

Route Plans 2007
Route 8
East Coast Main Line



**Delivering
for you**



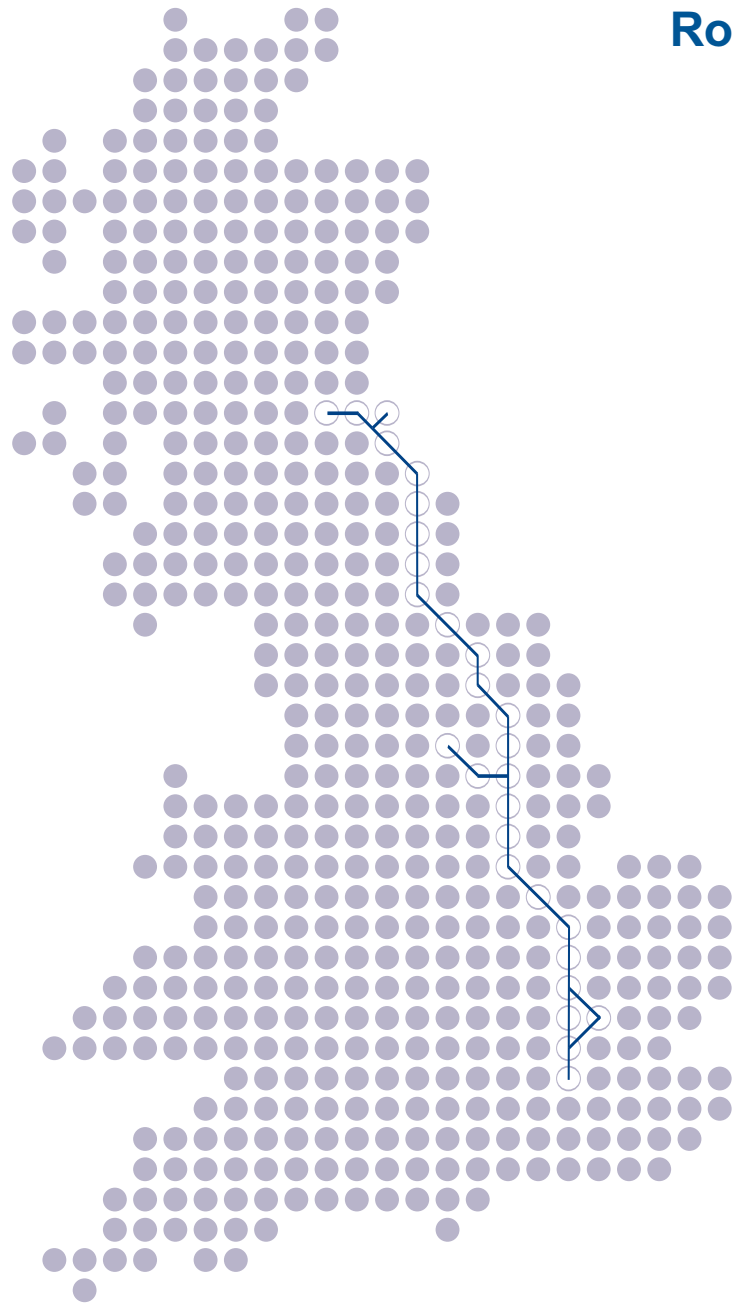


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Route 8 East Coast Main Line



8 8

Today's route

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

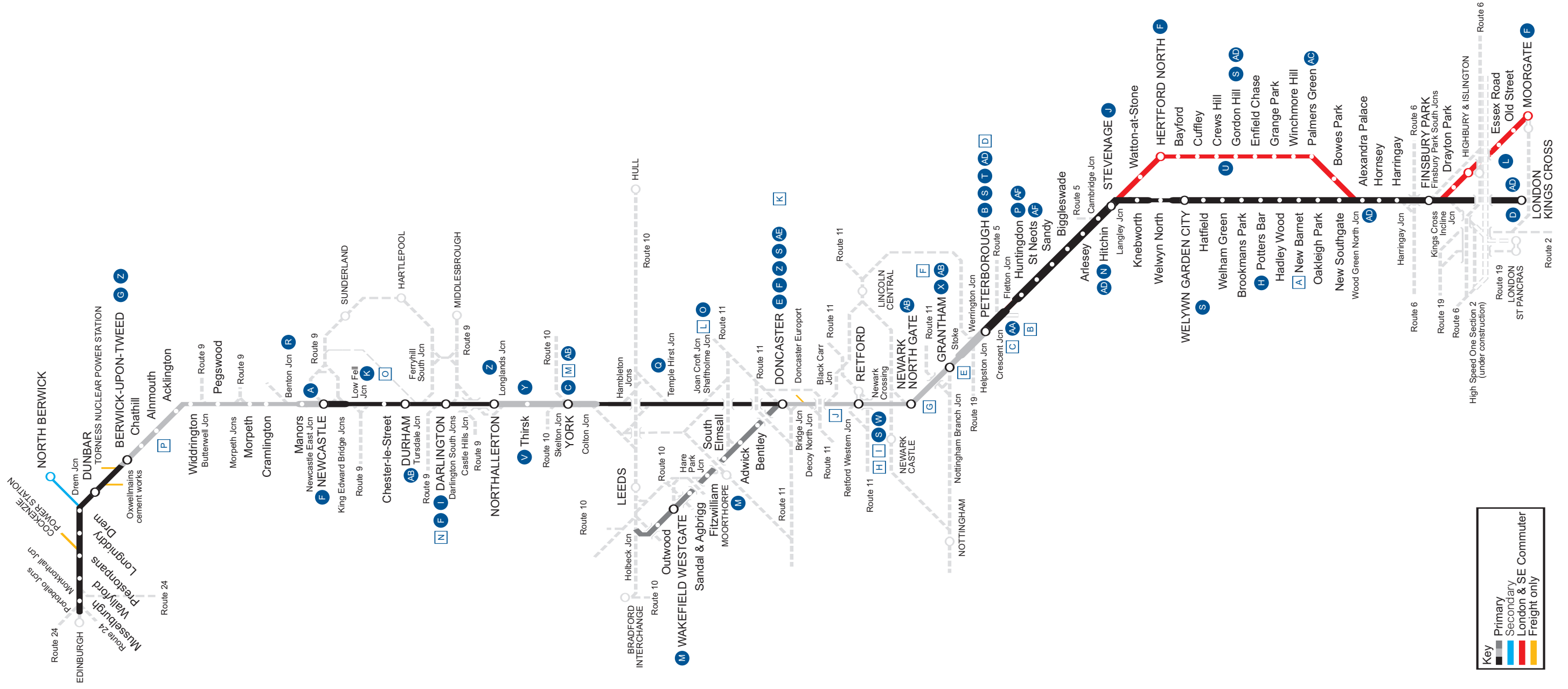
- the main line from King's Cross to Edinburgh and the line from Doncaster to Leeds which together form the core of the route (08.01, 08.04, 08.05, 08.06, 08.07, 08.08, 08.09 and 08.10);
- a loop via Hertford North which is mainly used by suburban services (08.03);
- a branch from Finsbury Park to Moorgate used only by inner suburban services Mondays to Fridays (08.02); and
- the North Berwick branch (08.11).

Route context

The East Coast Main Line (ECML) is the electrified high-speed link between London, Yorkshire, the North East and Edinburgh. It also handles cross-country, commuter and local passenger services, and carries heavy tonnages of freight traffic, particularly over the northern sections. The route forms a key artery on the eastern side of the country and parallels the A1 trunk road. It links London, the South East and East Anglia, with the Yorkshire and Humber and North East Regions, and Eastern Scotland. It also carries key commuter flows for the north side of London. It is therefore important to the economic health of a number of areas of

Great Britain. Network Rail is currently leading the ECML Route Utilisation Strategy (RUS) on behalf of the industry. The DfT has published its East of England Regional Planning Assessment (RPA) whose primary relevance to the route is south of Peterborough and the North East RPA which includes areas between Northallerton and Berwick-upon-Tweed. They will shortly complete the East Midlands and Yorkshire and Humber RPAs which also cover parts of the route. All are inputs to the ECML RUS.

Route 8 East Coast Main Line



Passenger and freight demand

The route is seeing a continued increase in demand in the long distance, commuter and regional passenger markets as well as freight tonnages.

Long distance services using London King's Cross regularly serve Leeds, Newcastle and Edinburgh with some services operating beyond these points. There are also eight trains per day each way between Hull and London. Other long distance journeys on the route use cross country services connecting Eastern Scotland and the North East with the North West, Midlands and South West.

The main commuter market faces towards London with inner and outer Suburban trains operating to/from King's Cross and Moorgate (inner suburban only) serving North London, central Hertfordshire and Cambridgeshire. In addition there is a significant long distance commuter market using ECML stations, particularly Grantham and Newark. The route is also used for other commuter journeys mainly into Leeds, Newcastle and Edinburgh.

A number of regional express and rural passenger services interact with the route at various locations between Peterborough and Doncaster. PTE and other local services serve Doncaster, Leeds, York, Darlington, Newcastle and Edinburgh.

As there are few freight terminals on the route, most freight trains operating on the ECML are transiting between other areas of freight activity. The majority use the route to access the East Coast ports, the Tees Valley and Scotland. A key use is for coal from the North East and Scottish opencast sites and Scottish and East Coast ports destined for the Aire and Trent Valley power stations. Container and other intermodal traffics from Felixstowe and the Thames estuary ports are a particular growth area.

Current services

The route's passenger services are provided by First Capital Connect (FCC), First Transpennine Express, Northern Rail, Great North Eastern Railway (GNER), Virgin Cross Country, Hull Trains Ltd, First ScotRail, Midland Mainline, Central Trains, One and West Coast Railway Company. English Welsh & Scottish Railway Ltd (EWS), Freightliner Ltd, Freightliner Heavy Haul Ltd and Direct Rail Services Ltd (DRS) operate the freight services.

The normal weekday level of operation of long distance trains in and out of King's Cross comprises approximately 2 tph to/from the North East and Edinburgh, up to 2 tph to/from Leeds and a train roughly every two hours between Hull and King's Cross. This level of service increases to 5 or 6 tph at peak times. Some of the Leeds and Edinburgh trains extend to/from Bradford, Harrogate, Skipton, Glasgow Central, Inverness and Aberdeen.

Overlaid on these trains is an extensive FCC outer suburban service south of Peterborough including trains joining/leaving the route at Hitchin serving Cambridge and King's Lynn via Royston. Inner suburban services operate from Moorgate to Welwyn Garden City, Hertford North and Letchworth. These services use King's Cross at weekends. The weekday service is increased in the morning and evening peaks.

Between Doncaster and Leeds, in addition to the London trains described above, there are three Northern Rail PTE supported services per hour operating over various sections, an hourly Virgin Cross Country service north of South Kirkby Junction and the occasional Midland Mainline service between Leeds and London St Pancras.

In a typical hour, the section through York sees, in each direction, two GNER London services, two Virgin Cross Country services, three First Transpennine Express trains between the North West and the North East and Scarborough, and three Northern Rail services.

The North Berwick branch is served by one First ScotRail train per hour to/from Edinburgh (two trains per hour in the peak hours and on Saturdays). An hourly Northern Rail local service operates between Newcastle and Morpeth.

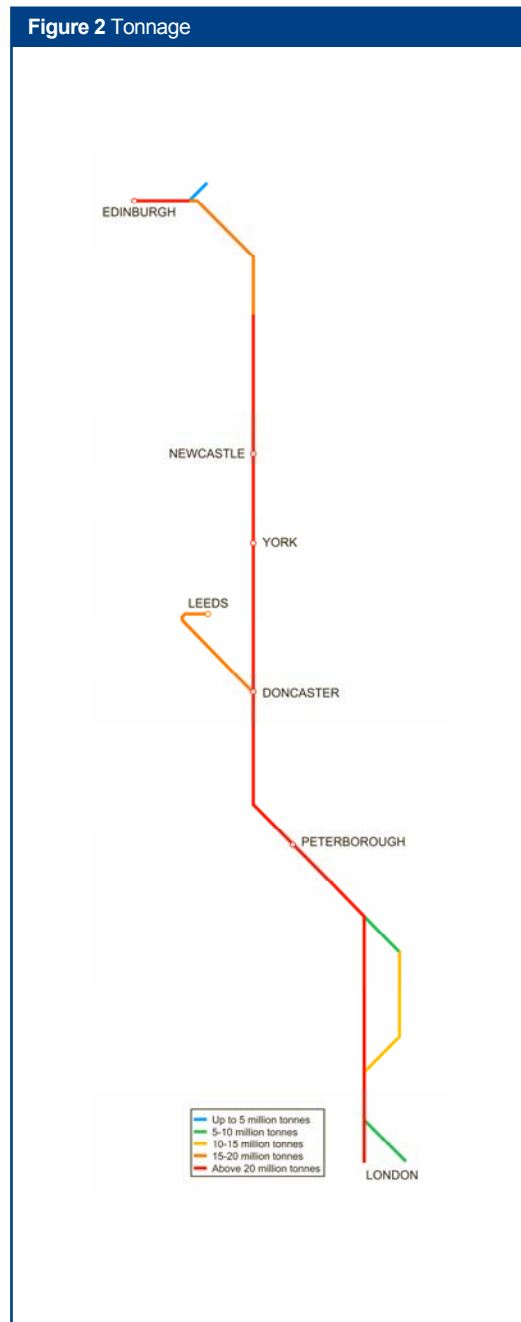
In addition, the whole of the route (except the North Berwick and Moorgate branches) sees considerable use by freight traffic.

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

Figure 1 Current train service level (trains per hour)

Originating Station	tph to King's Cross
Welwyn Garden City	4 peak/2 off peak
Stevenage	7 peak/5 off peak
Peterborough	9 peak/5 off peak
Doncaster	3 on most hours
Leeds	2 on most hours
York	2
Newcastle	2
Edinburgh	1-2

Figure 2 shows the tonnage levels on the route.



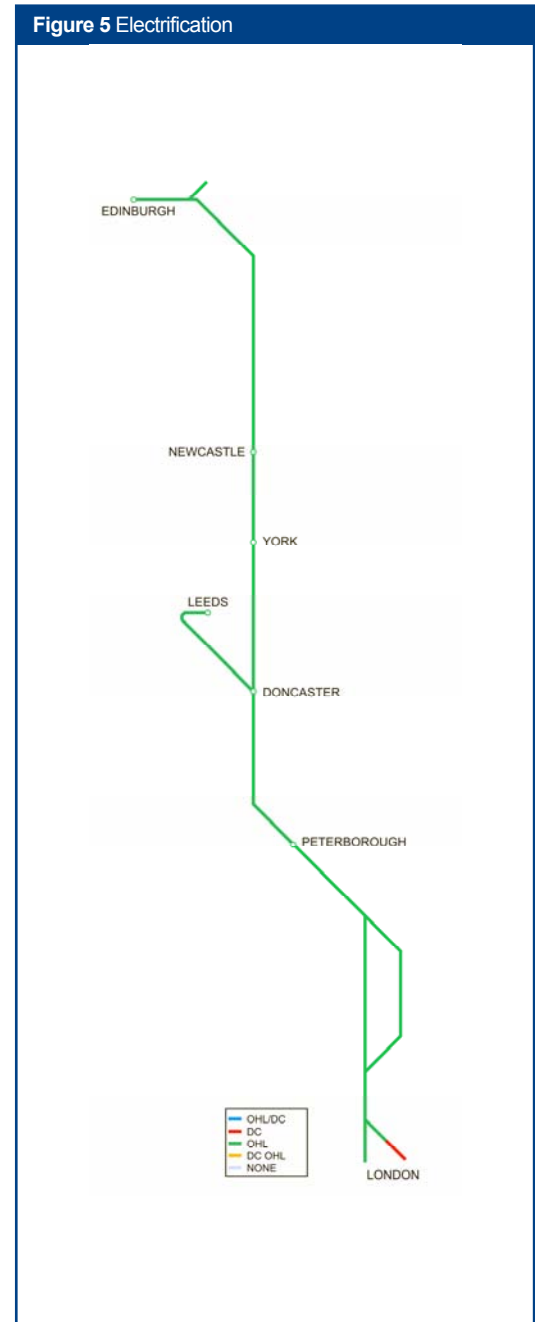
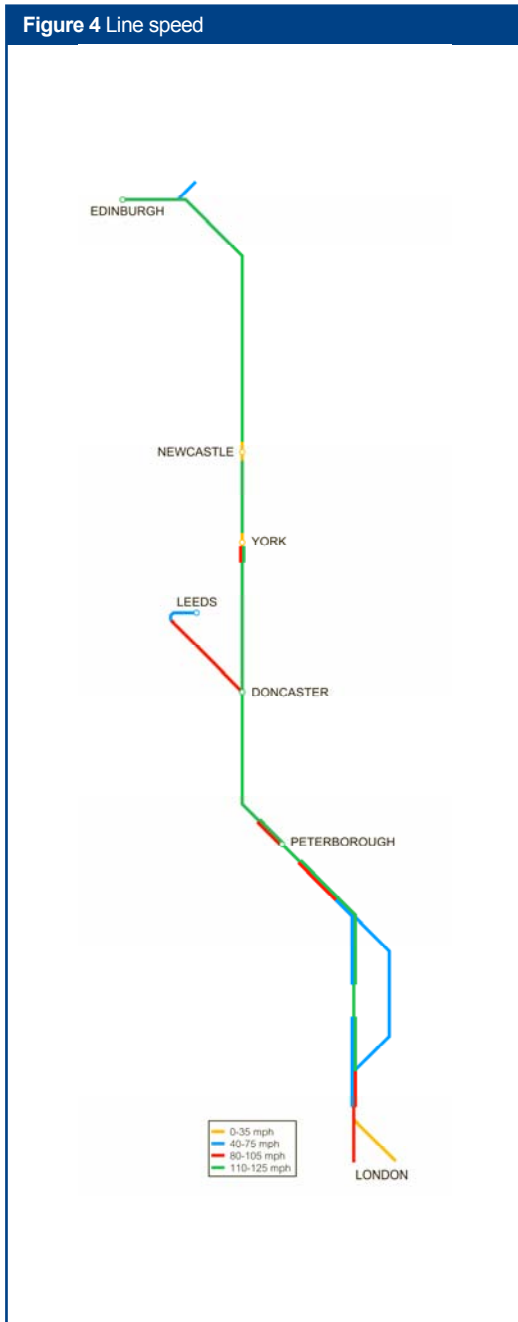
Traffic volumes are summarised in Figure 3.

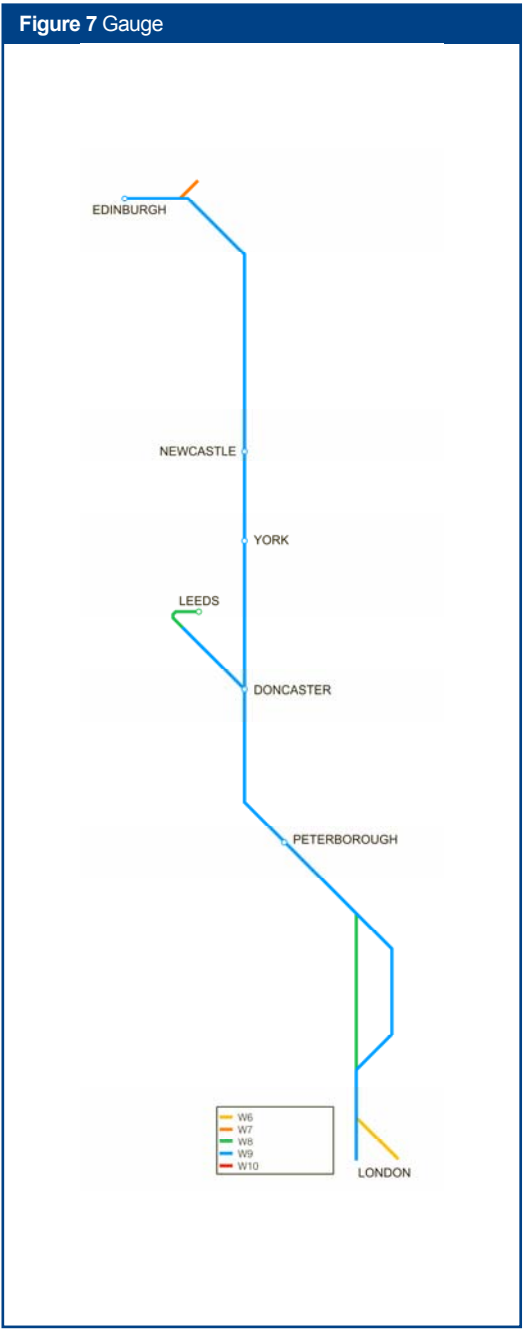
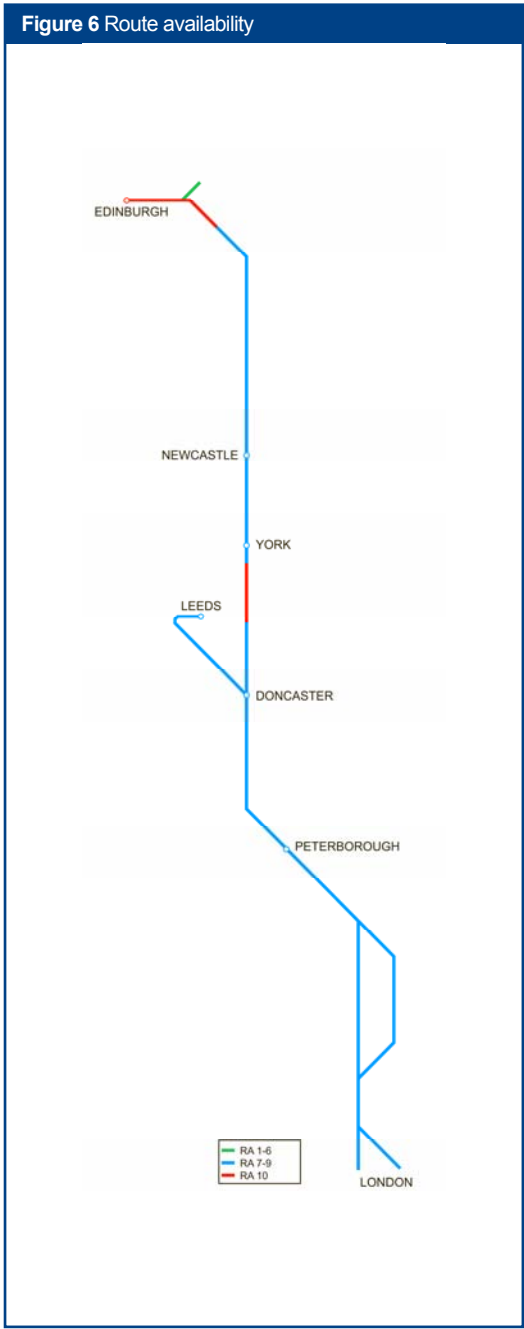
Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	37	7	44
Train tonne km per year (millions)	13,049	6,419	19,468

Current infrastructure capability

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





Current capacity

Much of the route currently operates at or just below capacity for much of the day due to the service mix and stopping patterns. This is against a background of both passenger and freight growth. The route has capacity constraints at a number of key locations, including:

- King's Cross – the 11 platforms are extensively used at peak times and three are unable to accommodate more than 8 coach trains;
- Holloway to Alexandra Palace – the 5 tracks used by passenger trains near to capacity in the peak;
- Digswell to Woolmer Green – two-track section constrains capacity and exacerbates delays in perturbed running;
- Hitchin – at grade junction to/from Cambridge line creates capacity constraint and again exacerbates delays;
- Huntingdon to Peterborough – 16 miles of two and three track railway with high levels of trains;
- Peterborough – with only five platforms, routeing of trains can become constrained and operations can easily become perturbed;
- Grantham to Doncaster – two-track section sees a mixture of fast and semi-fast passenger services interspersed with freight traffic and has some short loops;
- Doncaster – restricted layout of through platforms and large number of crossing movements;
- Doncaster to Leeds – on this two-track section capacity is constrained by the combination of fast and stopping passenger trains and freight services;
- York – four-tracks reduce to three in the southern approaches to the station which, together with current signalling control arrangements, causes pathing and performance problems;
- Darlington – current signalling control arrangements at the south end;
- Northallerton to Edinburgh – long two-track section with limited looping facilities, being particularly constrained between Ferryhill and Newcastle;
- Dunbar – only one platform which requires northbound stopping services to cross onto the up (southbound) passenger loop;
- Limited number of outer suburban platforms with 12-car capacity;
- Power supplies to the overhead electrification are at capacity at the south end of the route and north of Newcastle; and
- Moorgate branch limited to six car trains and has five minute headways.

In addition, the lack of electrified or larger gauge routes paralleling the route reduces the opportunity for freight services to be routed away from the capacity constrained sections.

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
London King's Cross – Welwyn Garden City	9	5
Digswell – Woolmer Green	16	N/A
Woolmer Green – Hitchin	9	7
Peterborough – Helpston Junction	7	3
Doncaster – Leeds	8	N/A
Colton Junction – York	4	8
Durham – Newcastle	9	N/A
Drem – Edinburgh	6	N/A

Figure 9 Current PPM MAA (2006/07)

TOC	MAA	As at period
Northern Rail	87.2%	11
First Transpennine Express	89.2%	11
GNER	83.6%	11
FCC	88.5%	11
Central Trains	84.2%	11
Midland Mainline	92.6%	11
First ScotRail	88.9%	11

Current performance

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

The capacity constraints listed above cause performance problems when long distance services are running out of course. The mix of high speed passenger trains, with varying stopping patterns, and slower passenger and freight services, also make it difficult to contain delays on the two track sections.

The two track sections are also a problem when an incident affects one or both lines as there are few viable diversionary routes, especially for electric trains. When one line is blocked, single line working can be instituted over the other track. On much of the route between Northallerton and Berwick upon Tweed, the signalling system allows this method of operation to be introduced relatively easily and so delays are normally contained. However, on other sections special signalling arrangements need to be employed and lead to delays mounting up very quickly and also requires the service to be thinned out significantly.

As with other routes with overhead electrification, failure of the equipment can cause significant performance incidents from time to time. With the lack of suitable diversionary routes mentioned above the effects can be quite significant.

Power supply problems in the Belford area, in Northumberland, cause signalling problems from time to time.

Future requirements Strategic direction

Network Rail is leading the ECML Route Utilisation Strategy (RUS) on behalf of the industry and wider stakeholders. The RUS aims to make effective use and development of the route capacity that is available, and consistent with the funding that is, or likely to become available during the 10 years covered by the RUS.

DfT Rail has recently published its East of England and North East RPAs and is in the process of completing these for the Yorkshire and Humber and East Midlands Regions. These all provide significant inputs into the RUS.

Future demand

Peak demand at the south end of the route heading into London is predicted to grow approximately two per cent per year over the next ten years, unless capacity constrains this growth. However, flows from some stations are expected to grow much more as a result of an increase in planned housing in their catchment areas. Growth on services on the Cambridge line is expected to be the highest.

Continued economic growth is expected to increase demand for off peak travel from the inner and Outer Suburban areas, particularly for journeys to London where rail competes strongly with other modes.

Demand for longer distance travel is also expected to increase continually, as economic growth encourages further business and leisure trips. Again, growth on London flows is expected to be the highest.

The longer distance market from Yorkshire, the North East and Eastern Scotland is expected to grow approximately three per cent per year.

Additional journeys into King's Cross will also be generated when the opening of section 2 of the High Speed One line to the Channel Tunnel. improves connections from the north to the Continent.

Construction of the Thameslink Programme, enabling through running of services on this route across London, would create new journey opportunities thereby stimulating further growth.

It is anticipated that the greatest growth areas for freight on the route will be in intermodal traffic and coal. The completion of W10 gauge clearance from Felixstowe and Bathside Bay to four terminals in

Yorkshire will drive a significant increase in container traffic on the constrained section of the route between Peterborough and Doncaster while the growth of Thames estuary ports will also provide an increase in traffic. Coal traffic to the Aire and Trent Valley power stations will also cause additional freight traffic on the route.

Other commodities will remain as important traffics for the route with growth in most being expected.

Future services

Our customers are already increasing service levels for the long distance market. From May GNER will fill the gaps in the half hourly off peak service to/from Leeds and from the same date open access operator Grand Central will start to operate three trains each way per day between London and Sunderland.

Beyond the timescales of the above, Grand Central wishes to increase its Sunderland service to four trains per day and to run four trains per day each way between Bradford and London via Halifax. Hull Trains would like to run an eighth train between Hull and London.

The InterCity East Coast franchise, which provides most of the long distance services based on Kings's Cross, is currently being retendered by DfT. Initially the successful franchisee will operate the May 2007 timetable level of service. Subject to the availability of rolling stock and the completion of any necessary infrastructure works, the pattern and level of service is likely to evolve in future years in line with the recommendations of the RUS.

In the context of expected long distance growth to/from London, the RUS is currently examining the opportunities and issues associated with an increase in hourly paths each way to six off peak and eight in the peaks and how the InterCity Express Programme would help this.

This work is against a background of aiming for a standard pattern of service, improving longer distance journey times, especially between Edinburgh and London, and the need for more 60 and 75mph freight paths. The most critical section for the off-peak services is between Stoke Summit and Doncaster where there is also a step change in freight path requirements.

The standard pattern would improve connectional opportunities and allow other services that interact with the route to maintain a 'clockface' pattern. Improvement in Anglo-Scottish journey times and protection of service provision are key priorities of Scottish Ministers.

In the short term it is anticipated that much of the increase in outer suburban commuter demand will be met through the implementation of an enhanced outer peak timetable by FCC. This is likely to take effect from May 2008, subject to availability of rolling stock and completion of some small infrastructure upgrades.

Further growth in the outer suburban commuter market would be met through progressive train lengthening building on the service levels in FCC's proposed timetable mentioned above.

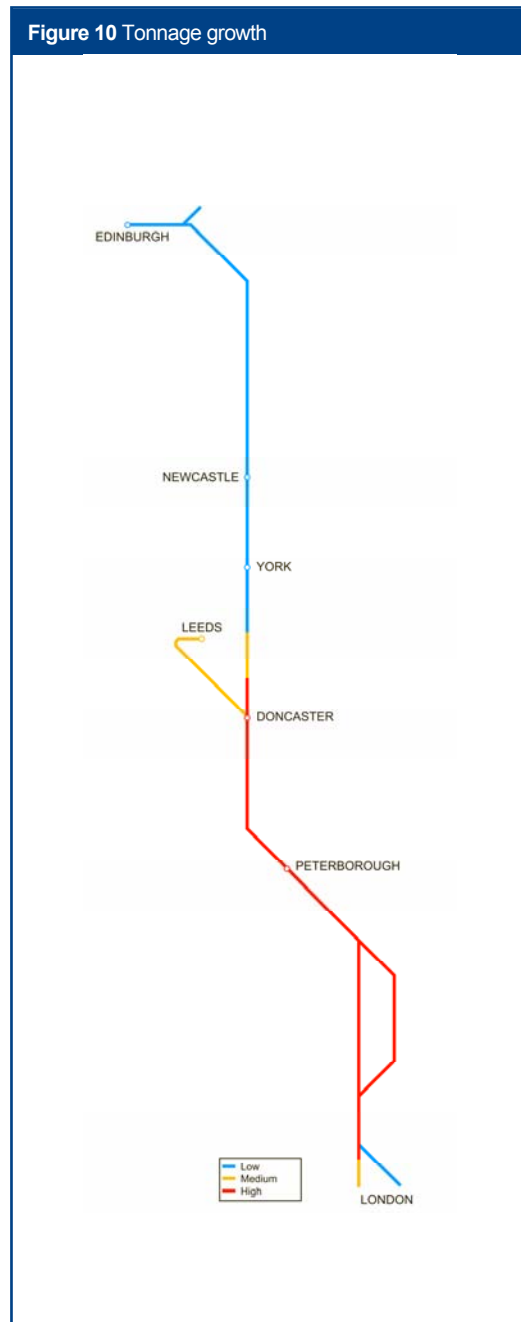
Growth on inner suburban services will be addressed initially through operating all peak hour services as 6 car trains. We are currently examining in the RUS how additional Hertford loop services could operate. It is anticipated that the Hertford line will see more long term growth as PPP schemes to improve Underground services in North London are expected to take some pressure off Welwyn to Moorgate trains.

TfL would like a 15 minute off peak frequency on inner suburban services to both Hertford and Welwyn and are working with FCC and us on this.

The critical growth requirements for freight services on the route are listed below with the number of additional trains per day in each direction forecast in 2014/15 identified in the Freight RUS shown in brackets:

- London – Peterborough (12)
- Peterborough – Doncaster (20)
- Doncaster – Hare Park Jn (8)
- Ferryhill – Tyne Yard (3)

Figure 10 indicates percentage change in tonnage to 2016.



Future capability

Some heavy axle weight restrictions should be withdrawn following structures renewals works including the reinstatement of the ability to run RA10 traffic on the Wakefield Westgate to Leeds section and removing a speed restriction following strengthening work on the River Don Bridge at Doncaster.

The major capability change is the proposed clearance of the Peterborough – Doncaster – Hare Park Junction/Temple Hirst Junction sections for W10 gauge traffic funded by HPUK Ltd. This would allow rail to capture a much larger portion of the increased container traffic generated by the Felixstowe and Bathside Bay developments.

We are undertaking development work in relation to a TIF submission on gauge clearance from Peterborough to Nuneaton. This builds on the above project and would provide an alternative route for intermodal traffic from Felixstowe and Bathside Bay to the West Coast Main Line. Such W10 traffic can currently only operate via London.

We are also working with a number of stakeholders on developing options to provide gauge clearance on the northern half of the route as part of an extended core network of high gauge routes.

Without significant infrastructure works there is little scope to increase line speeds on the slower sections of the route as most such opportunities were taken when the route was modernised either for the introduction of High Speed Train operation or subsequent electrification.

We are developing a scheme to extend the northbound platform at Thirsk to allow longer trains to call.

Future capacity

The signalling headways are generally considered adequate except on the Hertford Loop, particularly when trains need to be diverted, and the Moorgate branch. Capacity is generally governed by the train occupation of junctions and whilst stopping at stations, and the mix of fast and slower speed services on the long two track sections rather than headways on plain line sections.

A small power supply improvement for the overhead electrification is being funded from the Network Rail Discretionary Fund to allow the enhanced FCC peak timetable mentioned above. It involves revised switching arrangements at Palmers Green feeder station on the Hertford Loop to allow more of the limited power supply in the London area to be available for the main line.

There are a number of major capacity enhancements which we are planning to develop further in advance of the RUS:

- an additional platform at King's Cross (known as Platform Y) which can be used by electrically hauled long distance services and 12 car outer suburban services;
- grade separation of the junction at Hitchin;
- an additional island platform at Peterborough which would allow the East Anglia passenger and freight services to operate independently of services from London. The proposal also includes 775m loops for freight trains;
- improvements around Shaftholme and Joan Croft Junctions to eliminate the use of the ECML by Immingham to Aire Valley coal trains and allow them to operate over a shorter route;
- enhancement of the layout at Wakefield station;
- Holgate Junction to York station – additional line and other performance/capacity improvements.

We are also developing a number of small schemes using the Network Rail Discretionary Fund that would provide small incremental capacity benefits as well as improving performance. These are as follows:

- Huntingdon North improved line speed through turnout from up fast to up slow;
- Fletton (south of Peterborough) up slow to up fast improved line speed;
- provision of bi-directional working on the up east slow line between the Loversall Carr area and Doncaster and direct access from the down ECML route to the up yards;
- Doncaster area – improvements to signalling controls;
- improved signalling control arrangements at Darlington South Junction;
- York to Nortallerton: line speed improvements on the slow lines

Along with SYPTTE and Northern Rail, we are investigating the provision of rail services between Doncaster and a new station serving Robin Hood Airport Doncaster Sheffield on the Doncaster to Lincoln line (Route 11).

The provision of bi-directional above would reduce conflicting movements at Doncaster between these and other services thereby improving capacity and performance. The direct access from the down ECML route to the up yards would avoid complex shunting movements for some northbound freight and engineers' trains.

Figure 11 Forecast reduction in delay minutes

	2007/08	2008/09
% reduction in delay minutes	9%	17%

Future performance

The planned renewal of the overhead line equipment between King's Cross and Hitchin and in the Newark and Claypole areas should help reduce the number of equipment failures and thereby improve performance. We are also examining ways to avoid high road vehicles coming into contact with the OHL at Bathley Lane level crossing north of Newark and thereby avoiding major delay incidents

We plan to increase the line speed approaching Newcastle from the south following track slewing works later in 2007 which should improve performance in the area.

Provision of an uninterruptable power supply at Belford should avoid signalling problems when the external power supply fails.

We are investigating provision of a banner repeater signal for the signal on the curve to the north of Grantham station on the down main line which will reduce delays trains closely following another service.

Figure 11 shows the forecast reduction in Network Rail delay minutes compared with 2006/07.

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

Engineering access

There needs to be more access for both maintenance, renewal and enhancement work on the route. Network Rail will seek to manage closures to a more regular pattern in order to improve both train and asset performance and to accommodate increase in the number of trains to meet future growth.

The most difficult sections to access are those with only two tracks and limited diversionary opportunities. Maintenance access on the Scottish section of this route is particularly limited. The current access is two midweek nights every third week with only two high gauge trains operating during this period. In addition, extended access is available on Saturday and Sunday nights.

We also recognise that both freight and passenger operators wish to operate trains for longer periods than allowed at present. The lack of suitable diversionary routes in terms of electrification, gauge clearance, axle weight and permitted train length, restrict the ability of our customers to accept diversion. In order to try balancing these needs we will be undertaking an Efficient Engineering Access review of the ECML with our customers.

There is also a need to ensure integration with West Coast Main Line possessions so that at least one route is always available between London and Scotland.

Figure 12 Forecast PPM MAA

TOC	2007/08	2008/09
Northern	88.4%	90.0%
Transpennine Express	90.9%	91.5%
GNER	85.0%	87.2%
First Capital Connect	89.4%	89.8%
Central Trains	85.7%	
Midland Mainline	92.7%	
First ScotRail	90.0%	90.4%
Virgin Cross Country	85.1%	

Opportunities and challenges

We shall continue to work with the DfT, Scottish Executive, operators and other stakeholders in developing the ECML RUS. The baseline for the study will be the May 2007 timetable.

The ECML Upgrade project work undertaken by SRA and ourselves identified potential solutions for many of the capacity constraints identified previously in this Route Plan. This work is an important input for the RUS and identified a list of schemes that could be required to enable a moderate increase in the number of trains to meet at least some of the anticipated demand.

The RUS is examining which of these infrastructure schemes, and any others, are needed under various growth scenarios to deliver requirements of the industry and other stakeholders. As mentioned in previous sections, development work is continuing on number of these, taking into account emerging outputs of the RUS process and other drivers.

Also, the RUS is examining whether the introduction of a regular clock face long distance high speed services in and out of King's Cross will improve the use of capacity and provide performance benefits, particularly in advance of a programme of enhancements.

The Department of Communities and Local Government (DCLG) has proposed a substantial amount of new housing in the Home Counties, this is likely to create a significant increase in peak demand on the route, which the current service levels and infrastructure, cannot support.

Stakeholders in the North East are keen to examine opportunities that the former Leamside route between Ferryhill and Pelaw via Washington may provide and have commissioned a study.

Delivering future requirements Summary

Many parts of the route are close to capacity and there is only very limited scope to meet expected demand without major timetable changes and infrastructure enhancements.

The latter includes provision of additional track capacity, ability to handle increasing numbers of 12 car commuter in the London area, longer outer suburban platforms and increased power supplies to allow longer or increased number of electric services at the southern end of the route. The Thameslink Programme, which has now gained planning approval following the public inquiry, would provide several of the requirements at the southern end of the route.

In the meantime we are proposing a number of schemes on the route for funding by the Network Rail Discretionary Fund which, although primarily of performance or journey time benefit, will provide some marginal localised capacity improvement. These schemes taken in conjunction with each other and some more major enhancements will provide meaningful capacity improvements.

We are also planning to use our Outperformance Fund to fund some schemes and also to use it to undertake development work on some of the major schemes whilst funding of the implementation works is sought.

Our ongoing renewal plans for the route will maintain and improve route performance. We will also use these to seek opportunities to provide some enhancements.

Expenditure

Figure 13 shows the planned level of expenditure on renewals on this route over the next two years. 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 (2006/07 prices)	2007/08	2008/09
Renewals		
Track		
Plain line	35	22
Switches and crossings	15	13
Other	1	–
Track total	51	35
Civils		
Underbridges	5	5
Overbridges	1	1
Bridgeguard 3	0	1
Footbridges	0	0
Earthworks	2	1
Tunnels	0	0
Culverts	0	–
Retaining walls	0	0
Major structures	1	0
Other	0	0
Civils total	10	9
Signalling		
Resignalling	1	7
Minor works/other	3	2
Signalling total	4	9
Electrification		
AC systems		
HV switchgear	2	0
OLE re-wiring	7	–
OLE spanwires	1	–
OLE campaign change/refurbishment	3	2
OLE structures	0	–
Other	4	0
DC systems		
HV switchgear	–	0
Other	–	0
SCADA	0	–
Electrification total	17	2
Telecoms		
Concentrators		
Large	0	–
Telecoms total	0	–

Operational property		
Stations		
Managed	12	9
Franchised	3	2
Depots		
Light maintenance	5	1
Operational property total	22	12
Plant and machinery		
Fixed plant		
Point heating	0	0
Signal supply points	2	2
Depot Plant	1	0
Other	1	1
Plant and machinery total	4	3
Total Renewals	108	70
Enhancements (funded by)		
Network Rail		
Planned		
Hitchin grade separation	1	1
Wakefield new platform	1	1
LNE user worked level crossing closures	1	1
Peterborough station development	0	1
York Holgate Junction 4th line	0	1
LNE turn back services (SPAD mitigation)	0	1
Other	2	1
Total	5	6
Network Rail (RAB)		
Planned		
King's Cross Western range	2	20
King's Cross Western concourse	2	16
King's Cross Link Room & SSY	4	14
GNH interface	0	7
Bathley lane OLE enhanced protection	0	1
Utilities diversion	1	1
Palmers Green power supply modifications	1	2
York Station resectioning	1	-
ECML power supply improvements - Hitchin-Cambridge line	0	1
Other	1	4
Total	12	65
Potential schemes	8	8
Total	20	73

Other third party		
Planned		
Other	1	0
Total	1	0
Potential schemes	1	13
Total	2	13
Total Enhancements		
	26	92

The planned volume of renewals in the next two years is detailed in Figure 14.

Figure 14 Forecast volume		
	2007/08	2008/09
Track		
Plain line (km)		
Rail	39	39
Sleepers	17	22
Ballast	89	31
Total	145	92
Switches & crossings (no.)		
Complete renewal	30	27
Partial renewal/reballasting	1	–
Abandonment	–	2
S&C (equivalent units)	30	28
Other (km)		
Drainage	4	–
Civils		
Underbridges (m ²)	3,875	2,860
Overbridges (m ²)	960	396
Bridgeguard 3 (m ²)	63	237
Footbridges (m ² decking area)	–	90
Earthworks (m ² slope surface)	10,383	14,809
Culverts (m ²)	80	–
Major structures (m ²)	747	–
Signalling		
Resignalling (SEUs)	–	13
Electrification		
AC systems		
HV switchgear (cb)	12	58
OLE re-wiring (t. length)	157	–
OLE spanwires (no.)	38	–
OLE campaign change/refurbishment (t. length)	406	340
OLE structures (no.)	–	14

It should be noted that in order to manage the deliverability of our Civils, Track, 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 be replanned to subsequent years

Maintenance

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

Figure 15 Forecast expenditure

£m (2006/07 prices)	2007/08	2008/09
Maintenance	63	59

Infrastructure investment

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

Project	Project Description	Output change	Main asset type(s)	Funding	CRIP stage	Completion year	
A	Heaton Depot (08.09)	New CET Facility	Environmental improvement	Depot	Third Party Funded	8	Completed
B	Peterborough - Werrington (08.04)	Bi-directional signalling	Improved capacity and performance	Signalling	Network Rail Discretionary Funding	8	Completed
C	York Depot (08.07)	New depot	Maintenance facility for new Class 185 units	Depot	Third Party	8	Completed
D	King's Cross concentrator (08.01)	Like for like telecoms renewal	Renewal	Telecoms	Network Rail	6	2007/08
E	Doncaster telephone concentrator (08.04)	Like for like telecoms renewal	Renewal	Telecoms	Network Rail	6	2007/08
F	TPWS Optimisation Works (various)	Relocate TPWS on the approach to terminal platforms	Performance improvement	Signalling	Network Rail Discretionary Funding	6	2007/08
G	Belford uninterruptible power supply (08.10)	Installation of new equipment to manage power supplies	Improved performance	Electrification and plant	Network Rail Discretionary Funding	6	2007/08

Figure 16 Planned Infrastructure investment

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
H Pottery Bar station (08.01)	Canopy, car park and drainage repairs	Renewal	Station	Network Rail	5	2007/08
I Darlington station (08.08)	Relocate a signal and improve the overlap	Improved capacity and performance	Signalling	Network Rail Discretionary Funding	5	2007/08
J Stevenage North and South (08.01)	Renewal of S&C	Renewal	Track	Network Rail	4	2007/08
K Low Fell Jn (08.08)	Renewal of S&C	Renewal	Track	Network Rail	1	2007/08
L Northern City Line (08.02)	Renewal of the Northern City Line tunnel telephone interface equipment	Renewal	Telecomms	Network Rail	3	2007/08
M Doncaster (08.06)	River Don bridge strengthening	Renewal and improved route capability	Structures	Network Rail	5	2007/08
N Newcastle line speed increase (08.08)	Higher line speed on the down main line approaching King Edward Bridge near Newcastle.	Improved performance	Track and structures	Network Rail	6	2008/09
O Ouseburn Viaduct near Newcastle (08.09)	Strengthening	Renewal	Structures	Network Rail	3	2008/09
P South Kirkby Jn (08.05)	Renewal of S&C	Renewal	Track	Network Rail	1	2008/09

Figure 16 Planned Infrastructure investment

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
C York station (08.07)	Platform repairs, car park resurfacing	Renewal	Station	Network Rail	5	2009/10
N Hitchin (08.01)	Resignalling	Renewal	Signalling	Network Rail	4	2009/10
E Shaftolme Jn (08.06)	Renewal of S&C	Renewal	Track	Network Rail	2	2009/10
D King's Cross station redevelopment (08.01)	Station renewal works and enhancement of station facilities	Improved station facilities and additional footfall capacity	Station	Network Rail	2	2009/10
N Hitchin Cambridge Jn S&C (08.01)	Renewal	Renewal	Track	Network Rail	2	2009/10
G Temple Hirst (08.06)	Renewal of S&C	Renewal	Track	Network Rail	1	2009/10
R Benton Jn (08.09)	Renewal of S&C	Renewal (replanned from 2006/07)	Track	Network Rail	1	2009/10
A Heaton LMD (08.09)	Recondition of carriage wash plant	Renewal	Plant	Network Rail	2	2009/10
D King's Cross station (08.01)	Additional platform	Improved capacity	Station	Development and design work funded by Network Rail Outperformance Fund	5	2011/12

Figure 16 Planned Infrastructure investment

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage	Completion year
45 Grantham, Newark, York and Durham (08.04, 08.07, 08.08)	New Station Lifts	Improved access	Station	Third Party	4	2007/08
46 South Kirkby and Wakefield Westgate (08.05)	Renewal of line side signal equipment	Renewal	Signalling	Network Rail	1	2011/12
Insulated block joints upgrade works	Track improvements	Improved asset condition and performance improvements	Track	Network Rail Discretionary Fund	8	2007/08

Figure 17 highlights other schemes under consideration.

Figure 17 Infrastructure investment under consideration

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage
47 Huntingdon North S&C (08.01)	Higher line speed over the junction Up fast turnout to Up Slow	Improved capacity and performance	Track	In development for Network Rail Discretionary Funding	2
48 Hitchin Cambridge Jn (08.01)	Grade separated junction	Line speed increase, improved capacity and performance improvements	Track & signalling	Development work from the Outperformance Fund	4
49 Newcastle –Heaton (08.09)	Overhead line additional isolation sections	Allows better engineering access	OLE	Network Rail	4

Figure 17 Infrastructure investment under consideration

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage
5	W10 Gauge clearance (various)	To accommodate the carriage of deep sea container traffic on the East Coast Main Line north of Peterborough	Structures and track	In development for funding by HPUK Ltd	4
6	York Holgate 4th line (08.07)	Improved capacity and performance	Track, signalling and electrification & plant	Development work funded by the Outperformance Fund	4
7	Hitchin Cambridge Jn – Royston (08.01)	Power supply modifications to enable longer trains to operate (12-car)	OLE	Network Rail Discretionary Fund	4
8	Thameslink Programme (08.01)	Improved capacity and performance and new journey opportunities plus increase in 12 car operation of outer suburban services	All	In development. Funding to be confirmed.	3
9	Peterborough Power Signal Box (08.01 & 08.02)	Elimination of level crossings	Signalling	Network Rail	2
10	Peterborough station development and new island platform (08.01)	Improved station facilities, performance and capacity	Station	Development work funding by Network Rail Outperformance Fund	2
11	Shaftholme Jn (08.06)	Improved capacity and performance and freight journey time improvements	Track and signalling	Development work funding by Network Rail Outperformance Fund	2

Figure 17 Infrastructure investment under consideration

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage
AF Huntingdon and St Neots (08.01)	Car Park extension	Improved customer facilities	Station	Third Party	1
V York-Northallerton (08.07)	Up and Down Slow lines speed increase	Journey time benefit. Performance improvement	Signalling & track	Network Rail Discretionary Funding	1
E Doncaster Loversall Carr Jn (08.04)	New Signalled Routes between Loversall Carr Junction and Doncaster	New bi directional signalling to reduce the time it takes freight to access / egress Doncaster Yards and allow Lincoln services to access Platform 2	Signalling	Development funding from Network Rail Discretionary Fund	1
V Bathley Lane Level Crossing (08.04)	Enhanced overhead line protection	Improved performance	Overhead line	Network Rail Discretionary Funding	1
E Doncaster Area (08.04, 08.05 & 08.06)	Signal Approach control improvements	Performance improvement	Signalling	Development funding from Network Rail Discretionary fund.	1
D Kings Cross (08.01)	Resignalling and track renewals	Renewal and opportunities for layout enhancement	Track, signalling and OLE	Network Rail	1
AA Fletton (08.01)	Line speed increase	Performance improvement	Track	In development for Network Rail Discretionary Funding	1
X Grantham (08.04)	Banner repeater	Performance improvement	Signalling	In development for Network Rail Discretionary Funding	1
Y Thirsk (08.07)	Platform Extension (Down)	Improved capacity for longer trains	Station	In development for Network Rail Discretionary Funding	1

Figure 17 Infrastructure investment under consideration

Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage
M Wakefield Westgate station (08.05)	Platform extensions, new platform loops and relocated station buildings and footbridge	Improved station facilities, capacity and performance	Station, track, signalling, electrification & plant	In development by West Yorkshire PTE for a mixture of funding mechanisms	1
Z Northern Gauge Improvements (various)	Gauge clearance of the route from Doncaster to Edinburgh	To accommodate the carriage of deep sea container traffic from East Coast Ports to NW England, Scotland and the Midlands	Structures and track	In development for various potential funding mechanisms including TIF	1
U Hertford loop enhancement (08.03)	Improved signalling headways, loops at Gordon Hill and additional S&C at Stevenage	Improved capacity	Signalling, track and OLE	Development funding to be confirmed	1
M Hemsworth Loops (08.05)	Increase the turn in and turn out speed to the loops	Improved performance and capacity	Track and signalling	Development funding to be confirmed	1
A Newcastle Station Masterplan (08.08)	Redevelopment of the station, adjacent properties and provision of new station access	Improved station facilities and capacity.	Station	In development for Third Party funding	1
AG Palmers Green	Power supply modifications at the switching station	Power supply improvements	OLE	Potential Network Rail Discretionary Funding	1
C York Station (08.07)	Overhead line additional isolation sections	Allows better engineering access	OLE	Network Rail	1
Level crossing de-staffing	Level crossing modernisation	Operational efficiencies and safety improvements	Signalling	In development for Network Rail Discretionary Funding	3

Figure 18 highlights Route Enhancement aspirations

Figure 18 Route enhancement aspirations						
Project	Project Description	Output change	Main asset type(s)	Funding	GRIP stage/status	
1	Stevenage S&C (08.01)	New S&C units Down Slow to Down Fast and Up Fast to Up Slow to give better access to/from Hertford loop	Improved capacity and performance	Track, signalling, electrification & plant	–	Absorbed into Hertford Loop Improvements
2	Alconbury (08.01)	Connection to proposed freight terminal	New freight operations	Track, signalling, structures and electrification & plant	In development for Third Party funding	On Hold
3	Hitchin Cambridge Jn (08.01)	Line Speed Increase	Being Taken forward under the Hitchin signalling and track renewals scheme and the Grade Separated Junction schemes.	Track, signalling and OLE	–	–
4	Temple Hirst Jn (08.06)	Remodelling	Improved Capacity and Performance	Track and signalling	Potential Network Rail Discretionary Funding	1

Non infrastructure developments

Figure 19 highlights the non infrastructure developments.

Figure 19 Non infrastructure developments				
Project	Project Description	Output change	Main asset type(s)	GRIP status
Smartcard introduction	Revenue protection & flexible ticketing	Simplified ticket purchase. Under discussion between TfL and affected operators.	Station.	To be confirmed

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	No of Tracks
08.01	King's Cross – Peterborough	ECM1	Primary	DfT	No	W9 (W6/8)	RA9	125	25kV	TCB	3 (4/5)	4(2/3/5/6)
08.02	Moorgate Branch	MEB	London & SE	DfT	No	W6	RA9	30	650V DC (25kV)	TCB	4.5	2
08.03	Hertford Loop	HDB	London & SE	DfT	No	W9	RA9	75	25kV	TCB	5 (3)	2
08.04	Peterborough – Doncaster	ECM1/ FWR1/ FWR2	Primary	DfT	No	W9	RA9	125	25kV	TCB	4 (5)	2(4/5)
08.05	Doncaster – Holbeck W Jn	DOL1/2	Primary	DfT	No	W9 (W8)	RA9	100	25kV	TCB	3.5 (3/4)	2
08.06	Doncaster – Colton Jn	ECM2/3	Primary	DfT	No	W9	RA10	125	25kV	TCB	4	2
08.07	Colton Jn – Northallerton	ECM4/5	Primary	DfT	No	W9	RA9	125	25kV	TCB	4 (3/5)	4
08.08	Northallerton – Newcastle	ECM5	Primary	DfT	No	W9	RA9	110	25kV	TCB	3 (4)	2
08.09	Newcastle – Border	ECM6/ ECM7	Primary	DfT	No	W9	RA9	110	25kV	TCB	3	2
08.10	Border – Edinburgh	ECM7/ ECM8	Primary	Transport Scotland	No	W9	RA10	105	25kV	TCB	3	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	No of Tracks
08.11	North Berwick Branch	NBK	Secondary	Transport Scotland	No	W7	RA5	50	25KV	TCB	5	1

Capacity and operational constraints

- | | |
|---|---|
| A | Alexandra Palace to Welwyn: tunnel aerodynamics and curvature |
| B | Offord: curvature |
| C | Stilton Fen ground conditions |
| D | Peterborough: complex station layout |
| E | Stoke Tunnel: aerodynamics |
| F | Grantham: curvature |
| G | Peascliffe Tunnel: tunnel aerodynamics |
| H | Newark: flat crossing of Nottingham – Lincoln line |
| I | Gamston – Retford: curvature and location of S&C |
| J | Bawtry: curvature |
| K | Doncaster: complex station layout |
| L | Shaftholme Junction: location of S&C |
| M | York: curvature and complex station layout |
| N | Croft: curvature over Tees river bridge |
| O | Darlington – King Edward Bridge: curvature of track |
| P | Newcastle – Edinburgh: curvature of track and level crossings |

Note

This Route Plan forms part of the business plan suite of documents which is produced annually and in accordance with our network licence condition 7. Our plans and the way in which we intend to achieve those plans are summarised in the Business Plan itself. This document provides further detail on the specific plans for this Strategic Route including the expenditure over the next two years to the end of Control Period 3.

This year our business plan focuses on the remainder of Control Period 3 (to March 2009). We shall provide a submission to the Office of Rail Regulation in October 2007, which will set out our view of the expenditure and activities that will be required in Control Period 4 (2009/10 to 2013/14).

The Route Plan shows in more detail how the strategies set out in the Business Plan will be delivered at a route level across the network, and how we are working with our customers and other stakeholders to improve the

performance and utilisation of the network. It presents a portfolio of activities to develop the network.

The expenditure section contains tables showing the planned level of expenditure and volumes on renewals on the route over the next two years, split by asset category. Expenditure figures are shown in 2006/07 prices, and are rounded to the nearest £1 million. An entry of £0 indicates spend of less than £0.5 million. 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.

Please note that figures in tables may not sum to the totals shown, because of rounding.

The other documents in the business plan suite can be found on the Network Rail website www.networkrail.co.uk



This Route Plan is part of a set.
To view or download the others
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