Route Plans 2009
Route 9
North East Routes

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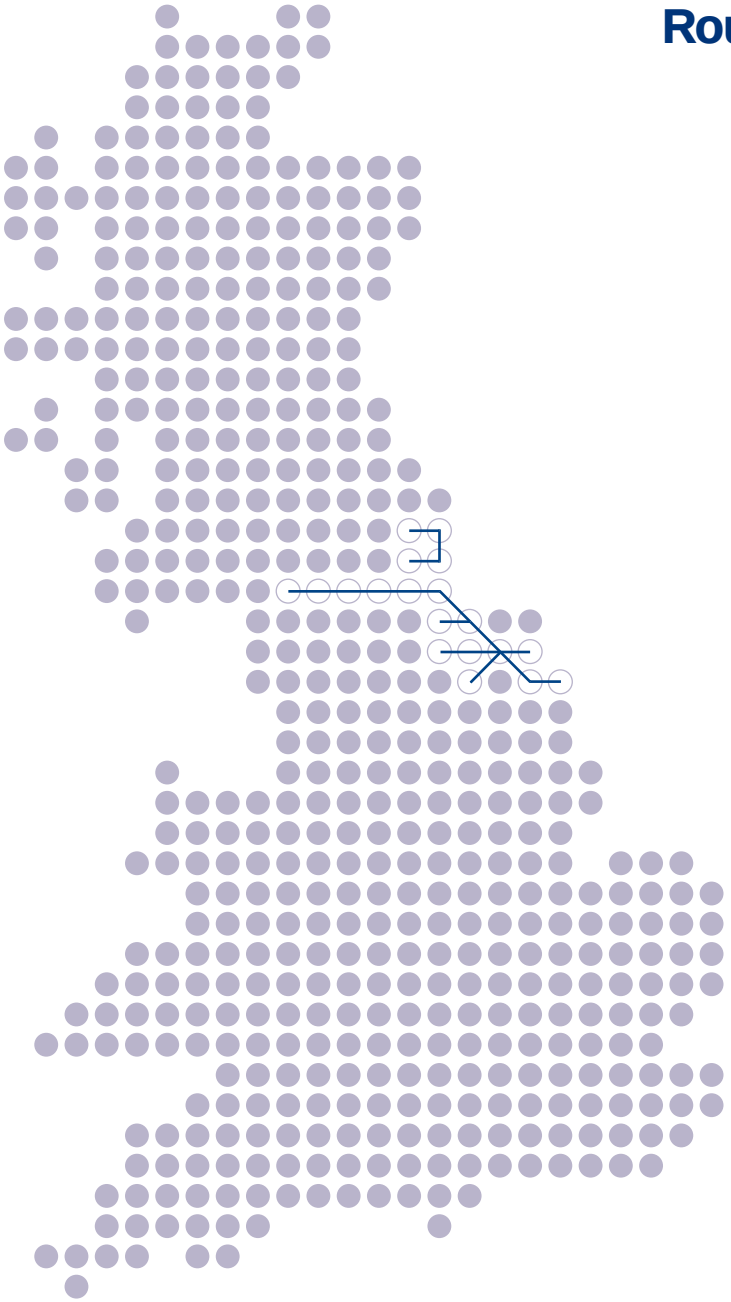
Route 9 North East Routes



Section 1: Today's railway

Route context

This route provides passenger links between locations on the rivers Tyne, Wear and Tees into Newcastle and Darlington, thereby providing rail connections to other parts of the country. It also handles long distance flows from Tyneside to Carlisle and western Scotland and between the Tees Valley and the North West via Northallerton and Leeds. There are also branches to Bishop Auckland and Saltburn. The Middlesbrough to Whitby line is a designated community railway, led by the Esk Valley Railway Development Company.

There is a substantial volume of freight traffic, particularly from the Tees Valley, but traffic is growing from the Port of Tyne and on the freight only Blyth and Tyne network. The route is also used by some through traffic which is diverted off the congested East Coast Main Line (ECML).

It competes with an extensive road network which accesses many of the communities better than the rail network, the latter often being focused on the former mining and industrial areas.

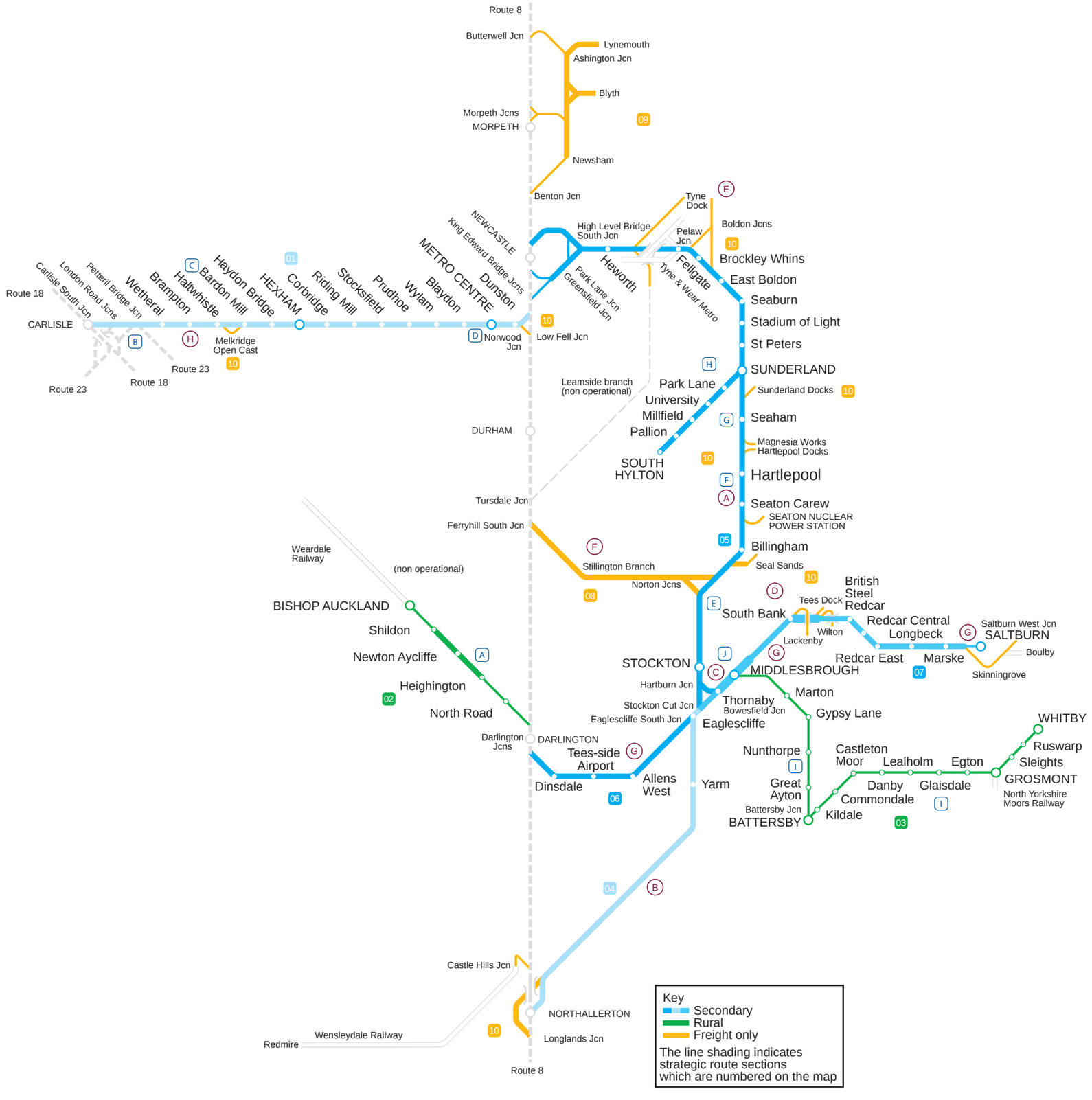
On behalf of the industry and other stakeholders, we have been leading the ECML Route Utilisation Strategy (RUS) which includes the North East routes. The DfT has published its Regional Planning Assessment (RPA) for the North East which has informed the compilation of the RUS. The RUS was published on 29 February 2008.

Today's route

The principal components of the North East Route are described below. The relevant Strategic Route Section is shown in brackets:

- the line from Northallerton to Newcastle via the Durham Coast through Stockton, Hartlepool and Sunderland including the South Hylton branch (09.04 and 09.05)
- the Newcastle – Hexham – Carlisle route (09.01);
- Darlington – Middlesbrough – Saltburn (09.06 and 09.07)
- the single track branches from Darlington to Bishop Auckland and Middlesbrough to Whitby (09.02 and 09.03)
- freight only lines: the through line from Norton Junctions to Ferryhill (sometimes used for passenger train diversions), the Blyth and Tyne network and a selection of freight branches (09.08, 09.09 and 09.10).

Route 9 North East Routes



Current passenger and freight demand

Apart from the peak hours, this route sees a low usage per head of population despite several lines having a frequent level of service. This reflects the existence of a comprehensive bus network in the area, which in many cases penetrates closer to key areas of demand. The exception is the busy Sunderland to Gateshead Metrocentre corridor; some of which forms both part of the national rail network and the Nexus Metro system.

However, some peak hour services at Middlesbrough and Newcastle are now experiencing crowding reflecting increasing congestion on the road networks.

The freight markets are quite varied with the route serving the ports on the rivers Tyne and Tees, and Seaham Harbour. It also serves the industrial complexes in the Tees Valley, the potash mine at Boulby, and the Blyth area. A further freight use is for the diversion of some trains off certain congested sections of the East Coast Main Line (ECML) between Northallerton and Newcastle with such trains running via Eaglescliffe and Norton Junctions, and either rejoining the ECML at Ferryhill or running via the Durham Coast.

Current services

Passenger services are provided by Northern Rail, First Keolis TransPennine Express (TPE), the North Yorkshire Moors Railway and Grand Central. Freight trains are operated by DB Schenker Rail (UK) Limited, Direct Rail Services, Freightliner Limited and Freightliner Heavy Haul.

Much of this route sees passenger traffic at a level of no more than 2tph. However, from Pelaw (Gateshead) to Sunderland the route carries the frequent Tyne and Wear PTE (Nexus) Metro trains to South Hylton and the hourly Northern Rail service between Newcastle and Middlesbrough via the Durham Coast. Some freight services run on this section, apart from services diverted off the ECML being primarily those serving the Port of Tyne and Seaham docks.

From Newcastle, the line to Carlisle sees 4tph as far as Metrocentre reducing to 2tph west thereof, one to Hexham, and one which runs to Carlisle or beyond. It sees some Anglo-Scottish coal traffic – especially when the Settle and Carlisle line (Route 21) is closed for engineering works – and a variety of bulk products including quarried material from Shap. Its limited gauge clearance precludes most intermodal traffic.

A service of three long distance high speed trains each way per day runs between Sunderland and London King's Cross via Hartlepool and Eaglescliffe run by open access operator Grand Central.

In the Tees Valley there is an extensive freight train operation alongside a frequent local train service and regional express trains. Regular local passenger services comprise 2tph operating between Saltburn and Darlington, extending every two hours to/from Bishop Auckland and the hourly service from Middlesbrough via the Durham Coast to Newcastle. There is an hourly TPE train to Manchester Airport which also links Teesside with the regional centres of York, Leeds and Manchester and gives connectional opportunities for many other destinations. There are typically four trains each way per day throughout between Middlesbrough and Whitby with further local journeys between Middlesbrough and Nunthorpe. North Yorkshire Moors Railway seasonal services from Pickering to Whitby join the line at Grosmont.

The Tees Valley sees intensive freight activity relating to the ports, the steelworks at Lackenby (Redcar) and the various petro-chemical plants together with potash traffic from Boulby. There is a regular movement of quarried material from Shap to Teesside. North of Newcastle, the route includes the Blyth and Tyne railway which currently sees a low, but increasing, level of freight activity, relating to the production of aluminium and imported coal.

Figures 1 and 2 show the current level of service to each of Newcastle and Middlesbrough from principal stations.

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

Originating station	tph to Newcastle (including Nexus platforms)
Carlisle	1
Hexham	2
Metrocentre	4
Sunderland	6
Middlesbrough	1

Figure 2 Middlesbrough– current train service level (trains per hour)

Originating station	tph to Middlesbrough
Saltburn	2
Darlington	2
Newcastle	1
Sunderland	1
Leeds	1

Figure 3 shows the total annual tonnage levels on the route.

Traffic volumes are summarised in Figure 4.

Figure 3 Tonnage

Figure 4 Current use

	Passenger	Freight	Total
Train km per year (millions)	5	2	6
Train tonne km per year (millions)	404	1,555	1,958

Current infrastructure capability

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

Figure 5 Linespeed

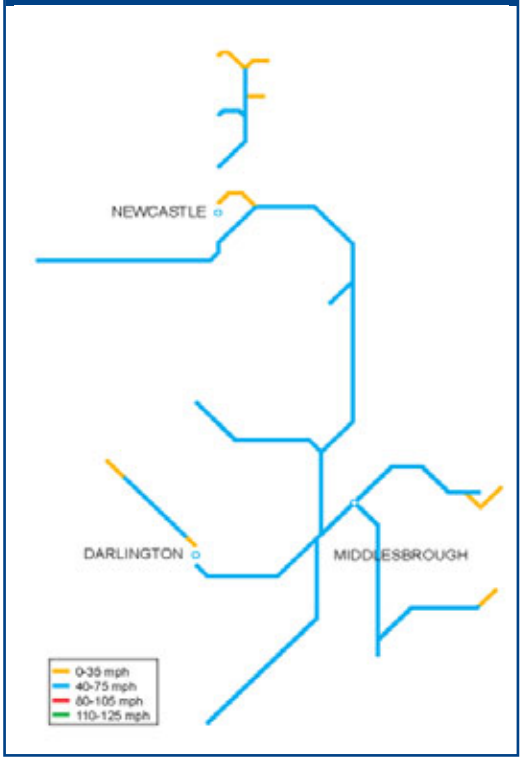


Figure 6 Electrification

Figure 7 Route availability

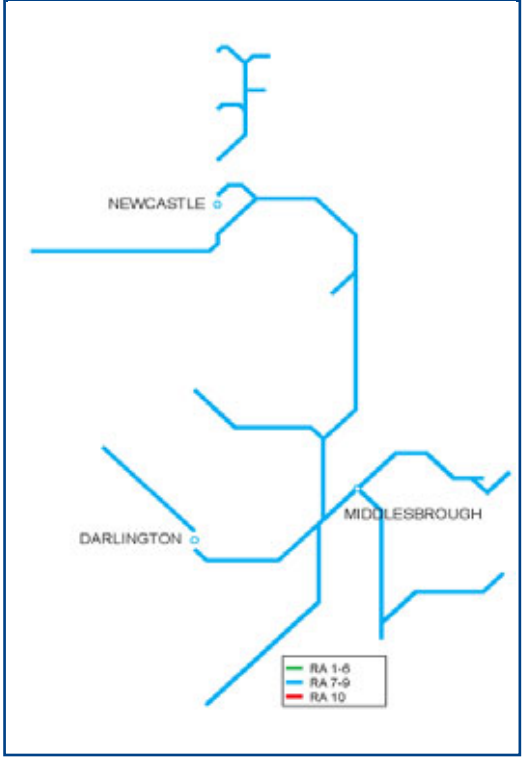


Figure 8 Gauge

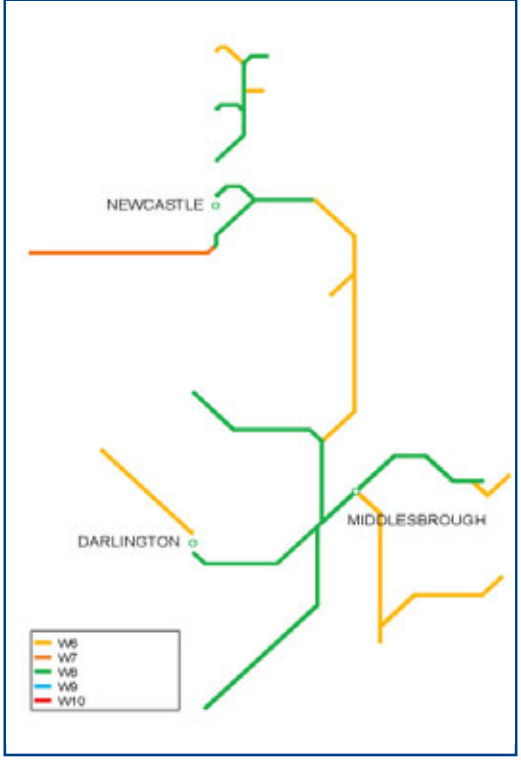


Figure 9 current train service levels (peak trains per hour)

Route section	Number of trains
Sunderland – Pelaw	7
Eaglescliffe – Thornaby	7
King Edward Bridge – Metrocentre	5
Metrocentre – Hexham	3
Hexham – Carlisle	2
Middlesbrough – Redcar	4

Current capacity

There are currently few significant capacity issues on the North East route though the Pelaw to Sunderland section is close to capacity in some hours due to the mix of Metro trains, heavy rail passenger services and freight traffic. The mix of traffic between Newcastle and Hexham also causes a few capacity issues. Capacity is limited on the freight route between Norton-on-Tees and Ferryhill.

Figure 9 shows the current train service level in key sections of the route.

Current performance

Figure 10 shows the forecast 2008/09 Public Performance Measure (PPM) for the main TOCs running along the route.

The main causes of delay on this route are due to track defects, trespass and vandalism, and more recently cable theft.

For some time we have been experiencing significant delays in the Bowesfield to Thornaby area due to a severe speed restriction imposed over the Tees Bridge.

Figure 10 2008/09 PPM

TOC	Forecast MAA	As at period
Northern Rail	89.4%	10
TransPennine Express	90.2%	10

Section 2: Tomorrow's railway: requirements

HLOS output requirements

Figure 11 Total demand to be accommodated by Strategic Route

Route	Annual passenger km (millions) forecast in 2008/09	Additional passenger km (millions) to be accommodated by 2013/14
North East Routes	156	13

Figure 12 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 (%)
Newcastle#		13% increase on 2008/09	41		16% increase on 2008/09	46

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

Figure 12 shows how the HLOS load factor targets are met by the proposed strategy. The measures will also allow the total additional passenger kilometres to be accommodated.

Future demand in CP4

In the North East area, standard industry forecasting techniques predict very low growth in demand for journeys, but passenger travel has grown by almost five percent per year over the past six years. Therefore the RUS has used a different methodology which gives a growth of up to four percent per year over the next 10 years. This reflects a view that growth in employment would continue to generate new commuting trips into the main urban areas, and wider economic growth would encourage new business and leisure journeys.

A continuation of freight growth is expected at both Teesport and Port of Tyne with a variety of bulk products and container traffic while the Port of Blyth is expected to generate further bulk traffic. Teesport has recently gained planning consent for facilities to handle deep sea container ships.

Future demand beyond CP4

Looking at the Network as a whole, the 2007 Government White Paper 'Delivering a Sustainable Railway' anticipated a doubling of both passenger and freight traffic over the next 30 years, although recognising there could be wide local variations.

It is likely that demand for local passenger journeys will continue to grow at a similar rate to that expected during CP4. This is unlikely to give rise to a need for many new services though there may be opportunity to make use of additional peak hour rolling stock and unused network capacity to provide a small number of additional services.

Freight trends are sometimes less easily predicted, an example being that long term patterns of supply of coal to the electricity industry do not follow readily-forecast trends. All the evidence, however, suggests that with present patterns in demand coupled with the expected increasing gauge clearance on the network to W9/W10 or above there will continue to be strong intermodal growth. Running of additional passenger services on the ECML alongside such growth may give rise to a need for enhancement and increasing use of the parallel route via Eaglescliffe, Stockton and Ferryhill possibly coupled with reinstatement of the disused Leamside route between Ferryhill, Washington and Pelaw Junction.

Section 3: Tomorrow's railway: strategy

Figure 13 summarises the key milestones during CP4 in delivering the proposed strategy for the route. Further explanation of the key service changes and infrastructure enhancements are set out in the following sections.

Figure 13 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2009 onwards	Progressive lengthening of selected peak hour services	None	Meet HLOS growth and crowding targets
2009-2014	No specific service changes	Value for money enhancements in association with planned renewal	Improved capacity, journey times and performance
2011	Additional freight services	Reinstatement of Boldon East Curve	Increased freight train capacity for bulk services to/from Tyne Dock by avoiding the congested section of the ECML between Newcastle and Northallerton

Figure 14 Capacity enhancements to meet HLOS peak capacity in CP4

Description	Additional vehicles involved	Station served	0700 – 0959 Capacity Impact	0800 – 0859 Capacity Impact
Lengthening of local train services	9	Newcastle	1,100	1,100

The table below shows how the HLOS load factor targets for locations on the route are met by the proposed strategy. The measures will also allow the total additional passenger km to be accommodated.

Figure 15 Impact on HLOS peak capacity metric

London Terminals and regional Hubs	Peak three hours				High peak hours			
	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4	Demand end CP4	Capacity start CP4	Capacity end CP4	Load factor end CP4
Newcastle*	31300	9,800	11,100	40%	14,300	3,800	4,900	46%
Other regional hubs		61,500	66,600			22,000	26,500	

* included in aggregate target across a number of regional hubs

Strategic direction

The ECML RUS was published on 29 February 2008. The main areas for study in relation to this route were dealing with peak hour growth and crowding, and examining the RPA suggested interventions.

As with most of the areas of the country that are expected to see ongoing commuter growth, the strategy is to lengthen existing services. Fortunately on the North East routes this does not require platform lengthening until well into the future. DfT's Rolling Stock Plan published on 30th January 2008 provides additional rolling stock to permit train lengthening.

The relevant RPA interventions which have been examined in the RUS are:

- new Sunderland – Darlington service
- improved journey times on the Durham Coast, Tees Valley services, and on the Newcastle – Carlisle line
- improved links between the Durham Coast, Yorkshire and London
- viability of one or more new stations on the Durham Coast.

The RUS found that introducing new services did not provide value for money. In some cases this was due to the costs of the additional rolling stock. However, there may be an opportunity to use the additional rolling stock required for peak hour growth to make some service changes.

Opportunities to improve line speeds will be examined when renewal is undertaken. The RUS could not recommend any additional stations on the Durham Coast routes. This should be reviewed when a significant change in 'travel to work' patterns occurs or a third party is interested in funding the cost of a station.

We are working with stakeholders in the Tees Valley on options to provide a 15-minute frequency and faster service between Saltburn and Darlington to link in to a number of development sites with a 'metro' type service. The scheme would also include some additional stations.

Another area of study with local stakeholders is the possible reintroduction of passenger services on parts of the Blyth & Tyne freight network.

Future train service proposals

Figure 16 indicates the forecast change in tonnage to 2018.

Grand Central

Grand Central currently operates three daily return services between Sunderland and King's Cross with plans for a fourth return service.

It aspires to operate an additional two daily return services between Middlesbrough and King's Cross (as part of the Sunderland service group).

Northern Rail

Peak hour crowding on North East local services is likely to be addressed through train lengthening rather than additional services, at least in the short term. However, there may be opportunities to use the additional peak hour resources to alter some existing services to address both peak growth and new service opportunities.

During CP4 some Northern Rail services into Middlesbrough and Newcastle will require strengthening. Strengthening of some other North East services is covered in Route 8.

TransPennine Express

TPE aspires to operate a regular clock-face timetable throughout the day to and from Middlesbrough.

The only other anticipated driver of service change will be the various options which we are developing with local stakeholders.

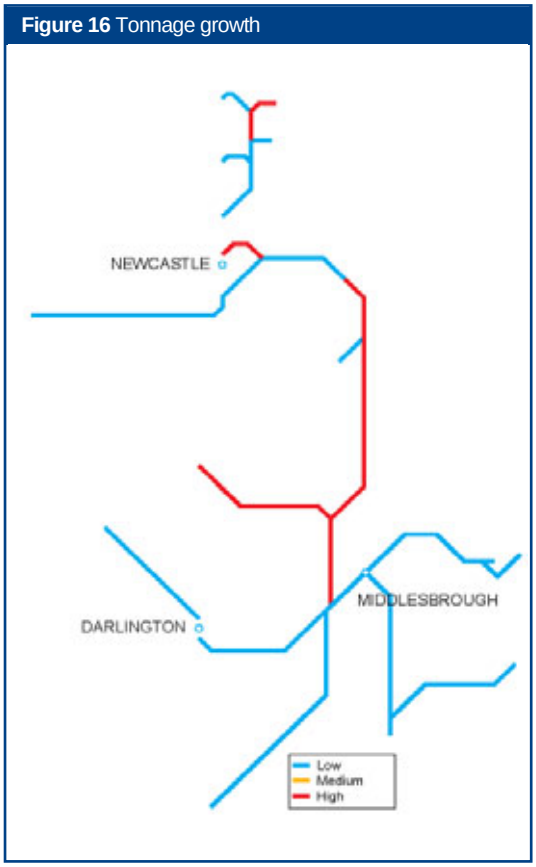
Future capability

We are working with DfT and other stakeholders on development work for W9, W10 and W12 gauge enhancement on a number of 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.

A key aspiration is for access to Teesport and the Port of Tyne with intermodal traffic including 9'6" deep sea containers. Direct access to Teesport from the ECML requires works on Yarm tunnel (although an alternative may exist via Darlington and Dinsdale) while clearance of the Eaglescliffe – Stockton – Norton South Junction – Ferryhill would be needed as a key diversionary line for gauge sensitive traffic to the Port of Tyne.

The line through Sunderland and the Newcastle to Carlisle line would both need significant structures works to improve the current gauge.

Figure 16 Tonnage growth



Line speeds are relatively low on various sections where the current rolling stock could attain higher speeds. On some of these, curvature and other infrastructure issues preclude an easy solution to increase speeds.

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

Future capacity

Shortening the Hartlepool to Dawdon block section as part of the Durham Coast resignalling scheme will provide additional capacity to assist with freight and passenger growth on the Durham Coast, as well as allowing it to be used more extensively for diversions off the ECML.

We are also looking to improve the headways and line speed on the Stillington route, between Stockton and Ferryhill, which would improve capacity as well as providing improved journey times (including for diversions off the ECML).

The Freight RUS has identified that the increase in bulk freight traffic expected out of Tyne Dock should be routed via the Durham Coast, so as to avoid the

capacity bottleneck on the ECML south of Newcastle. This would require the reinstatement of Boldon East curve.

Some capacity enhancements will be necessary in order to accommodate the aspiration for a 15 minute frequency service between Saltburn and Darlington (currently under development as Tees Valley Transport Solutions). Part of the development work we are undertaking will identify what schemes would be necessary under each option being considered.

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

Future performance

Figure 17 sets out the planned PPM for each train operator.

We are managing a number of initiatives, involving considerable resources, to combat the huge rise in cable theft incidents.

Reconstruction of a large bridge over the River Tees near Thornaby will improve both asset condition and performance, by removing an onerous speed restriction across the present structure.

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. Their performance is expected to reach 89.4 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.

The key performance issues and opportunities for this Train Operating Company (TOC) have been identified as:

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

TransPennine Express

The other operator on this route is TPE. The future performance section for TPE can be found in the plans for Routes 10 & 11.

Figure 17 Forecast PPM MAA — CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
Northern Rail	90.1%	90.7%	91.2%	91.7%	91.8%
TransPennine Express	91.7%	92.2%	93.2%	93.8%	94.0%

Network availability

As a result of its heavy use by freight traffic, the Northallerton to Thornaby section requires significant maintenance. With a 24 hour per day spread of train services, and no convenient diversionary options, engineering access is not easily achieved on this line. As a result, the efficiencies associated with lengthy possessions are not readily obtainable.

We will continue to work with our customers to find innovative ways to make improvements to access across Route 9.

Implementation of the Seven Day Railway initiative on the East Coast Main Line will lead to increased use of the Durham Coast route as a diversionary facility for ECML trains. This will be facilitated by the Durham Coast signalling enhancement scheme. As such, the route will increasingly need to form part of the overall strategy for maintaining access between England and Scotland, involving also the West Coast Main Line (WCML), Settle & Carlisle, Newcastle – Carlisle and Glasgow & South Western (G&SW) so that at least one route is always available between London and Scotland.

Long term opportunities and challenges

Network Rail has recently completed work with the DfT and other stakeholders to develop the ECML RUS, which was published on 29 February 2008, and covers all of the North East Route.

Train lengthening and some additional services are the likely longer term strategies to deal with peak hour growth.

Some North East stakeholders are keen to examine opportunities that the reopening of the former Leamside route (from Ferryhill to Pelaw via Washington) may provide, and have commissioned a study. The RUS has identified a number of drivers that could provide a business case for reopening the route, particularly when combined with local stakeholder aspirations.

Infrastructure investment in CP4

Figure 18 Infrastructure Investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓐ Durham Coast resignalling enhancement elements	Shortening of the signal block section between Hartlepool and Dawdon	Increases capacity, improves performance, and allows increased use for diversions	Network Rail Discretionary Fund	5
2010/11	Ⓓ W9 and W10 gauge clearance	Gauge clearance from Teesport to the ECML and other North East lines	Accommodate the carriage of deep sea container traffic and swapbody traffic and provide diversionary capability for such traffic using the ECML	Subject to agreement	1
2011	Ⓔ Reinstatement of Boldon East Curve	Reinstatement of the link, to bring Tyne Dock bulk freight directly onto the Durham Coast line, hence avoiding the congested ECML between Newcastle and Northallerton	Increased capacity and improved performance	Network Rail	1
2012–14	Ⓖ Darlington – Saltburn service improvements (Tees Valley Transport Solutions)	Capacity and line speed schemes and new stations to better serve existing locations and new development sites	Doubling of local train frequency and improved journey times and performance	Third party	1

NRDF candidate schemes in CP4

Figure 19 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓗ Haltwhistle – Low Row	Line speed increases	Improved performance	Network Rail Discretionary Fund	1
2009/10	Ⓑ Northallerton – Eaglescliffe	Line speed increases	Improved journey times	Network Rail Discretionary Fund	1
2009/10	Ⓒ Bowesfield Jn – Tees Bridge	Linespeed improvement through track realignment, as part of Tees Bridge works and S&C renewal	Improved performance and journey times	Network Rail Discretionary Fund	1
2011/12	Ⓕ Stillington Branch Phase 1	Shortening of the block section	Route capacity, improved performance and journey times	Network Rail Discretionary Fund	3
2011/12	Ⓕ Stillington Branch Phase 2	Line speed increases (including removal of some existing speed restrictions)	Route capacity, improved performance and journey times	Network Rail Discretionary Fund	3

Renewals activity

Figure 20 shows the estimated renewals costs and activity volumes.

The precise timing and scope of renewal 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 20 Summary of estimated renewals costs and activity volumes

£m (2009/10 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	CP4 total
Renewals						
Track	2	5	5	4	3	19
Signalling	12	15	5	4	3	38
Civils	12	14	6	6	5	42
Operational property	4	2	3	4	3	16
Electrification	0	0	0	0	0	1
Telecoms	1	1	1	1	1	5
Plant and machinery	0	0	0	0	0	1
Total	**31**	**37**	**20**	**19**	**16**	**122**
Renewals volumes						
Track						
Rail (km)	6					
Sleeper (km)	6					
Ballast (km)	5					
S&C (equivalent units)	1					
Signalling						
SEUs (conventional)	21	67	3	0	0	91
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	4	5	3	0	12

Appendix

Figure 21 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
09.01	Newcastle – Carlisle	NEC1/2	Secondary	DfT	No	W7	RA9	65mph	None	AB	7 (10) mins	2
09.02	Darlington – Bishop Auckland	DAE1/2	Rural	DfT	No	W6	RA9	45mph (20/35mph)	None	OTW (AB)	14	1(2)
09.03	Middlesbrough – Whitby	MBW	Rural	DfT	Yes	W6	RA7	50mph (45/30mph)	None	OTW	34	1
09.04	Northallerton – Stockton Cut Junction	LEN	Secondary	DfT	No	W8	RA9	70mph	None	TCB	6 (7)	2
09.05	Stockton East Junction – Newcastle	LEN3	Secondary	DfT	No	W6	RA9	60mph (50/20mph)	None (1500V DC)	AB (TCB)	17	2
09.06	Darlington – Eaglescliffe S Junction	DSN1	Secondary	DfT	No	W8	RA9	60mph	None	AB (TCB)	5	2
09.07	Stockton Cut Junction – Saltburn	DSN2/3	Secondary	DfT	No	W8	RA9	60mph	None	TCB (AB)	8	2 (1/4)
09.08	Stillington Branch	STF	Freight	DfT	No	W8	RA9	40mph (20mph)	None	AB	Various	2
09.09	Blyth and Tyne Network	EJM	Freight	DfT	No	W8	RA9 (RA6)	45mph (20mph)	None	AB (OTW)	Various	2 (1)
09.10	Other freight Branches	Various	Freight	DfT	No	W8	RA9	Various	None	Various	Various	1(2)

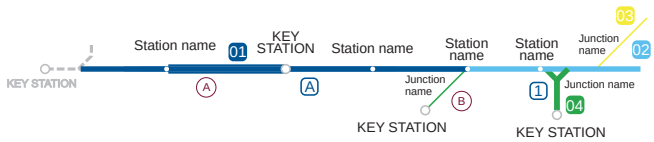
Capacity and operational constraints
A Bishop Auckland – Darlington: S&C at Shildon, Heighington and Hopetown
B Carlisle South Junction – Petteril Bridge Junction: flat junctions and section of single line
C Whitchester (near Haltwhistle): tunnel clearance
D Blaydon – Newcastle: line curvature and S&C
E Middlesbrough – Billingham: S&C and line curvature
F Hartlepool: line curvature and single platform line through the station
G Dawdon: line curvature and long block section to/from Hartlepool
H Sunderland: S&C and Monkwearmouth Bridge
I Middlesbrough – Whitby: level crossings and token exchange arrangements
J Eaglescliffe – Middlesbrough: track curvature and Tees Bridge

Note

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

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

Key to route diagrams



Capacity and operational constraints
Location: capacity or operational constraint

Issues on the route
Location: issue on the route

Key planned projects
Location: planned project on the route

Strategic route sections
Listed in the appendix of the route plan

Other symbols

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

Track descriptions

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

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

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

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

GRIP stages

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

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visit www.networkrail.co.uk

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