



## Route 11 South Trans-Pennine, South Yorkshire and Lincolnshire

### 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 cross country line between Stockport and Sheffield (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 (part 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).

11 11

### Route context

This route links Manchester and Stockport to Sheffield and extends through Doncaster to Scunthorpe, Grimsby and Cleethorpes as well as the ports on the south bank of the Humber.

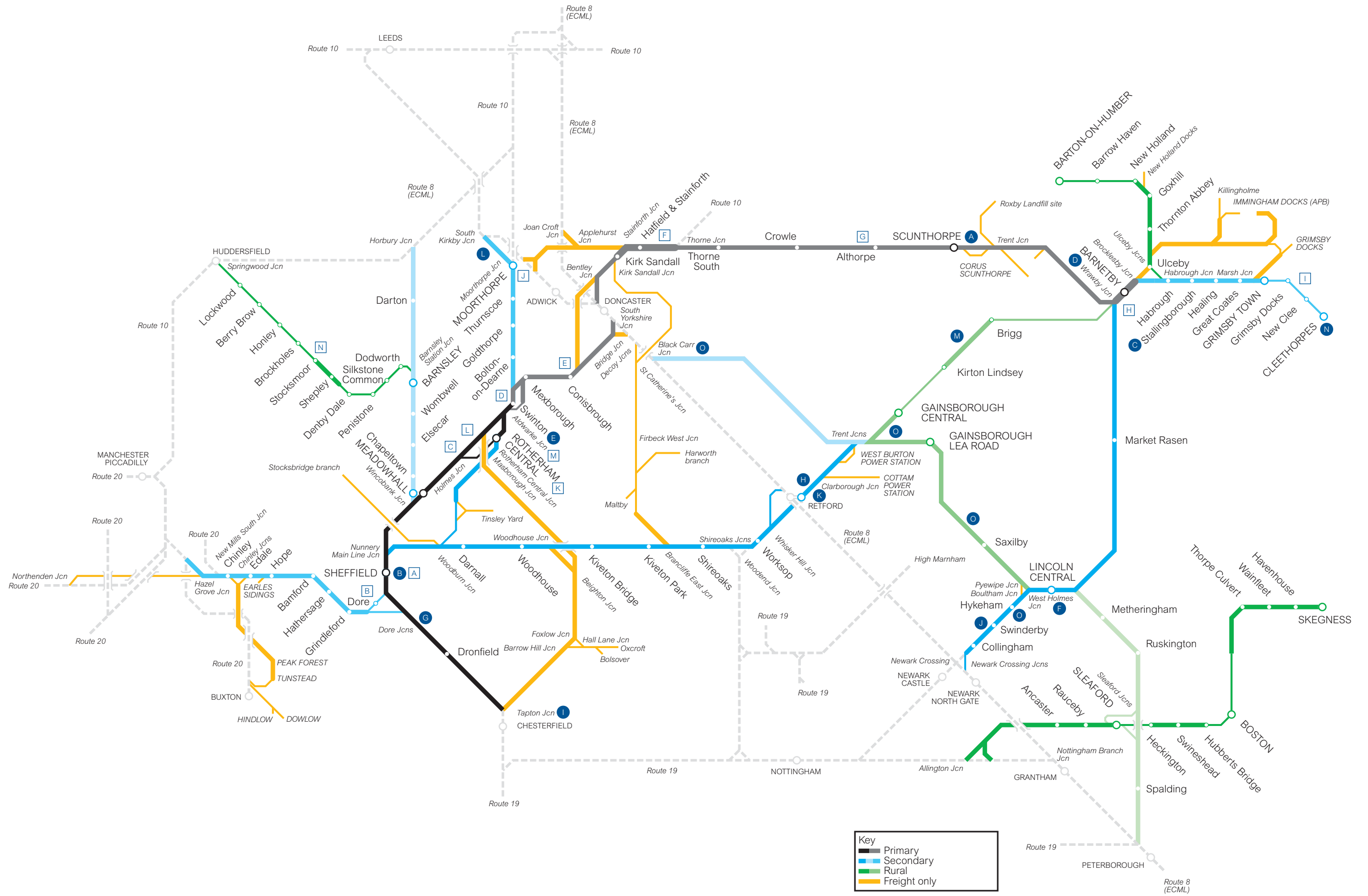
It provides links to the South Yorkshire conurbation and to the communities in Lincolnshire and carries a significant volume of freight traffic from the Humber ports, to the steelworks at Scunthorpe, and coal traffic to the lower Trent Valley power stations.

The northern part of the route largely parallels the A180, M180, M18 and A628 cross-Pennine road.

We are just starting on the Yorkshire & Humber Route Utilisation Strategy (RUS) on behalf of the industry which will cover this route together with Route 10. The DfT is expected to start its Regional Planning Assessment for the Region shortly.

The Barnsley – Penistone – Huddersfield line is a designated community railway led by a community rail partnership. The Grantham to Skegness line has a community rail partnership but is not yet a designated community railway.

# Route 11 South Trans-Pennine, South Yorkshire and Lincolnshire



### Passenger and freight demand

There are four distinct passenger markets served by the route. The first is for medium and long distance cross-country journeys as part of the link between Eastern Scotland, the North East, Yorkshire and Lincolnshire with the North West, Midlands and South West. The second is the initial portion of long distance journeys between South Yorkshire and Lincolnshire, and London either by direct services or by changing onto inter city 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.

There is a considerable amount of locally generated rail freight and the route provides a key artery connecting the North East with the Midlands. Virtually all types of rail freight commodity are handled on the route though power station coal and raw materials for, and the products of, the steel industry predominate. The next section gives a little more detail on the major flows.

### Current services

Services are provided on this route by Northern Rail, Transpennine Express, Central Trains, Virgin Cross Country, Midland Mainline, English Welsh & Scottish Railway Ltd, Freightliner Ltd, Freightliner Heavy Haul Ltd and GB Railfreight Ltd.

Sheffield is intersected by a number of long distance flows. Virgin Cross Country services generally run on a half-hourly frequency between the South and South West via Birmingham and the North East with some extending to Scotland. Sheffield is also the terminus of most of Midland Mainline's trains from London St. Pancras, though some continue to Leeds. An hourly long distance Central Trains service runs from Liverpool via the Hope Valley and Sheffield, to East Anglia via Nottingham complemented on the opposite half hour through the Hope Valley by a Transpennine Express service from Manchester Airport, via Sheffield and Doncaster, to Cleethorpes.

Sheffield is also the focal point of a number of Northern Rail PTE sponsored local services with hourly stopping services to Lincoln via Worksop, Leeds via Barnsley, Leeds via Moorthorpe, and

Huddersfield via Barnsley. There is also a half hourly stopping service to Doncaster extending alternately to Scunthorpe and Adwick, and approximately every two hours a stopping service through the Hope Valley to Manchester. There are also hourly semi-fast services linking Sheffield and Hull via Doncaster, and Leeds via Barnsley.

Central Trains services in Lincolnshire include hourly services between Leicester and Lincoln via Nottingham, between Nottingham and Skegness, Lincoln to Sleaford, and Peterborough to Spalding. Many of the latter two services are part of a Lincoln – Sleaford – Spalding – Peterborough service that runs during the main part of the day.

Approximately two hourly services run on the routes from Lincoln to Grimsby and to Newark. An infrequent service runs between Doncaster and Lincoln via Gainsborough (Lea Road). A two hourly local shuttle service runs between Cleethorpes and Barton-on-Humber.

The largest area of freight activity is on the south bank of the Humber where the railway between Immingham, Scunthorpe and the Doncaster area see some of the highest freight tonnages moved in the country. It carries raw materials and manufactured items to/from the steelworks at Scunthorpe and large volumes of coal and other bulk products imported through the Humber ports. Over sixty freight trains operate each way per day on the core section between Brocklesby and Wrawby Junction.

There are considerable freight flows on other sections of this route. In particular, the Moorthorpe/Doncaster – Rotherham – Beighton – Chesterfield axis sees a considerable amount of through freight between the North East and the Yorkshire & Humber Region, and the Midlands and South West.

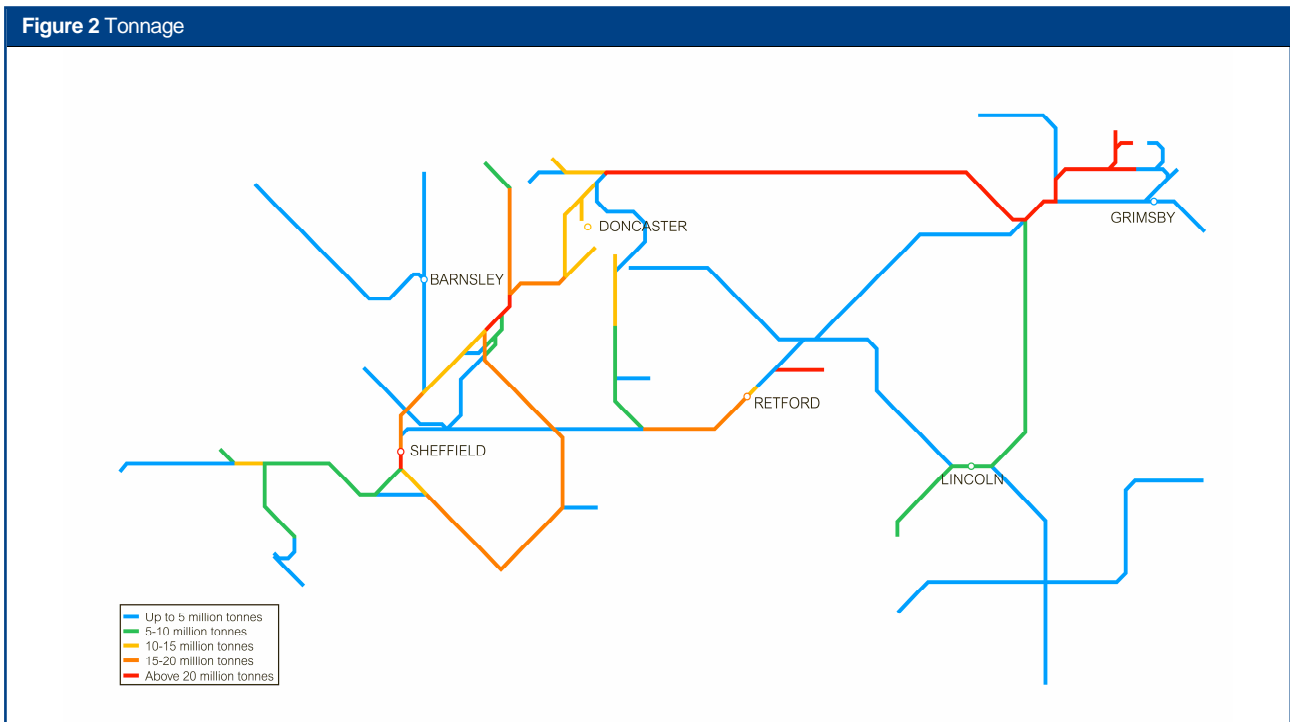
The South Yorkshire Joint Line from Doncaster to the Worksop area is also an important freight line which not only serves two local collieries but sees through coal traffic from the North East and Scotland to the lower Trent Valley power stations and loaded coal trains in the opposite direction from the East Midlands coalfield to the Aire Valley power stations. Mention should also be made of the Hope Valley line which generates considerable aggregates traffic from the Peak District quarries.

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

Figure 1 Current train service level (trains per hour)	
Originating Station	tph to Sheffield
Chesterfield	3
Manchester	2
Barnsley	3
Lincoln	1
Worksop	2 peak/1 off peak
Doncaster	6 peak/4 off peak

**Current traffic**

Figure 2 shows the tonnage levels on the route.

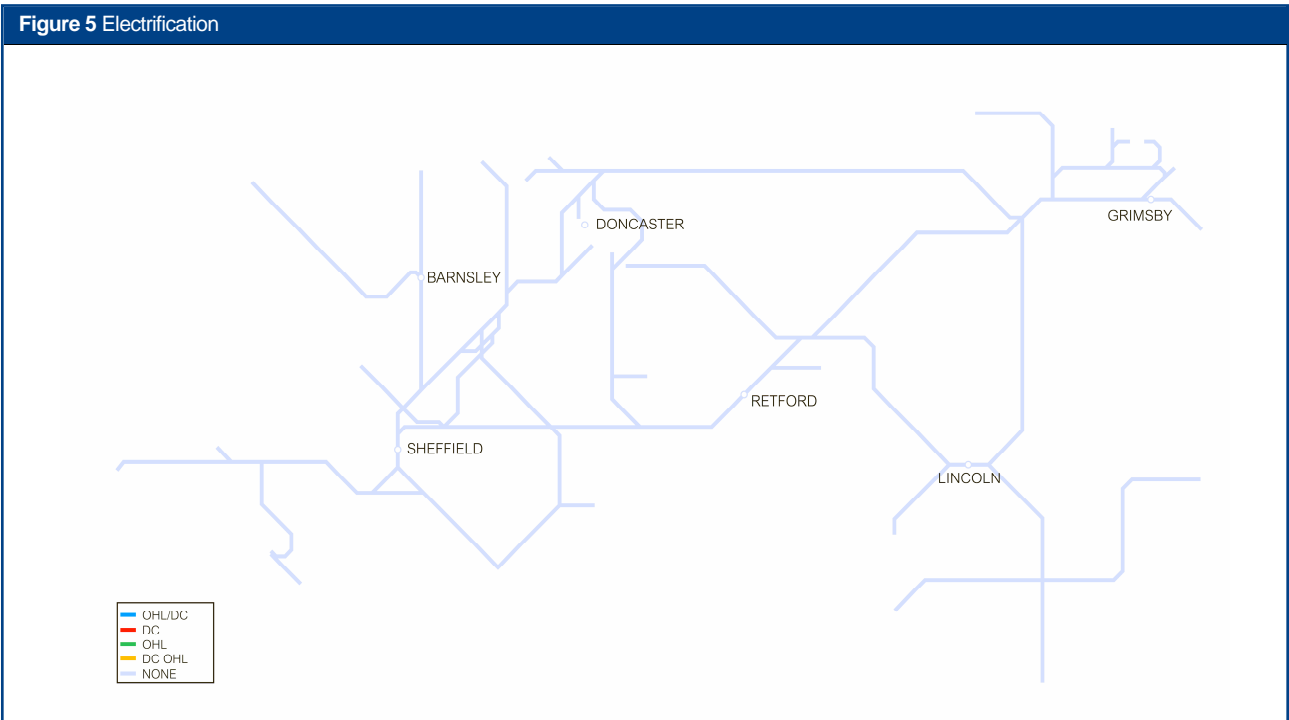
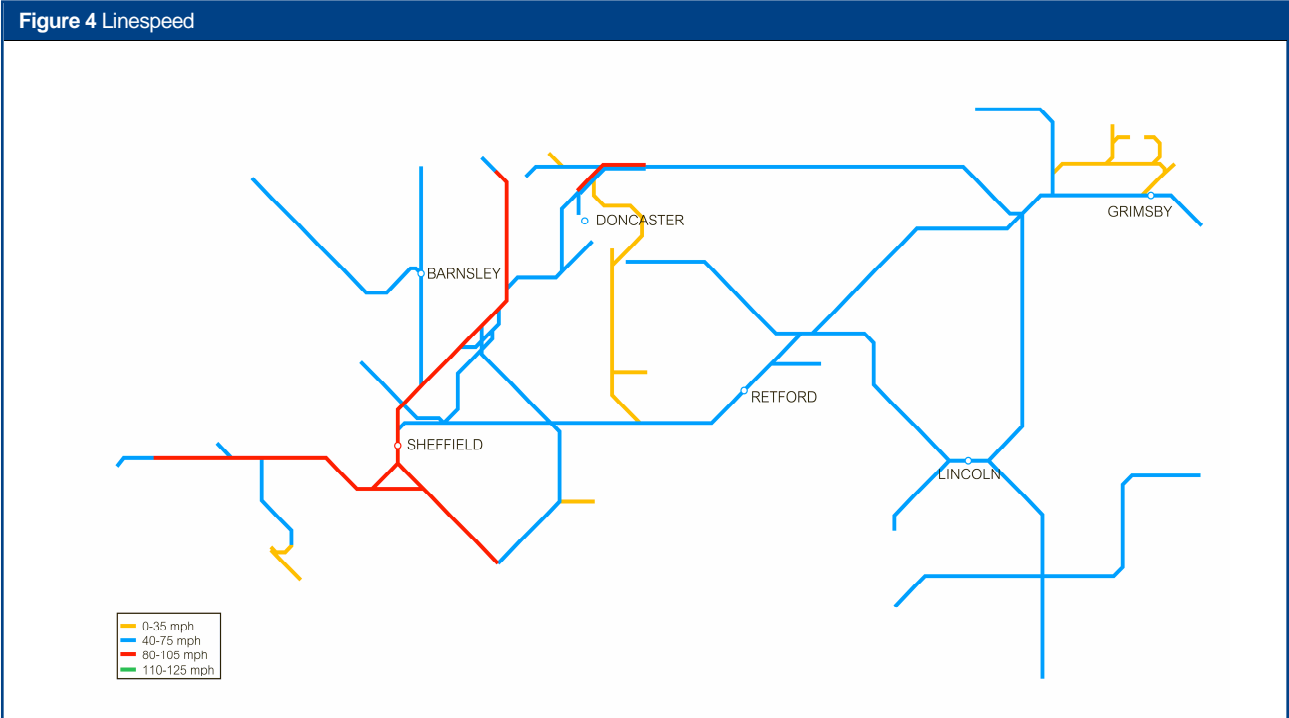


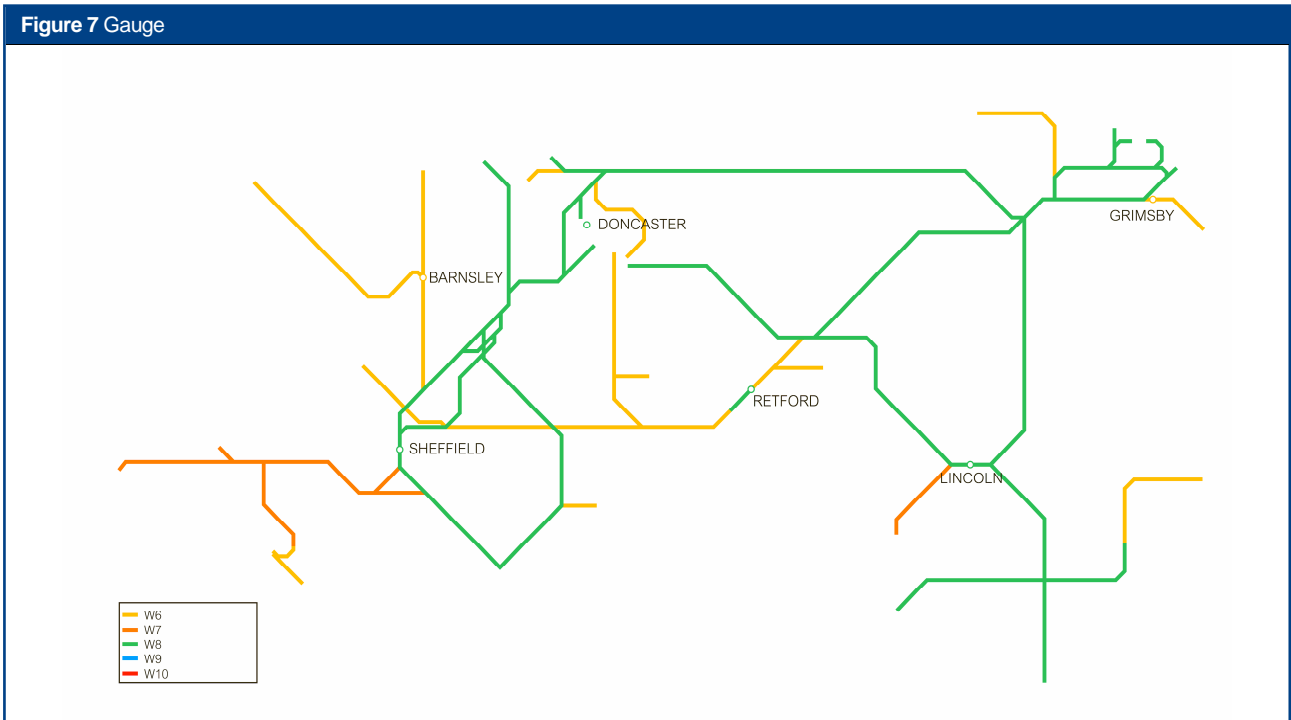
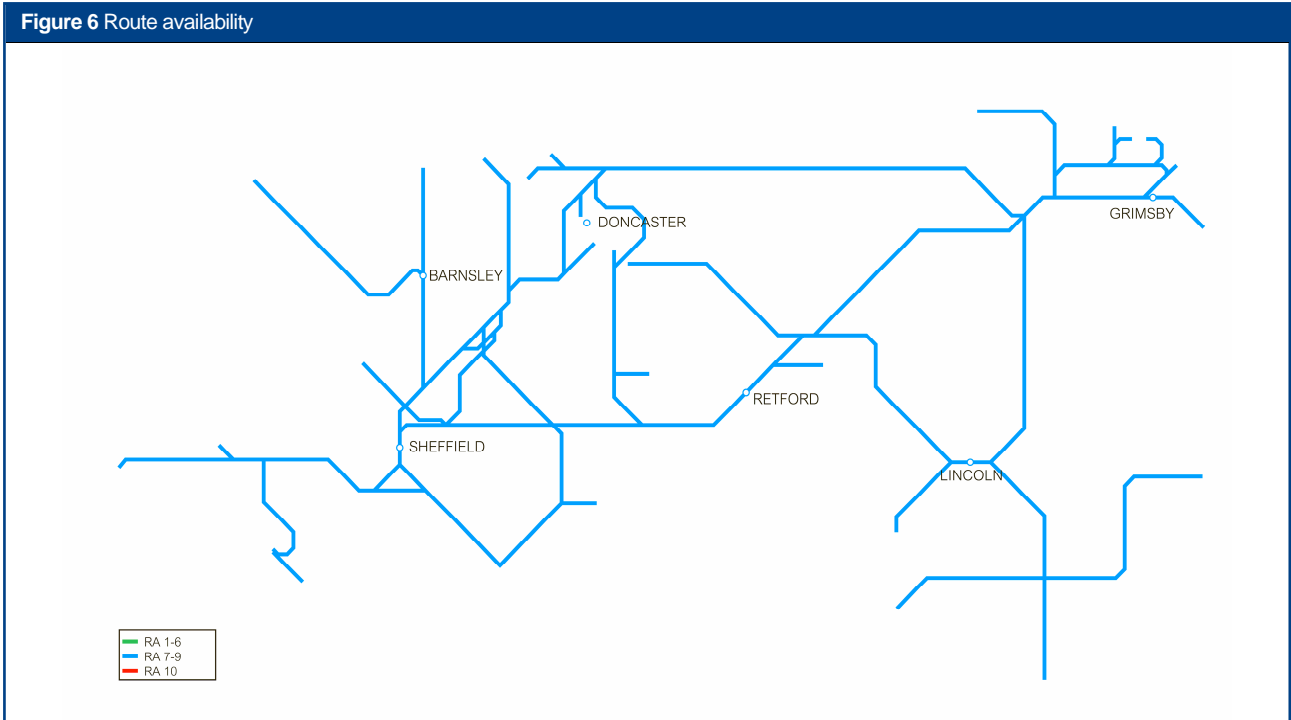
Traffic volumes are summarised in Figure 3.

Figure 3 Current use			
	Passenger	Freight	Total
Train km per year (millions)	12	4	16
Train tonne km per year (millions)	1,401	4,859	6,260

### Current infrastructure capability

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





### Current capacity

Around Sheffield, particularly the Chesterfield – Sheffield – Moorthorpe corridor, the high level of passenger trains (and freight services on some parts of this section) presents the major challenge. The section features no less than eight flat junctions (excluding Sheffield station itself) within a 13 mile stretch between Dore South Jn and Swinton Jn. The infrastructure operates at or near capacity on many hours and presents a constraint to the timetabling of services through the area, some of which run over considerable distances.

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

- Immingham – Brocklesby – Wrawby Junction – Scunthorpe: primarily driven by huge 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 long distance passenger services and slower stopping passenger trains and freight services in connection with the Peak Forest quarries.

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

Figure 8 Current train service level (peak trains per hour)		
Route Section	Main Lines	Relief Lines
Brocklesby Junction – Barnetby (westbound)	5	3
Brocklesby Junction – Barnetby (eastbound)	7	N/A
Marshgate Junction – Kirk Sandall Junction	6	N/A
Swinton – Aldwarke Junction	12	N/A
Sheffield – Meadowhall	9	N/A
Sheffield – Dore Station Junction	8	N/A

### Current performance

On the Chesterfield – Sheffield – Moorthorpe/Doncaster axis, the high level of passenger trains and freight services presents the major challenge to performance. As mentioned above, there are no less than eight flat junctions (excluding Sheffield station itself) within a 13 mile stretch between Dore South Jn and Swinton Jn. 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 tends to be exacerbated either in the Sheffield area itself or at other busy locations elsewhere on their route (e.g. Leeds, Birmingham and Manchester) where they are likely to be delayed by other trains.

The track renewals programme is designed to improve performance by targeting the main TSRs on this route and by working towards renewing jointed track with CWR. In particular, temporary speed restrictions on the Hope Valley line have been a concern for sometime, both for their effect on performance on the routes and also for the delay imported into the Manchester urban area as a result of late presentation of through services. We have recently carried out significant renewals on the route to remove the majority of the speed restrictions.

**Figure 9** Current PPM MAA (2005/06)

TOC	MAA	As at period
Central Trains	76.8%	10
Midland Mainline	92.0%	10
Northern Rail	86.1%	10
Transpennine Express	77.4%	10
Virgin Cross Country	80.2%	10

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

### Future requirements

#### Strategic direction

Network Rail is starting its work on leading the Yorkshire & Humber RUS on behalf of the industry and wider stakeholders. The RUS will aim to make effective and efficient use and development of the route capacity available, consistent with the funding that is, or is reasonably likely to become, available during the 10 years covered by the RUS.

DfT Rail is also expected to commence their Regional Planning Assessment (RPA) for the two Regions covered by this route and to complete their review of the Northern Rail franchise. The latter will form an input to the RUS.

We will discuss future aspirations for the Penistone, and Grantham to Skegness lines with the relevant community rail partnerships.

#### Future demand

The RUS process will require much demand analysis and so both the Yorkshire and Humber RUS and Freight RUS will identify future requirements for the route in more detail and will allow a more quantitative analysis in next year's Route Plan. However, the following gives an overview of issues already being considered while scoping the RUS work.

Urban and regional journeys between major conurbations are expected to continue growing. In particular, demand on the cross-country services operating through Sheffield is expected to continue to increase. The introduction of new class 185 units on the Manchester – Cleethorpes service will particularly help as they will not only offer a new level of passenger comfort but, subject to pathing, should allow some improvement in journey times with their better acceleration compared to the current Class 158 trains. New stabling facilities are being provided at Cleethorpes for these trains.

PTE services are also expected to see further increases in patronage as roads in South Yorkshire continue to become more congested.

It is expected that growth in passenger travel can be largely accommodated on existing services albeit with train lengthening. However, on some lines further demand may be stimulated by increasing the frequency of services but this would probably require significant infrastructure enhancement.

Freight growth is expected to be associated mainly with further growth at the port of Immingham. Much of this will result from increases in coal following the completion of phase 2 of the Humberside International Terminal later this year but the port is also looking to make use of rail for other growth traffics.

Figure 10 Tonnage growth

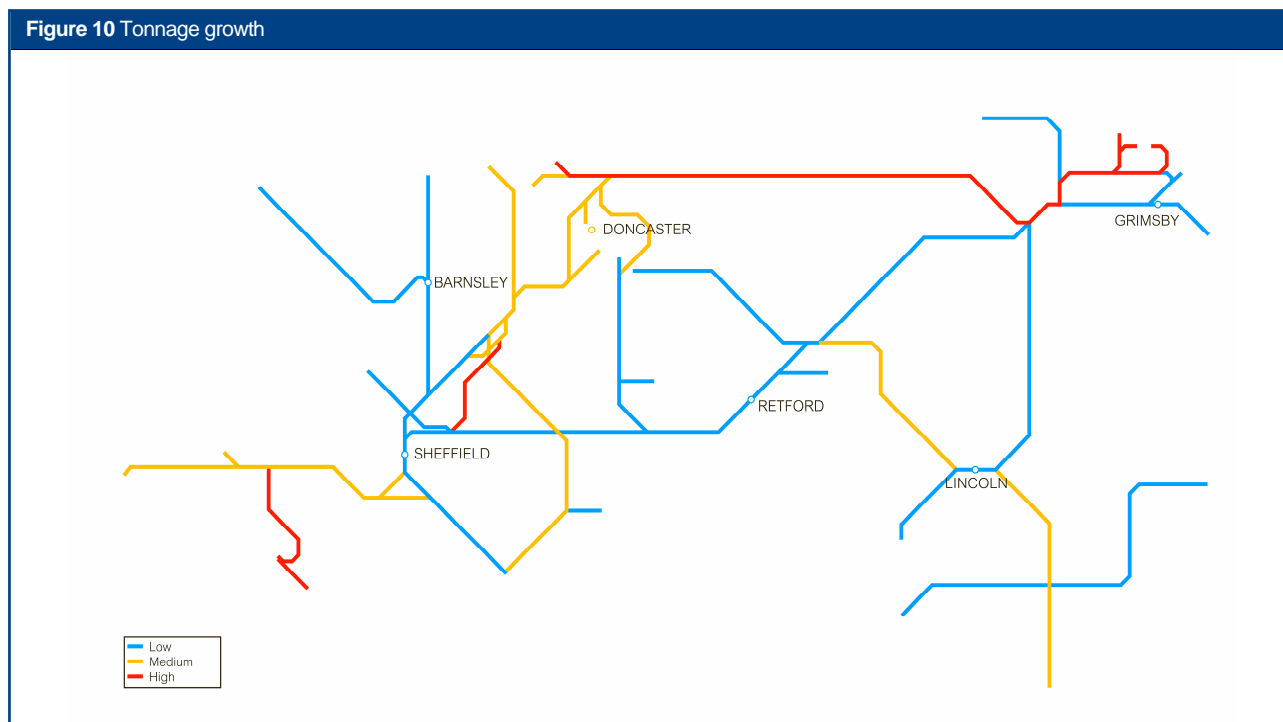


Figure 10 indicates percentage change in tonnage to 2015.

#### Future capability

As part of the provision of W10 gauge clearance for deep sea 9'6" containers from Felixstowe and Bathside Bay to four terminals in West Yorkshire, we are working with HPUK Ltd. on clearing the section from Newark, via Swinderby and Gainsborough, to Doncaster to provide additional capacity and a diversionary capability off the East Coast Main Line for such traffic.

Elsewhere on the route, the extent to which intermodal traffic features as a freight growth area will be largely determined by whether routes into Immingham and other lines in the north of England are cleared for deep sea 9'6" containers and swapbodies.

Although as mentioned above, this route largely has low linespeeds outside the core Chesterfield/Hope Valley – Sheffield – Moorthorpe/Doncaster corridor, increases would generally not provide much benefit on lines where only stopping passenger services operate. Conversely on those where faster passenger services and significant volumes of freight operate, linespeed improvements could lead to a disbenefit as an increase in speed differential would cause a reduction in line capacity.

Network Rail are working with Transpennine Express to find ways to allow the class 185s to operate at some of the previously sprinter only speeds on the Hope Valley route. If this is not possible the higher acceleration of these units on

other sections of the route should help to offset the affect of running at the non sprinter speeds.

The proposed strengthening works on Kilnhurst Road Bridge at Swinton should allow the restoration of the 100 mph maximum linespeed which is currently reduced to 30 mph for freight trains and 90 mph for all but class 220/221/222 and HST passenger trains.

Initial discussions are taking place between us, other industry partners and the owners of the Robin Hood airport about the provision of a station.

We are currently in discussion with industry partners, through the Network Change process, regarding limits on the operation of loco hauled trains between Boston and Skegness. We regard this as an intermediate stage in resolving the capability issues on this line.

#### Published capability

As part of the ongoing work that Network Rail is committed to in relation to Infrastructure Capability, we have included 'category 1' capability routes in our investment processes in order to resolve discrepancies between actual capability and published capability, i.e. for the Seymour Junction – Bolsover line within this route.

#### Fragile routes

Network Rail engineers have identified a set of 'Fragile routes' across the country where the addition of any further loco hauled traffic would have a significant impact on the residual life of track and/or structures.

The rail freight industry has recently provided to Network Rail a set of 10 year traffic forecasts, and we are presently assessing their implications. The key route section within this route that has been identified as a fragile route and has clearly defined additional tonnage/train numbers projected by the industry is Gainsborough – Brigg – Barnetby.

#### Future capacity

We are currently working with partners on development work for the upgrading of the Wrawby Junction – Brigg – Gainsborough line to enable the regular operation of freight services. Much of the upgrade is associated with the capability of the line in respect of significant additional tonnages (structures and embankment issues) and increased level crossing risk caused by increased numbers of trains. This would allow some coal traffic to have a shorter journey than currently and also free up capacity on the other two routes out of Immingham to allow an overall increase in freight traffic.

Our current proposals for the signalling and track renewals at Lincoln are aimed at providing a more flexible layout which will improve capacity in the station area and also enhance performance. In particular, shunting moves could be significantly reduced.

At Wrawby Junction, the proposed enhancement on the back of the renewal of the double junction to the Doncaster to allow 50 mph operation (currently 30 mph) together with the raising of linespeeds in the Barnetby area is aimed at improved capacity.

In order for more services to operate north of Sheffield there is likely to be a need to enhance the infrastructure between Sheffield and Swinton. This is likely to be looked at in more detail in the RUS. Improvements on this section would also help train performance.

Traffic increases south of Sheffield would require enhancements in the Dore area. Although there is a former SRA scheme for this, it does not have a

business case built on performance alone so a significant additional income stream would need to be generated by new services to underwrite it. The Association of British Ports in conjunction with Network Rail are introducing on their network bi-directional working between Humber Road Junction and Immingham West to improve the flow of traffic from the docks complex.

#### Future performance

Figure 11 shows the forecast reduction in Network Rail delay minutes compared with 2005/06.

Heavy maintenance on strategic track renewal through improved engineering access will continue to target the removal of Temporary Speed Restrictions between Doncaster and Wrawby over the next 5 years.

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

The proposed closure of level crossings on the Newark to Lincoln line will improve safety and will reduce the risk of delay caused by level crossing equipment failure or an operational incident.

The roll out of the new Train Regulation Policy to improve performance is underway with the first briefings already taking place ready for implementation in April 2006.

An area Autumn review has taken place and actions identified to manage leaf fall for Autumn 2006.

Heavy maintenance continues to be targeted at removing Temporary Speed Restrictions particularly around the Moorthorpe area which is a key junction for both freight and cross country passenger services.

**Figure 11** Forecast reduction in delay minutes

	2006/07	2007/08	2008/09
% reduction in delay minutes	4%	11%	17%

**Figure 12 Forecast PPM MAA**

TOC	2006/07	2007/08	2008/09
Central Trains	83.8%	84.5%	84.5%
Midland Mainline	91.4%	91.6%	91.6%
Northern	86.7%	87.5%	88.3%
TPE	88.7%	90.5%	91.4%
Virgin Cross Country	81.6%	83.5%	84.3%

Figure 12 shows the forecast PPM for the main TOCs running along the route.

### Engineering access

The proposed upgrade of the Brigg line should provide better engineering access opportunities as there is a need to improve access on midweek nights for cyclical maintenance between Wrawby Junction and Doncaster.

We would like to explore 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.

### Opportunities and challenges

As mentioned above, we are just starting work on the Yorkshire and Humber RUS on behalf of industry and wider stakeholders. In the scoping work we anticipate the two main challenges will be delivering capacity and performance increases on the Chesterfield – Sheffield – Moorthorpe/Doncaster corridor and to meet the demand for additional freight traffics from Immingham, particularly coal, taking into account the effects on current coal flows on the rest of the route.

### Delivering future requirements

#### Expenditure

Figure 13 shows the planned level of expenditure on renewals on this route over the next five years. The most significant individual renewal items are outlined in the individual asset sections, which follow.

However, the precise timing and scope of renewals remains 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.

**Figure 13** Forecast expenditure

£m (05/06 prices)	20 06/07	2007/08	2008/09
<b>Renewals</b>			
<b>Track</b>			
Plain Line	23	20	18
S&C	8	9	8
Drainage	0	0	0
<b>Track Total</b>	<b>31</b>	<b>29</b>	<b>27</b>
<b>Civils</b>			
Underbridges	6	8	4
Overbridges	0	0	1
Bridgeguard 3	1	3	–
Footbridges	1	1	1
Earthworks	2	1	0
Tunnels	1	1	11
Culverts	0	0	0
Retaining walls	–	0	–
Other	0	–	0
<b>Civils Total</b>	<b>11</b>	<b>15</b>	<b>18</b>
<b>Signalling</b>			
Resignalling	9	24	24
Minor works/other	6	11	37
<b>Signalling Total</b>	<b>15</b>	<b>35</b>	<b>61</b>
<b>Telecoms</b>			
Concentrators: large	0	2	–
<b>Telecoms Total</b>	<b>0</b>	<b>2</b>	<b>–</b>
<b>Plant and machinery</b>			
Fixed plant	0	2	1
Signal supply point	0	0	0
Point heating	1	0	0
<b>Plant Total</b>	<b>2</b>	<b>2</b>	<b>1</b>

<b>Operational property</b>			
Stations	1	–	7
Light maintenance depots	–	–	0
Lineside buildings	–	1	1
<b>Operational property Total</b>	<b>1</b>	<b>1</b>	<b>8</b>
<b>Total Renewals</b>	<b>61</b>	<b>83</b>	<b>115</b>
<b>Enhancements (funded by)</b>			
<b>Network Rail (RAB)</b>			
NDS Beighton depot	3	15	21
Wrawby junction S&C LSI	0	2	–
Other	0	1	–
<b>Network Rail (RAB) Total</b>	<b>4</b>	<b>17</b>	<b>21</b>
<b>Other Third Party</b>			
Brigg freight trains	1	6	–
Other	1	0	1
<b>Other Third Party Total</b>	<b>1</b>	<b>6</b>	<b>1</b>
<b>Total Enhancements</b>	<b>5</b>	<b>23</b>	<b>22</b>

**Figure 14** Forecast volumes

	2006/07	2007/08	2008/09
<b>Track</b>			
Rail (km)	40	38	37
Sleepers (km)	41	39	39
Ballast (km)	44	42	42
<b>Switches &amp; crossings (no)</b>			
Complete renewal	18	21	21
Abandonment	4	5	5
Drainage (km)	0	0	0
<b>Civils</b>			
Underbridges (square metres)	3505	2833	1,806
Overbridges (square metres)	158	624	641
Footbridge (square metres)	150	253	150
Embankments (square metres)	2882	12612	–
Tunnels (square metres)	461	112	12043
Culverts (square metres)	36	274	25
Retaining walls (square metres)	–	69	–
<b>Signalling</b>			
Resignalling (SEUs)	30	45	184
<b>Telecoms</b>			
Concentrators: large (no)	–	1	–
<b>Plant and machinery</b>			
Signal supply point (no)	–	–	2
Point heating (point end)	12	18	17

The planned volume of renewals is detailed in Figure 14.

It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of overplanning 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

#### **Maintenance**

Figure 15 shows the planned level of expenditure on maintenance on this route over the next three years.

**Figure 15** Forecast expenditure

<b>£m (05/06 prices)</b>	2006/07	2007/08	2008/09
Maintenance	36	33	31

## Infrastructure investment

Figure 16 highlights committed schemes that are planned for completion in the financial year shown.

Figure 16 Planned infrastructure investment							
Project	Scope	Enhancement or output change	Main asset type(s)	Third Party funding	GRIP stage	Completion year	
A	Scunthorpe S&C (11.02)	Renewal	Improved asset condition	Track	None	4	2006/07
B	Sheffield Brightside wire degradation (11.01)	Renewal of Interlocking	Improved asset condition. and conversion of the goods loop to passenger status	Signalling	None	5	2006/07
C	Stallingbrough wire degradation (11.09)	Renewal of signal equipment and a new signal box	Improved asset condition	Signalling & building	None	4	2007/08
D	Wrawby S&C (11.02)	Renewal	Improved asset condition	Track	None	3	2007/08
E	Klinhurst Road Bridge (Swinton) (11.01)	Strengthen	Improved asset condition and route capability	Structures	None	2	2007/08
F	Lincoln S&C & Resignalling (11.08)	Renewal of S&C and resignalling providing a modified layout	Improved asset condition, route capacity and performance	Track & signalling	None	3	2008-2010
G	Sheffield S&C North (11.01)	Renewal	Improved asset condition	Track	None	3	2008/09
H	Bradway Tunnel (11.01)	Tunnel relining and repairs	Improved asset condition	Structures	None	2	2008/09
I	Scunthorpe Wire Degradation (11.02)	Renewal of signal interlocking	Improved asset condition	Signalling	None	1	2008/09
J	Clarlborough Jn S&C (11.04)	Renewal	Improved asset condition	Track	None	1	2008/09

**Figure 16** Planned infrastructure investment

Project	Scope	Enhancement or output change	Main asset type(s)	Third Party funding	GRIP stage	Completion year
<b>I</b> Tapton wire degradation (11.01)	Renewal of interlocking	Improved asset condition	Signalling	None	4	2008/09
<b>J</b> Collingham, Cross Lane and Swinderby (11.08)	Level Crossing renewal	Improved asset condition	Signalling	None	1	2008/09
<b>K</b> Thrumpton S&C and wire degradation (11.04)	Renewal of S&C and signal interlocking	Improved asset condition	Track and signalling	None	1	2008/09
<b>L</b> Moorhorpe wire degradation (11.03)	Renewal of signal interlocking	Improved asset condition	Signalling	None	4	2008/09
<b>B</b> Sheffield concentrator (11.01)	Like for like telecoms renewal	Improved asset condition	Telecoms	None	1	2008/09

Figure 17 highlights uncommitted schemes under development.

Figure 17 Infrastructure investment under consideration				
Project	Scope	Enhancement or output change	Main asset type(s)	Status
W Brigg Line (11.12)	Route upgrade	Improved capacity and performance	Track	In development for funding by a Third Party
N Cleethorpes Siemens Depot (11.09)	New depot facility	Maintenance for the new Class 185 fleet	Depot	In development for funding by a Third Party
W10 Gauge Clearance (11.08, 11.12 and 11.07)	Gauge clearance of the route between Newark, Gainsborough and Doncaster in connection with the port developments at Felixstowe and Bathside Bay	To accommodate the carriage of deep sea container traffic as an alternative route to the East Coast Main Line between Newark and Doncaster	Structures, track	In development for funding by port operator

## Appendix

Figure 18 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	No of Tracks
11.01	Chesterfield – Swinton (via Sheffield)	TJC1/2/3/HCD/ WME	Primary	DfT	No	W8 (9/6)	8 (10)	90 (15)	None	TCB	4	2
11.02	Swinton – Brocklesby Jn	SJM1/2/PED5/ DOW/MAC3	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 – Rotherham Central Jn	MAC3/WHR/N UJ1/2/WME	Secondary	DfT	No	W8 (W6)	RA8	60 (20)	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/SH B	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

**Figure 18** 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	No of Tracks
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)
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 linespeed over drawbridge  |
| H | Wrawby Junction: S&C and curvature   |
| 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                            |