances. This means that in times of perturbation any lateness in longer distance trains is either exacerbated in the Sheffield area or other services are delayed.

The line from Immingham and Cleethorpes to Doncaster has a large number of temporary speed restrictions which have a significant effect on performance.

Various sections of the route are suffering from a considerable increase in cable theft which is having a major impact on train performance.

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)
South Trans-Pennine, South Yorkshire and Lincolnshire	741	113

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 (%)
Sheffield#		13% increase on 2008/09	41		16% increase on 2008/09	46

Note #: included in aggregate target across a number of regional hubs

Future demand

The number of urban and regional journeys into the major conurbations is expected to continue growing. In particular, demand growth on the Manchester-Sheffield-Cleethorpes corridor is being further stimulated by the introduction of new class 185 units which offer improved passenger comfort and some improved journey times. These units offer an increase in the number of seats provided on this service.

The main pressure on local services will be on peak services to and from Sheffield as roads in South Yorkshire become more congested and economic growth continues.

Passenger growth in the Sheffield area is forecast to grow by up to 45 percent over the next 10 years.

Freight growth is expected to be associated mainly with further growth at the port of Immingham and flows passing through between the North East and the Midlands. There will also be further aggregates traffic out of the Peak District.

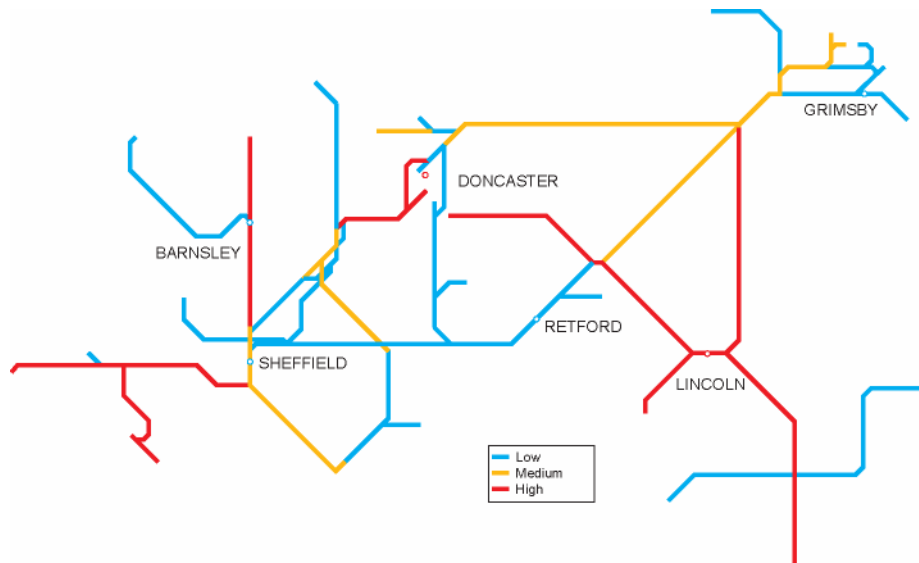
Section 3: Proposed strategy

The table below summaries 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	Train lengthening for regional services serving Sheffield	Platform extensions and additional stabling and servicing depot facilities	Increased capacity for HLOS peak metrics at Sheffield and Leeds
2010-2012	Improved journey times between Sheffield and London St Pancras	Line speed improvements on Route 19	Reduced journey times
2012/13	Improved journey times on Hope Valley route	Line speed improvements	Reduced journey times
2012-2014	Improved journey times on Barnsley route	Line speed improvements	Reduced journey times, increased capacity and improved performance and engineering access
2013/14	W10 gauge enhancement from Newark to Doncaster via Swinderby and Gainsborough	Structures and trackworks	Capability to carry deep sea containers on standard deck height wagons. Provides additional capacity when East Coast Main Line cannot carry W10 traffic.

Figure 13 Tonnage growth



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 peak demand.

Other than as described below in changes to services starting in the December 2008 timetable, in the short to medium term much of the peak growth will be met through train lengthening as it will be largely in other parts of the country. However, there are some routes where a revised service pattern may provide a better option for the use of the additional rolling stock than train lengthening.

Possible enhancement of the Sheffield – Leeds and Sheffield – Manchester services are further key areas which will be examined by the RUS.

Journey times between Sheffield and London St Pancras are proposed to be reduced both through line speed improvements on Route 19 and service enhancement through the new East Midlands Trains franchise. This will allow this route between the Sheffield city region and London to provide journey times which are more comparable with the East Coast Main Line.

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 services to be operated by Northern Rail. Not only will this create new direct journey opportunities but will largely overcome expected peak crowding on the Chesterfield – Sheffield – Barnsley corridor. 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 Sheffield, particularly on the Chesterfield line.

The other franchise with a significant service change is that operated by East Midlands Trains. The effect on capacity for commuter flows to/from Sheffield is still being examined. The two flows where the current long trains provide high capacity for commuter journeys are on the Doncaster and Chesterfield lines.

In order to meet the peak hour growth targets in the HLOS, around 40 additional vehicles will be required at Sheffield. These will be provided by a mixture of additional capacity in agreed franchise changes and additional vehicles. The latter would be deployed by lengthening existing services

thereby making best use of track capacity and train crews.

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 primarily 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 depots are required. These would provide fuelling, cleaning (including exterior washing) and toilet servicing.

Such depots on this route would be in the Sheffield area and possibly at Doncaster. We will work with Northern to identify suitable locations.

The Sheffield – Barnsley – Huddersfield line has been chosen for the national trial of tram-train.

In the short to medium term the only significant additional service aspiration is to provide at least an hourly service to serve the proposed Robin Hood Airport Doncaster Sheffield. Options to deliver this will be considered in more detail in the RUS.

Future capability

Platform lengthening is required on the Hope Valley route from Manchester to Sheffield (though some SDO may be appropriate), on routes between Sheffield and Leeds (via both Moorthorpe and Barnsley), between Sheffield and Scunthorpe/Adwick and between Sheffield and Lincoln. This will enable peak hour train lengthening of up to four 23m vehicles to address peak growth and crowding in CP4 and beyond.

Train lengthening in South Yorkshire may give rise to platforming problems as the bay platforms at Sheffield and Doncaster are only short. Lengthening these platforms would require the station layout to be extensively remodelled.

With support from South Yorkshire PTE, Northern Rail and other stakeholders, we are working with Peel Holdings to address their planning commitment to provide a new station at Robin Hood Airport Doncaster Sheffield.

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. This will enable both to be used more effectively to provide a service between these key cities (including when the Moorthorpe route is blocked). The speed improvements may help South Yorkshire PTE's aspiration to reinstate off-peak calls at Elsecar.

Nottinghamshire County Council is keen to improve the Nottingham to Lincoln route so that it competes better with the parallel A46 road and has asked us to undertake some development work on line speed increases.

Provision of W10 gauge will permit the carriage of 9' 6" containers on the route between Newark, Gainsborough and Doncaster in connection with the port developments at Felixstowe and Bathside Bay. This will accommodate the carriage of deep sea container traffic as a second route to the ECML between Newark and Doncaster, and in addition will provide capacity and diversionary opportunities.

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.

Modest speed improvements on some rural routes would give longer turnrounds 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 which may require some funding from NRDF.

We are examining options to replace the station barrow level crossing with an overbridge at both Moorthorpe and Bolton-on-Deerne in order to improve the safe operation of the railway.

In the Lincoln area we are planning to modernise the level crossings at Collingham and Swinderby Road and reduce the status of the level crossing at Cross Lane to a brideway level crossing in 2011/12.

Future capacity

We are upgrading the Wrawby Junction to Brigg and Gainsborough rail route to enable the regular operation of freight services. Its use is targeted at coal trains from Immingham to the lower Trent Valley power stations which will then provide some additional capacity on the Market Rasen and Lincoln – Gainsborough routes. In addition, this will provide a suitable diversionary route for freight traffic and permit better engineering access between Wrawby Junction and Doncaster via Scunthorpe.

Our renewals of signalling and track at Lincoln (2007-09) will provide a more flexible layout which will improve capacity in the station area.

In the Barnetby to Wrawby Junction area, the proposed enhancement, following a number of asset renewals in the area, aims to allow higher line speeds including raising Wrawby Junction to 50 mph operation (currently 30mph). The first step has seen the installation of higher speed S&C at Wrawby Junction but current line speeds will need to apply until resignalling takes place, currently proposed for 2012/13, although this may be rephased to meet ERTMS timescales.

We are looking at options to provide additional capacity between Wrawby Junction and the Immingham area with a number of stakeholders.

The proposed increase in frequency of train services between Sheffield and Leeds via Barnsley through operation of the Nottingham – Leeds service requires additional line capacity in the Woolley area. We are developing options with Northern Rail and DfT to address this.

Any infrastructure enhancements required in order to operate more services north of Sheffield will be looked at in more detail in the RUS.

Further traffic increases south of Sheffield, or the possible avoidance of pathing time in existing services that may require revised paths in the future, would require enhancements in the Dore area. There was a former SRA scheme for this but at the time its business case could only be built on performance benefits and it did not generate sufficient benefits. Other realisable benefits will be needed for it to become viable including opportunities to link Dore Junction remodelling work with a resignalling scheme in this area proposed in 2014/15. We are reviewing further options for this scheme with South Yorkshire PTE and it will be examined as an option in the RUS.

Freight traffic increases may require enhancements in the Grindleford and Peak Forest areas. This may

help facilitate any increases in passenger services between Sheffield and Manchester by regulating freight and passenger trains thereby improving route capacity and performance.

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. In some cases the services covered by the franchises will change; this means that the forecast PPM figures are not directly comparable with the current PPM figures.

Heavy maintenance, track renewals and bridge works over the next five years will target the removal of Temporary Speed Restrictions between Doncaster and Wrawby Junction.

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.

The capacity enhancement schemes above should help to improve performance and the recent conversion of the loop at Sheffield Brightside from goods to passenger traffic will give some improved operational flexibility during times of perturbation.

Where significant track renewals take place, Network Rail will examine where line speeds can be raised without alteration to other assets, which will then provide some performance benefit.

To meet ongoing freight growth and maintain and improve freight performance particularly from the

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%
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%
CrossCountry	86.7%	87.4%	88.4%	89.1%	89.7%
East Midlands Trains	87.2%	88.0%	88.9%	89.4%	89.8%

Humber ports we are upgrading the Brigg line, are modifying the track layout within the ports complex and are examining options for the provision of new or longer loops between the ports and the power stations.

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 challenges for delivery in their own right and limited spare capacity for growth;
- scope for growth in general and especially for services in the 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 the 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 management 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.

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;
- 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 and across the Pennines.

TPE and Network Rail are looking forward to developing a full 5 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.

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

Engineering access

There is a need to improve access on midweek nights for cyclical maintenance between Wrawby Junction and Doncaster. The upgrade of the Brigg line should help facilitate this, by allowing diversion of trains from the Scunthorpe line. This route is one of the first for examination as part of the 7-Day Railway initiative.

We would like to explore with our customers ways to improve access for maintenance between Dore, Chinley and Stockport on midweek nights from 5hr 30min to 7hrs, four nights per week every six weeks. However, operators would like to run more trains but are prevented from doing so by the existing possession arrangements.

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 challenge to be answered by the RUS in the longer term is to continue to cater for increasing peak demand.

Other particular longer term challenges on this route are:

- delivering capacity and performance increases on the Chesterfield – Sheffield – Moorthorpe/Doncaster corridor;
- enhancing interurban links between Leeds and Sheffield; and
- improving the interurban links between South Yorkshire and the North West whilst accommodating increased freight traffic from terminals in the Hope Valley.

The Manchester Hub study may provide options to improve links between the regional centres of Manchester and Sheffield. Any scheme to emerge is likely to be implemented around a ten year timeframe.

In the longer term much of the peak growth can still be met through train lengthening as it will be in many other parts of the country. However, the current station layouts at Sheffield and Doncaster will be the constraining factors.

Enhancements to be completed by end of CP3

Figure 16 CP3 enhancements

Implementation date	Project	Project description	Output change	Funder	GRIP stage
2008	ⓑ Brigg line upgrade	Upgrade of various asset types to allow regular operation of freight services	Reduced freight journey times, increased capacity and improved performance and engineering access	Network Rail Discretionary Fund	7
2008/09	ⓒ Lincoln enhancement element	Renewal of S&C, resignalling and providing a modified layout	Renewal with improved capability, capacity and performance	Network Rail	7
2008/09	ⓓ Woolley	Recontrol of signalling and shortening block section	Capacity improvements	Network Rail	3
2008/09	ⓔ South Yorkshire Joint Line	Resignalling and linespeed increase	Performance and capacity improvements	Network Rail Discretionary Fund	1

Proposed enhancements in CP4

Figure 17 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
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	Third party	4
2010/11	Ⓚ Bolton on Dearne and Moorthorpe	Level crossing closures	Improved safety and capacity	Network Rail	4
2011/12	Ⓛ South Yorkshire Depots	Servicing depots for increased Northern Rail fleet	Increased capacity through fleet enlargement	Periodic Review 2008	1
2011/12	Ⓐ Platform lengthening	Platform lengthening at various stations in South Yorkshire	Increased capacity	Periodic Review 2008	3
2011/12	Ⓜ Cottam Chord	New freight chord	Allows direct access from the port of Immingham to Cottam Power station, thereby improving operational efficiency, route performance and capacity	Third Party	1
2013/14	Ⓝ Humber Ports capacity (various)	Capacity improvements on the south bank of the Humber including possible construction of a new railway to provide a circuit between Ulceby and the Immingham HIT Terminal	Improved capacity and performance	Transport Innovation Fund/Third party	1
2013/14	Ⓟ Northern gauge improvements	Gauge clearance of the South Humberside route to the ECML, Midlands and North West	To accommodate the carriage of deep sea container traffic from the south bank Humber ports	Subject to agreement	3

NRDF candidate schemes in CP4

Figure 18 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓣ Grimsby – Barnetby	Linespeed increase	Improved journey times	Network Rail Discretionary Fund	1
2009/10	Ⓞ Market Rasen and Haxey	Linespeed increase	Improved journey times	Network Rail Discretionary Fund	1
2009/10	Ⓜ Conisbrough tunnel	Linespeed increase	Improved journey times	Network Rail Discretionary Fund	1
2009/10	Ⓛ Grantham – Boston – Skegness	Linespeed increase	Improved journey times	Network Rail Discretionary Fund	1
2010-2014	Ⓞ Hope Valley line speed increase.	Line speed increases for all trains (currently Sprinter differential)	Journey time improvements for non-sprinter services	Network Rail Discretionary Fund	1
2010	Ⓞ Hope Valley platform lengthening.	Platform lengthening at various Hope Valley stations	Increased 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
2013/14	Ⓞ Grindleford Loop	Provision of new loop	Improved regulation and performance on the Manchester to Sheffield route	Network Rail Discretionary Fund	1
2014	Ⓛ Peak Forest S & C	New facing cross over from the main line to the siding	Provides direct access and avoids the need to shunt, thereby improving capacity and performance benefits	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	20	18	19	99	87	84	84
Signalling	7	6	6	6	6	31	28	27	27
Electrification	0	0	0	0	0	0	0	0	0
Telecoms	3	3	3	3	3	15	14	13	13
Plant and Machinery	0	0	0	0	0	2	2	2	2
Other (overheads / indirect)	21	20	20	19	19	99	89	86	86
Total	54	51	49	47	47	247	220	212	211
Renewals									
Track	44	44	39	37	37	202	136	113	84
Signalling	12	28	24	17	15	96	61	94	157
Civils	17	17	16	16	15	81	72	69	68
Operational Property	6	6	6	6	6	31	29	29	29
Electrification	0	0	0	0	0	0	0	0	0
Telecoms	16	16	8	5	1	47	20	14	23
Plant and Machinery	4	3	2	2	2	13	13	12	14
Total	100	114	95	83	77	469	333	331	375
Renewals Volumes									
Rail (KM)	38	39	38	38	39	193	249	127	95
Sleepers (KM)	55	55	55	55	55	276	148	177	136
Ballast (KM)	54	54	54	54	54	272	169	211	170
S&C Units	27	32	22	22	25	128	86	62	45
SEUs commissioned	0	0	184	0	5	189	206	307	888

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
11.01	Chesterfield – Swinton (via Sheffield)	TJC1/2/3/H CD/WME	Primary	DfT	No	W8(9/6)	8 (10)	90 (15)	None	TCB	4	2
11.02	Swinton – Brocklesby Jn	SJM1/2/PE D5/DOW/M AC3	Primary	DfT	No	W8	8	55 (40/30)	None	TCB(AB)	4	2(3/4)
11.03	South Kirkby Jn – Swinton	SMJ1/2/ SKM	Secondary	DfT	No	W8	RA8 (RA9)	80 (50/60)	None	TCB?	4	2
11.04	Nunnery Main Line Jn – Trent Jns	MAC3/WH R/NUJ1/2	Secondary	DfT	No	W8 (W6)	RA8	60 (25)	None	TCB	5	2(1)
11.05	STP: Dore Jns – Hazel Grove Jn	MAS/NMC	Secondary	DfT	No	W7 (W6)	8	90 (50/30)	None	AB(TCB)	7	2
11.06	Wincobank Jn – Horbury Jn	CHS/BAH2/ SHB	Secondary	DfT	No	W6	RA7	60 (70)	None	TCB(AB)	5	2
11.07	Black Carr Jn – Trent Jns	BCB/ SPD4/5	Secondary	DfT	No	W8	8	60 (70)	None	AB(TCB)	4	2
11.08	Newark – Wrawby Jn	NOB1/2/3	Secondary	DfT	No	W8	8	60 (75/30)	None	AB	6 (8)	2
11.09	Brocklesby Jn – Cleethorpes	MAC3	Secondary	DfT	No	W8 (W6)	RA8	60 (40/30)	None	AB(TCB)	4	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
11.10	Penistone Line	PED1/2/PEH	Rural	DfT	Yes	W6	8	50 (30)	None	OTW(AB)	19	1(2)
11.11	Barton-on-Humber Branch	BAR	Rural	DfT	Yes	W6	RA8	60 (40)	None	AB(TB)	Single line	2(1)
11.12	Gainsborough Lines	MAC3/SPD3/BHP	Rural	DfT	No	W8	RA8	60 (25)	None	AB(TB)	Various	2(1)
11.13	Lincoln – Werrington Jn	WEB/SPD	Rural	DfT	Yes	W8 (W6)	RA8	60 (55)	None	AB	Various	2(1)
11.14	Skegness – Grantham	GRS1/2/3	Rural	DfT	Yes	W8 (W6)	RA8 (RA7)	60 (50/20)	None	AB(OTW)	10	2(1)
11.15	Freight Through Routes	Various	Freight	DfT	No	Various	Various	Various	None	Various	Various	2(1)
11.16	Immingham and Killingholme Docks	KIL1/2/INW	Freight	DfT	No	W8	8	25 (10)	None	Various	6	2(1)
11.17	Other Freight Branches	Various	Freight	DfT	No	Various	Various	Various	None	Various	Various	1(2)

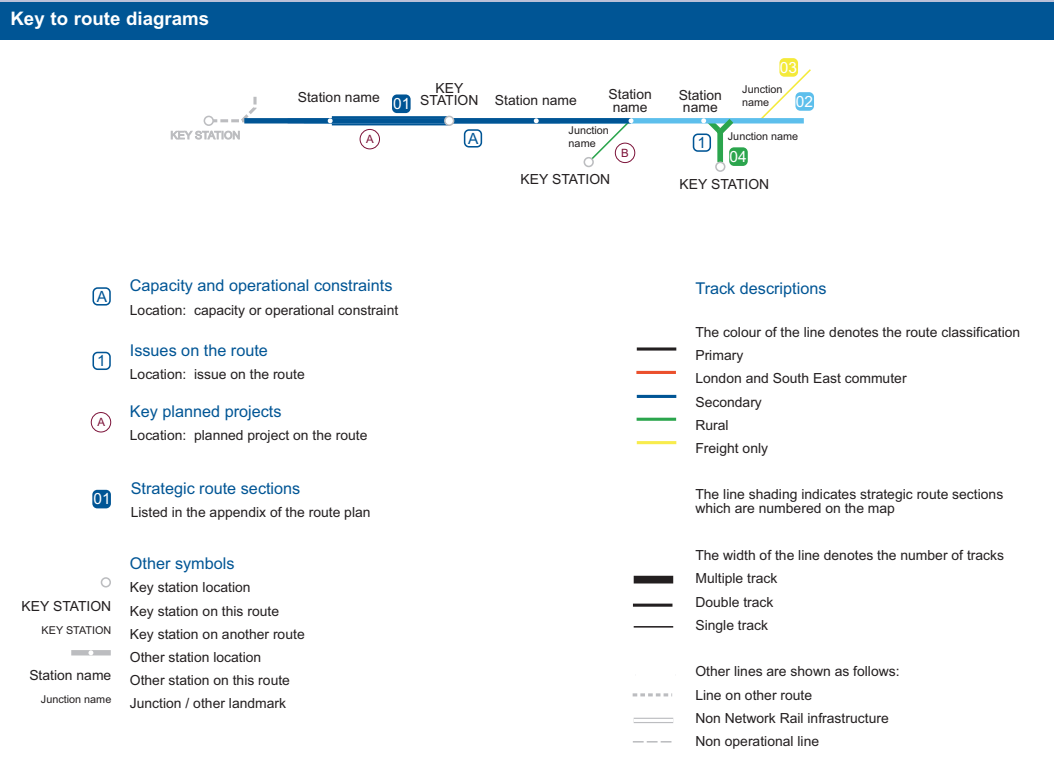
Capacity and operational constraints

- A Sheffield: S&C and curvature
- B Totley Tunnel East to Dore Station Junction: curvature and single line section
- C Holmes Junction to Masborough Station Junction: curvature and flat junctions
- D Swinton: curvature and S&C
- E Conisbrough: clearance through tunnel
- F Thorne Junction: flat junction
- G Keadby: low line speed over drawbridge
- I Grimsby Town to Cleethorpes: single line, level crossings and curvature
- J Moorthorpe Junction: curvature
- K Holmes Junction to Rotherham Central: curvature
- L Holmes Junction to Aldwarke Junction: track alignment
- M Aldwarke Junction: flat junction
- N Huddersfield to Barnsley: single line 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



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

**This Route Plan is part of a set.
To view or download the others
visit www.networkrail.co.uk**

Network Rail
40 Melton Street
London NW1 2EE
Tel: 020 7557 8000
www.networkrail.co.uk

CDS001/April 2008