Route Plans 2008
Route 20
North West Urban

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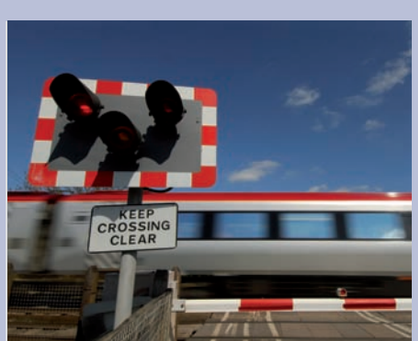
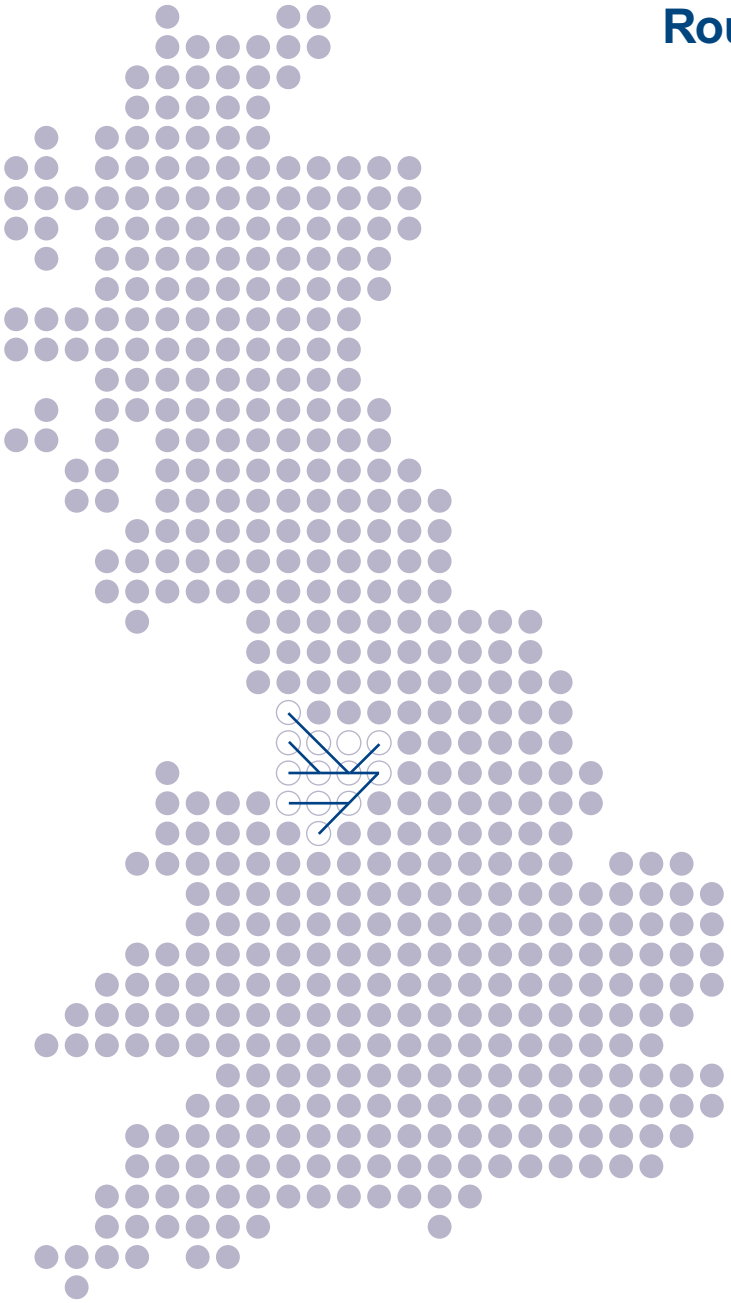


Route 20 North West Urban



Section 1: Today's railway

Route context

This route covers the main urban areas in North West England and is located either side of the West Coast Main Line (WCML) – Route 18. It is focused on the penetrating routes to central Manchester and Liverpool Lime Street. It also covers the neighbouring parts of Cheshire, Derbyshire, Warrington, Halton, Blackburn with Darwen, and Lancashire, including resorts at Blackpool, Southport and Buxton. This route comprises the northern end of the long distance national rail markets into both Manchester and Liverpool, particularly the important West Coast flows from London and cross country/interurban routes from the West Midlands, South Wales and the south. It also forms the western end of important Transpennine routes from the North East. Other key services operate to Cumbria, North Wales, north Lancashire and the Fylde. The route includes the suburban and commuter rail network in Greater Manchester and the City Lines into Liverpool, supported by Greater Manchester Passenger Transport Executive (GMPTE) and Merseytravel. Rail has a major role in providing surface access to Manchester Airport, and plays an increasing role for Liverpool John Lennon Airport. Although some lines have no freight services, overall this is a mixed-use railway. There are substantial freight flows on long distance routes to Manchester Trafford Park, to Seaforth/Liverpool Bulk Handling Terminal and on the North and South Transpennine routes.

Along the Liverpool to Manchester corridor, there are motorway and major road alternatives to all routes, but these can be heavily congested.

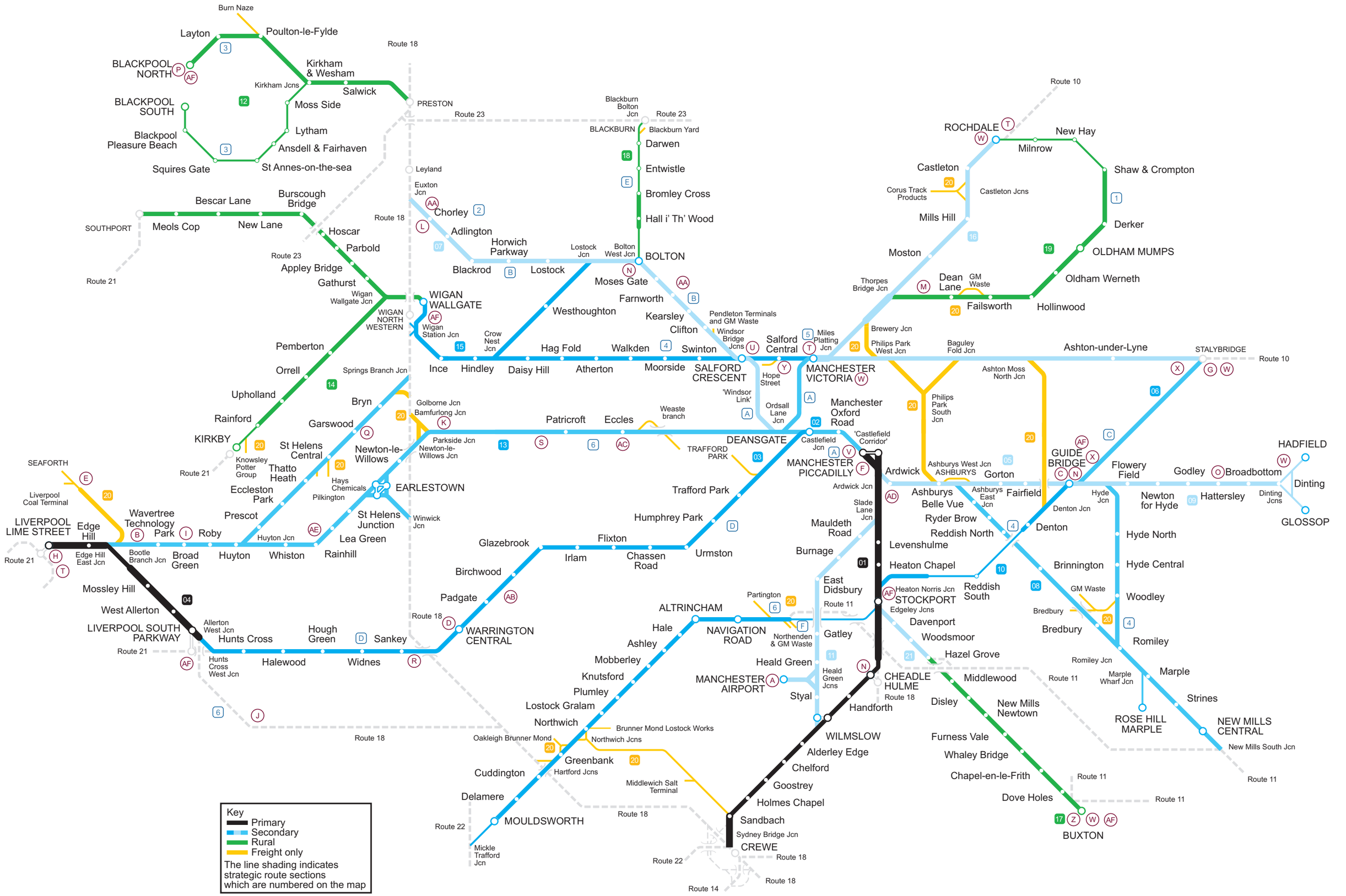
The route was the subject of the North West Route Utilisation Strategy (RUS), which was published in May 2007.

Today's route

The principal elements of the route are described below with the relevant Strategic Route Section shown in brackets:

- branches off the WCML from Crewe to Manchester Piccadilly via Stockport (22.01), the Styal line including the branch to Manchester Airport (20.11) and the Allerton to Liverpool Lime Street line (20.04);
- the main routes between Manchester and Liverpool including both the CLC (20.03) and via Chat Moss line and the branch through St Helen's Central (20.13);
- Manchester Piccadilly through Salford Crescent and Bolton to Blackpool (20.02, 20.07 and 20.12);
- lines between Stockport and Buxton (20.17); Stockport and Chester and Guide Bridge (20.10);
- lines between Manchester Victoria through Wigan to Southport and Kirby (20.15, 20.14);
- Manchester Victoria to Stalybridge and Rochdale (20.16) including the Oldham Loop (20.19);
- east Manchester including Transpennine routes from Piccadilly to Diggle (20.05 and 20.06);
- lines from Guide Bridge to Hadfield and Glossop and lines to the Hope Valley via Brinnington and Hyde (20.08);
- Bolton to Blackburn (20.18); and
- various freight and empty stock lines (20.20).

Route 20 North West Urban



Current passenger and freight demand

There is a substantial commuter market for rail services into the centres of Manchester, Liverpool and to a lesser degree Preston, and a similar market for off peak travel to those cities. There are strong leisure and business flows between the North West and London, Birmingham, North Wales and Yorkshire. Manchester Airport is a significant destination, serving leisure and business passengers (80 percent–20 percent split) from the whole of the north of England.

There has been significant growth in demand over the past ten years, although several factors have distorted recent trends. Over the period from 1999/2000 to 2002/03, demand for journeys within the route remained broadly steady, while demand for journeys to and from other parts of the country actually declined. This was due to a combination of factors, including route blockades for West Coast Route Modernisation work; the rebuilding of Manchester Piccadilly from October 2000 to June 2002; poor train performance in the aftermath of the Hatfield accident in October 2000; and strikes by train operator staff during the second half of 2002. These factors masked the underlying growth for several years.

Since 2002/03, however, there has been substantial growth, as demand has recovered from these setbacks. Between 2002/03 and 2004/05, there was growth of between 15 percent and 20 percent in demand both for journeys within the route, and for journeys to destinations outside the route other than London. The new Virgin Trains timetable was introduced in September 2004, and this has generated significant growth in journeys to and from London. Recently, Northern Rail has reported seeing an average growth of 10 percent per annum in 2005/6 and 2006/7. This level of growth is in excess of what is predicted using the standard industry forecasting framework, PDFH. We are trying to develop an understanding of the root cause.

The North West RUS highlighted (from surveys carried out in 2005) that there is a sharp morning peak at both Liverpool Lime Street and central Manchester, and there is overcrowding on a number of services leading into them.

Freight intermodal terminals are an important driver for freight traffic on the route. The Freight RUS identified that the level of this traffic is expected to continue to grow. In addition a substantial quantity of aggregates traffic from the Peak District either traverses the route or has a destination within it. The presence of Alexandra Dock and Seaforth at the docks end of the Bootle Branch also generates considerable freight traffic.

Current services

The train operating companies that provide services on the route are Northern Rail, TransPennine Express, Virgin Trains London Midland and East Midlands Trains, Arriva Trains Wales, Merseyrail, English, Welsh and Scottish Railway, Freightliner Ltd, Freightliner Heavy Haul Ltd and DRS.

There is a mix of three broad types of passenger service: long distance services with destinations that include Scotland, London and the south coast; regional express services, with destinations such as Llandudno, Barrow in Furness, Newcastle, Cleethorpes and Norwich; and local services, covering local destinations out of Liverpool and Manchester. Apart from trains to London, services are a mix of two to six car multiple units, with two and three car trains being the main rolling stock formation.

The majority of services on the route are hourly (or better). There are a number of services that operate at two an hour. These include the long distance services, Manchester – Euston, the Manchester – Birmingham portion of the Manchester – Bristol and Manchester – Reading services, and the interurban Manchester Victoria to Leeds via Rochdale. Some local routes operate at two trains an hour such as Liverpool Lime Street to both Manchester Oxford Road, and Wigan; Manchester Victoria to Wigan, to Shaw, and to Rochdale via Oldham; and Piccadilly to both Marple and Glossop. A number of services operate less than hourly, including the slow train from Manchester to Sheffield, and the second train in the hour between Liverpool and Birmingham. In addition, some of the hourly services work in combination for parts of their route to give a better frequency.

The CrossCountry service between Manchester and Scotland was effectively withdrawn in December 2007. In its place, the existing TPE service between Manchester Airport and Barrow/ Windermere has been extended to Scotland in some services, and, as a result, some of Northern Rail's services on the Bolton corridor have been retimed.

Figure 1 Current train service level (peak trains per hour)

Route Section	Fast Lines	Slow Lines
Manchester Piccadilly – Slade Lane Jn	14	13
Slade Lane Jn – Stockport	13	5
Slade Lane Jn – Manchester Airport	9	–
Manchester Oxford Road – Deansgate	11	–
Salford Crescent – Bolton	10	–
Ardwick – Ashburys	14	–
Liverpool Lime Street – Edge Hill	7	7

There are a number of significant freight flows: stone from the peak district, which either traverses the route or has destinations within it, such as Northwich, Ashburys and Hope St in Salford; coal from Liverpool Bulk Terminal (LBT) which is the primary source of imported coal for Fiddlers Ferry Power station and container traffic to and from the WCML. Other smaller flows include waste trains to and from various terminals around Manchester, and the Northwich stabilisation scheme, which involves bringing in flyash to Northwich and then taking the output brine to Middlewich. The location of these freight terminals adds to the operational complexity of this route.

Figure 1 represents numbers of trains in the morning peak hour on key route sections.

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

Traffic volumes are summarised in Figure 3.

Figure 2 Tonnage

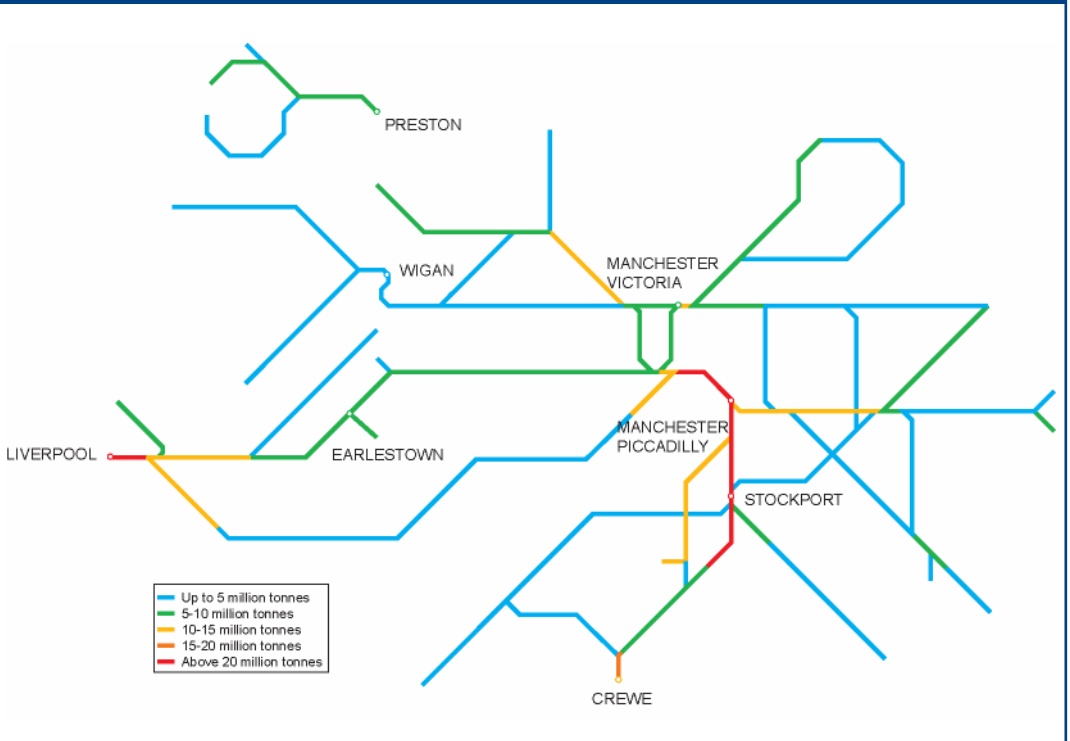


Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	21	1	22
Train tonne km per year (millions)	2,581	936	3,517

Current infrastructure capability

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

Figure 4 Line speed

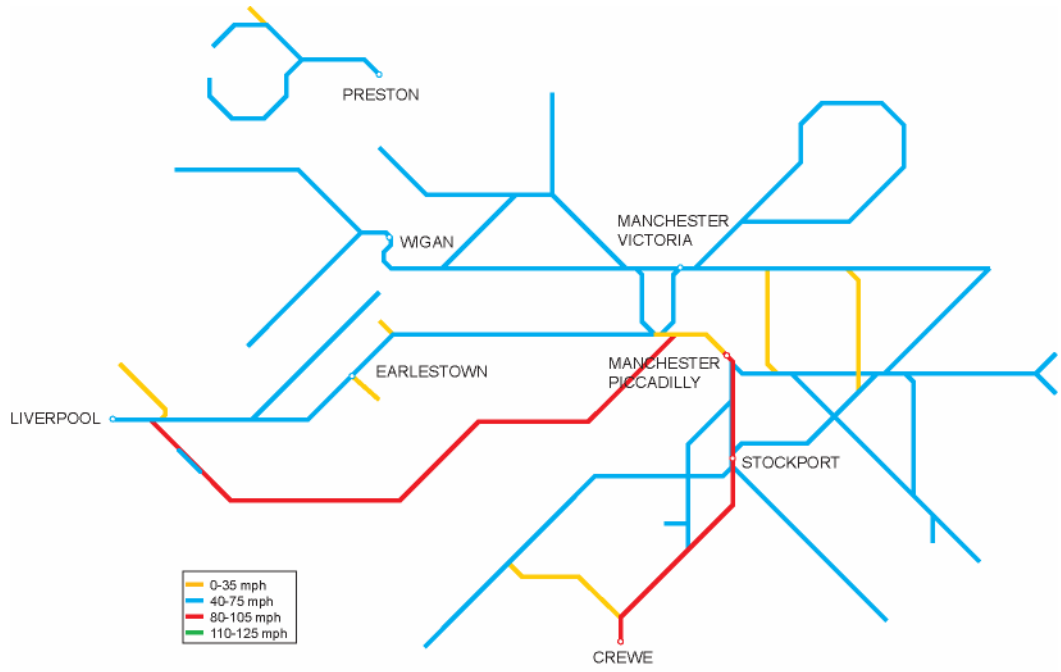


Figure 5 Electrification

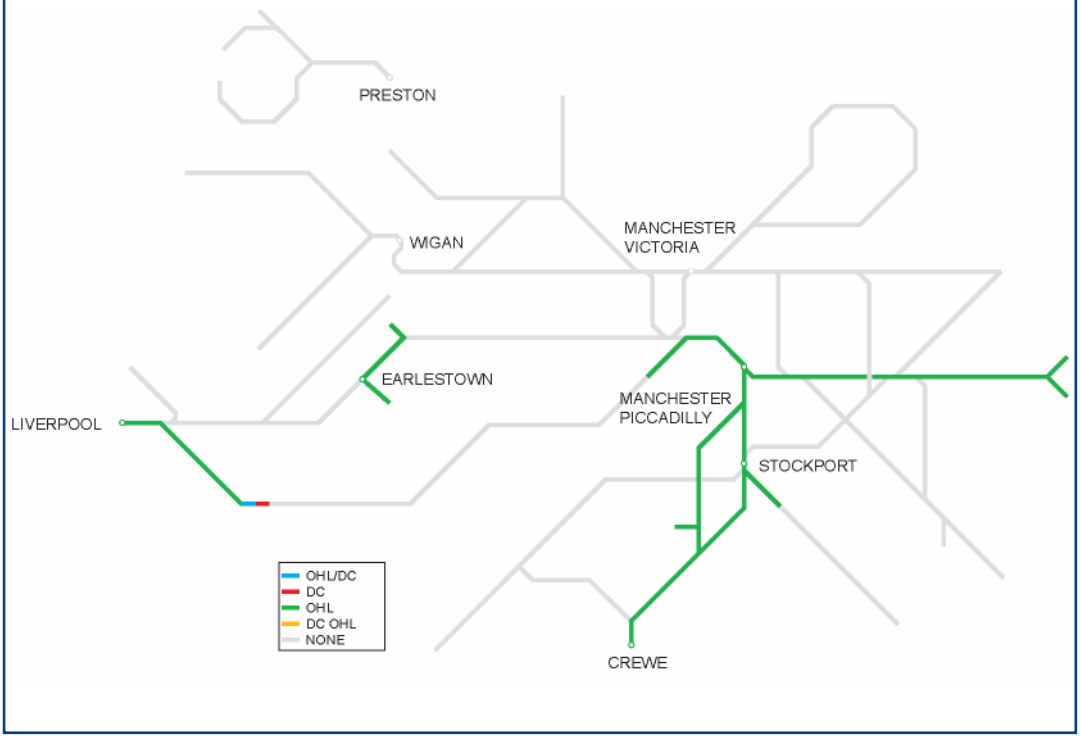


Figure 6 Route availability

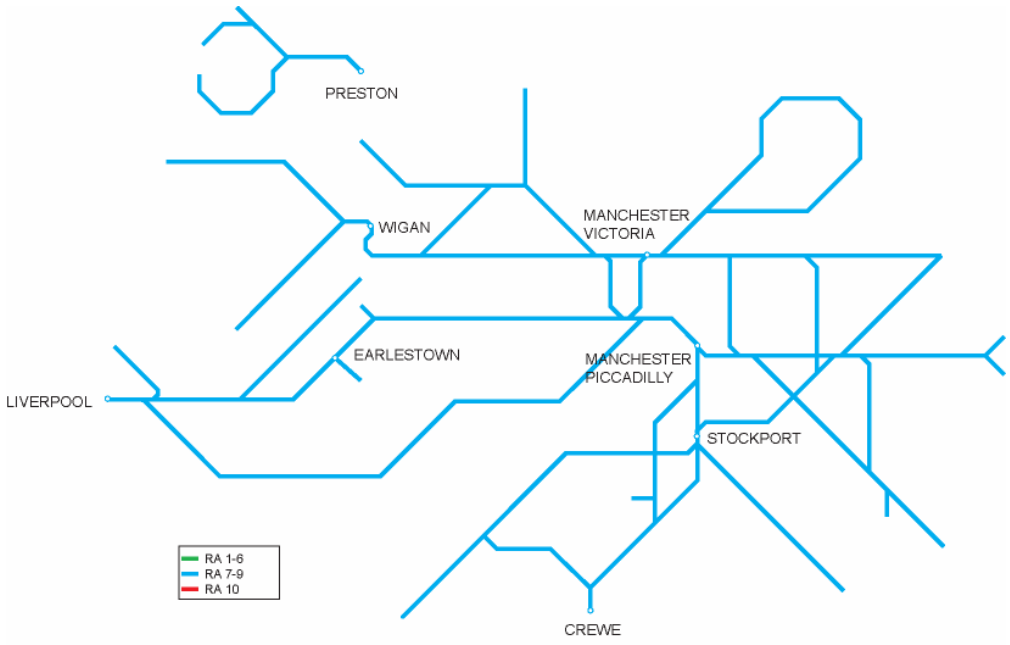


Figure 7 Gauge

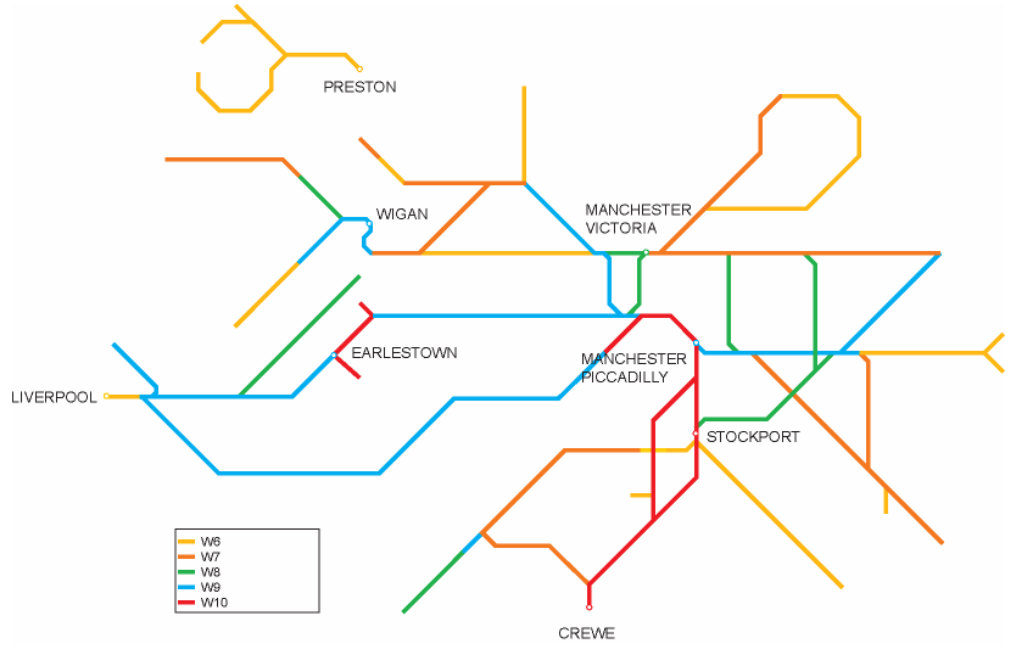


Figure 8 Current train service level (peak trains per hour)

Route Section	Fast Lines	Slow Lines
Manchester Piccadilly – Slade Lane Jn	14	13
Slade Lane Jn – Stockport	13	5
Slade Lane Jn – Manchester Airport	9	–
Manchester Oxford Road – Deansgate	11	–
Salford Crescent – Bolton	10	–
Ardwick – Ashburys	14	–
Liverpool Lime Street – Edge Hill	7	7

Current capacity

The nature of the services through the centre of Manchester is highly complex, with a wide range of stopping patterns, destinations and linkages between services. The existing mix of fast and stopping trains means that capacity is fully utilised at a number of key sections, including Manchester Airport, the approaches to, through, and in the trainshed of Piccadilly; at Ordsall Lane; between Manchester and Liverpool via Warrington; and between Salford Crescent and Euxton Junction. The train working in Manchester Victoria station is constrained by the number of turn round moves that can take place and by restrictions governing levels of permissive working. The layout at Salford Crescent comprises two 5-car platforms between junctions on both sides and where two 2-track railways converge. The layout here makes this the tightest constraint on the north-west side of the conurbation. The greatest constraint on the southeast quadrant is at Manchester Piccadilly. Here the high volume of traffic is exacerbated by the large number of through services that cross the station throat or use the busy through platforms (13 and 14).

At Lime Street capacity is constrained mainly by the restrictive layout which allows few parallel moves in and out of platforms. In time a further constraint will be the relatively short platforms. There will come a point where trains are sufficiently long that only one can be in a platform at a time.

At the various pinch points on the route, tradeoffs have already been implicitly made between performance and the number of trains. The high utilisation is due to the number of trains using the same piece of railway (as in the case of the throats at Piccadilly and Lime Street) or the same platforms (as in the case of Lime Street, Salford Crescent, Piccadilly 13 and 14 and Manchester Airport). Capacity is also constrained due to the mix of slow and fast traffic, particularly on the line to the Airport, the line through Warrington Central and the line from Salford to Bolton.

There are sections of the route where capacity is almost fully utilised, leading to performance risk and restricting alterations to the service. Typical sections include the single line sections between Blackburn and Bolton, and between Kirkham and Blackpool South, and the long signalling sections on the line to Hadfield. On many routes the existing platform lengths restrict the length of trains that can be operated.

Figure 8 represents numbers of trains in the morning peak hour.

Figure 9 Current PPM MAA (2007/08)

TOC	MMA	As at period
Arriva Trains Wales	92.3%	12
London Midland	89.1%	12
Northern Rail	88.4%	12
Transpennine Express	91.7%	12
CrossCountry	86.9%	12
Virgin Trains	86.3%	12
Merseyrail	94.7%	12

Current performance

Figure 9 shows the current PPM for each TOC running along the route.

An industry-wide group has been looking at performance issues associated with the timetable. This has identified those places where the Rules of the Plan will need to be amended in order to make the timetable more resilient. Broadly the recommendations have been implemented (for the Manchester South area) without the need to cut anything out of the timetable, but it has made things more constrained.

Timetable changes within the last three – four years have resulted in an increase in train services. Both Manchester – London and Manchester – Birmingham services now operate on a 30 minute frequency, with reduced journey times. In addition to this, services to and from South Wales, operated by Arriva Trains Wales run on a standard hour pattern and the Transpennine Express franchise operates 4 services per hour to and from Leeds, also on a standard hour pattern.

Despite this increase in traffic, performance has continued to improve. The delays in the part of the network covered by the Area General Manager LNW Central, (which represents the majority of the route) are currently ahead of target and ahead of previous year's figures.

The extensive renewal on the Crewe – Manchester route from December 2005 has enabled significant track renewals and modernisation of signalling equipment. This resulted in the closure of Wilmslow and Sandbach signal boxes, and transfer of control for the whole route to Manchester South signalling centre. This work did suppress passenger demand on the line, and it is suspected that it has not yet fully recovered.

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 Buxton line have been a concern for some time, 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 such as Buxton – Blackpool. We have recently carried out significant renewals on the route to remove the majority of the speed restrictions. This is 18 months earlier than originally planned.

The combination of the mix of traffic and stopping patterns on the Styal line and the need for many of the services to cross the throat at Piccadilly, makes the services to Manchester airport very fragile. The fact that the airport only has 2 platforms also acts as a capacity constraint. Management intervention by Network Rail and TOC controls minimise the spread of delay by terminating trains at Piccadilly where necessary. However, the act of terminating trains at Piccadilly platform 13 brings its own performance issues.

Section 2: Tomorrow's railway

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

Routes	Annual passenger km forecast in 2008/09 (millions)	Additional passenger km to be accommodated by 2013/14 (millions)
North West Urban	1,141	157

Figure 11 Peak hour arrivals to be accommodated by Strategic Route

London Terminals	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 (%)
Manchester	22,100	4,100	45	10,700	2,200	49
Other Urban Areas including Liverpool, excluding Merseyrail	27,700	3600	41	12300	2,000	46

Future demand

The North West RUS identified that with the continuing growth of Manchester's economy, the ongoing redevelopment of Liverpool city centre, and the growth of airport traffic at both Manchester and Liverpool airports, there is a significant quantity of passenger growth to be accommodated on all corridors. This anticipated level of demand is reflected in the level of demand the HLOS wishes to cater for. It is expected that this growth will manifest itself in all sectors – commuter, leisure and business: short and long distance.

It is likely that a significant level of growth will continue and that this route may exceed the doubling in size over thirty years that is perceived in the White Paper for the network as a whole.

The White Paper also suggests a doubling of freight traffic over thirty years. A significant portion of this growth is likely to come from inter-modal traffic, coal and aggregates, all of which already feature on this route.

There are two inter-modal terminals on the route – Seaforth and Trafford Park – and one just off it at Ditton. There are two more inter-modal terminals planned by developers – Parkside and Port Salford. There is a significant level of aggregates traffic coming out of the Peak District. At least some of the growth in that traffic will come on to this route.

Section 3: Proposed strategy

Figure 12 summarises the key milestones during CP4 in delivering the proposed strategy for the route. Further explanation of the key service changes and infrastructure enhancements are set out in the following sections.

Figure 12 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2007	Timetable recast	–	TPE takes over operation of Manchester – Scotland services – change of frequencies and methods of operation
2008	Timetable recast	–	London services from Manchester become three per hour instead of two, and local service changes
2009–2014	Timetable recast	Improvements to line speeds, small electrification extensions, and new and improved turnback facilities	Northern recasts its Manchester services: to segregate Oldham loop operation from rest of services to facilitate transfer to Metrolink; and to make efficient use of its additional rolling stock
2009–2014	Train lengthening	Platform lengthening	Accommodating existing and future peak passenger demand
2009–2014	Calder Valley long distance trains also serve Salford Central and Salford Crescent	Rebuild Salford Crescent station	Increased capacity, ability to handle longer trains at a significant destination and interchange station. Removes a bottleneck to expanding service provision in NW Manchester
2009–2014	Revised services on Leeds – Manchester – Liverpool route	Programme of linespeed and capacity enhancement schemes	Increased capacity and improved journey times
2007–2009	Additional service Manchester – Preston	Journey time reduction Salford – Preston, potentially new platforms at Bolton and / Lostock	Improved journey time passenger growth and increased capacity. Allows a better pattern of services
2009–2012	Manchester Victoria refurbishment	Improved passenger facilities at Manchester Victoria, improved layout of station	Improved environment for passengers, to be delivered in conjunction with Fish Dock property redevelopment. Increased capacity at Victoria
2014	Central Manchester capacity enhancement	Single option defined for capacity enhancement of the Manchester 'Hub' developed ready for CP5 implementation	Increased capacity (when implemented)

Network Rail SBP Route Plans (April 2008)

Strategic direction

The North West Route Utilisation Strategy (RUS) identified a number of key gaps and recommended options for their resolution. The key interventions are included in this strategy.

Both the Regional Economic Strategy (RES) and Regional Spatial Strategy aspire to strengthen intra-regional flows between the key regional centres of Manchester, Liverpool and Central Lancashire (notably Preston) in order to support growth and development in the region. The RES develops this further, and includes links to the city regions of Leeds and Sheffield as well. Currently, the flow between Manchester and Liverpool is 40 percent greater than the flow between Manchester and Leeds. However, Manchester to Liverpool has three fast trains per hour, compared to four between Manchester and Leeds. This may account for Leeds – Manchester seeing twice as much passenger growth as Liverpool – Manchester. The North West RUS determined that there was a case for strengthening the links between Preston and Manchester, and Liverpool and Manchester, by increasing frequency and/or improving line speeds.

The biggest strategic challenge is the issue of passenger demand exceeding supply, especially in the peak. The North West RUS identified that approximately 50 additional vehicles would be required to strengthen peak hour services on routes into Manchester and Liverpool, and further vehicles may be justified by the end of the RUS period. This element of the RUS has broadly been captured in the HLOS and we have been discussing with the DfT and TOCs how best to deploy the additional units and lengthen the appropriate platforms in the light of the DfT's rolling stock strategy. In these discussions Northern has highlighted that the most efficient use of a strengthened fleet is for trains, where possible, to work through the centre of Manchester and thereby avoid a turnround for each trip to or from the centre, and for the longest units to not have to work to the extremities of the system. This has brought out the need for some small infrastructure interventions to the East of the centre such as turnbacks at Rochdale and Stalybridge, an improved layout at Buxton, and a minor electrification extension to Stalybridge in order to have a significant impact in terms of utilisation of the additional rolling stock. To the west of the centre, for the strategy to work at all, additional capacity needs to be built at Salford Crescent, either to terminate trains or ideally to allow more to run through and terminate at Bolton, and possibly Atherton or Wigan. In addition, the 2008 timetable will increase the number of London – Manchester trains to 3 per hour, and we expect that these trains will be lengthened to 11 cars at a later date. TPE has a long standing aspiration for a fourth vehicle to be added to at least some of its three vehicle class 185s. This could happen in the life of their franchise. We are working with TPE and the DfT to create a service with improved journey times between Liverpool and Manchester and between Manchester and Leeds.

The lengthening of trains and increased number of London services increasingly means that tight turnrounds and reliability – especially in terms of trains keeping paths in and out of Manchester Piccadilly train shed – are key issues.

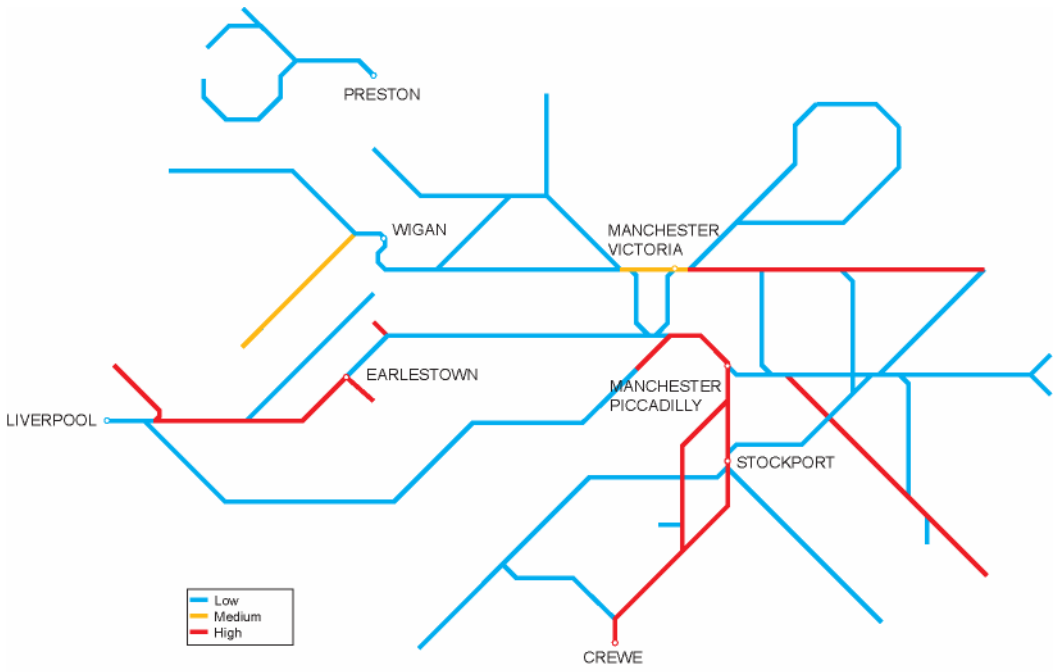
It is anticipated that the Oldham Loop will transfer to Metrolink operation within the foreseeable future. This is likely to free up paths at Manchester Victoria, and create opportunities for services to work through from new destinations. This will create the opportunity for an extension. In the interim the heavy rail service will operate independently of the rest of Northern's operation, starting from the December 2008 timetable.

Manchester Victoria station is in need of upgrading to a standard similar to that of Manchester Piccadilly. This is in order to accommodate the anticipated growth, and also to make the two stations more interchangeable so that passengers are more evenly distributed between the two stations and any potential future significant timetable recasts between North and South Manchester become more feasible. There is a property scheme being developed for the Fish Dock at the front of the station and this will act as a catalyst for station regeneration. These developments at Victoria are seen as the first stage of a much larger scheme to create greater rail capacity over the whole of central Manchester. Details of the Victoria phase of the scheme are not yet finalised, but the station works may provide an opportunity to implement some railway infrastructure works which complement these.

A North West Feasibility Study to examine options to increase the capacity of the Manchester 'Hub' will be started in CP3. Assuming a business case can be proven, work to develop any significant recommended infrastructure schemes could commence in CP4, but with implementation in CP5.

Network Rail aims to address the station challenges set out in the 'Developing a Sustainable Railway' White Paper, for CP4 and beyond, through the development of a National Station Improvement Programme. This programme is being developed with the industry, and is described in a separate section of the Strategic Business Plan.

Figure 13 Tonnage growth



Future train service proposals

When the December 2008 timetable takes effect, it will introduce significant changes to services on the route. The Manchester – London trains will increase from two an hour to three an hour during the day, with one an hour via Wilmslow. The Liverpool – Birmingham trains will change to a two per hour pattern.

In order to meet the HLOS targets for the morning three hour peak into Manchester, there is a need for around 106 additional 'vehicle arrivals'. These will be provided by a strengthened Pendolino fleet (to provide 27 additional vehicle appearances in the three hour peak before the end of CP3 and a further 12 during CP4), and strengthening of regional services to provide an additional 67 vehicle appearances. Liverpool (excluding the Merseyrail network) requires about 13 additional vehicle appearances during the three hour morning peak.

Although not finalised, there are a number of other local service alterations that are likely as a result of the December 2008 timetable change and the rolling stock strategy. The increase in available rolling stock and the need to efficiently deploy the units would see a recast of services in order to both ease overcrowding and best use the stock. An example of this would be new a service such as Piccadilly – Stalybridge helping the Hadfield service to achieve better utilisation and consequently avoid excessive platform lengthening. The recast service would also see services working through Victoria to new points of turnround such as Salford Crescent, Bolton, and Rochdale. The exact options are still being developed.

The Oldham Loop is due to transfer to Metrolink in the near future. In order to make that change easier, the Oldham Loop services are going to be operated independently of others rather than working though as now. This is a further catalyst for the recast of the north Manchester services. When the Oldham Loop eventually transfers to Metrolink, the resulting paths available at Victoria may allow a further recast of the North Manchester service patterns, and also potentially for the east Manchester services. We will work with stakeholders to develop these should the opportunity arise.

The NW RUS identified that there was a case for a fourth fast service across the Chat Moss between Liverpool and Manchester and a second fast service between Manchester and Preston. This alteration to the Preston services could be achieved by recasting the current timetabled services and the addition of an additional slow service.

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

Future capability

Stations

Manchester Piccadilly – Capacity on the Castlefield Corridor is currently constrained by re-occupation of Piccadilly platforms 13 and 14. Improving passenger flows on these platforms by improving circulation (North West RUS option 5.3.2 – 7) to ensure that the planned two minute dwell time is met, is a short term solution. This scheme will be completed in early CP4.

If freight growth leads to longer freight trains, it may be that solutions such as closing up signals are required on the corridor (North West RUS option 5.3.2 – 10). The business case for this has yet to be established, but it could feature as a CP4 intervention.

Capacity on the southern approaches is constrained now by the layout and pattern of services. A significant portion of capacity is utilised by the Transpennine services to Liverpool crossing the throat on the flat, and services from the north east to the Airport. The re-signalling of the area is an opportune time to take account of these moves and improve the situation, but this will not take place in CP4. Within CP4 there will be an opportunity to increase the access and egress speed to the Longsight loops, and the speed of the loops themselves. This will make it easier to path inter-modal trains into Manchester.

Manchester Victoria – Although the layout of the station was remodelled relatively recently it was completed against a mindset of a declining railway and cost minimisation. The station only has four through platforms and two east facing bays, and has a layout with single ladders at both ends. This layout is not particularly flexible, especially when trains are accessing the bays. Given the existing layout, capacity at Victoria is maximised by terminating as few trains at the station as possible. Creating alternative places to terminate trains once they have passed through Victoria would facilitate this. Bay platforms could be created at Salford Crescent and Salford Central to facilitate terminating trains from the east. These would also give benefits for access to Salford and connections between the Calder Valley and Manchester Airport (North West RUS options 5.3.7 – 3 and 5.3.7 – 4). A bay platform will be created at Stalybridge with the resignalling scheme to facilitate terminating trains from the west, without the need to cross the main line (North West RUS option 5.3.5 – 1). If Victoria's ability to handle traffic is not to become a constraint on the north Manchester network, the creation of these bays should be implemented in CP4. These bays will also allow the station to cope with disruption associated with improvements to the station environment (see below). Improving the interchange with Metrolink at Eccles was identified as a benefit in the North West RUS. Doing this would also reduce the number of passengers disembarking at Victoria, when their ultimate destination is Salford Quays.

The station environment at Victoria is poor when compared with the rest of the network and particularly Manchester Piccadilly. As a result, this discourages rail use and will be a constraint on growth. This issue must be addressed as Victoria currently handles nearly as many commuters as Piccadilly, and the north-side of Manchester is expected to experience more growth than the south. The aspiration is to create a welcoming station environment comparable to that of Manchester Piccadilly. Improvements to the station environment are best carried out in conjunction with the property development planned for the Fish Dock area of the station which is due to begin in the middle of CP4. Whilst additional bay platforms and an altered layout are not a necessity for CP4, it may be that the opportunity provided by the redevelopment makes this the most opportune time to provide for future capacity requirements.

Manchester Oxford Road – As Liverpool local services terminate here, and the station is by definition a destination and interchange station, the lack of DDA access has become an increasing issue. To address this, it is anticipated that lifts will be provided in CP4. Platform 1 will remain non-compliant in the short term, but the issue of accessibility will need to be addressed in the future in order for there to be a complete solution.

Liverpool Lime Street – There are two station improvement schemes planned at Liverpool Lime Street. The first , known as Liverpool Lime Street Gateway, looks to improve the front of the station, in particular opening up the frontage area and replacing the existing Concourse House. This scheme is being jointly funded by Liverpool Vision, English Partnership and a third party developer. The second improvement scheme is being funded by Merserytravel, who are planning works on the internal area of the station. These works are expected to be completed in CP3.

Merseytravel has further plans to improve other stations in their area, especially in terms of car parking, access and station facilities. There are a number of schemes at various stages of development – from initial ideas to station schemes already underway, for example St Helens Central revitalisation scheme. Some of these schemes will be undertaken in CP4.

Salford Crescent – This is an island-platformed station sited between Windsor Bridge North and Windsor Bridge South junctions. It currently constrains capacity in several ways. It is used both as an interchange station for accessing both the north and south sides of Manchester and as an origin/destination in its own right. Crowding on the narrow platforms means that at times access and egress from trains is difficult, leading to station overtime, and delays. The proximity of the junctions to the station means that points are in overlaps and there are conflicting moves. The rail capacity at the station is the key constraining factor on any increase in traffic on the Bolton and Atherton corridors, as well as preventing the Calder Valley services terminating here. The platforms are not long enough to handle 6 x 23m trains, and this currently means some trains cannot stop, hence aggravating the crowding problem for those trains that do. As further trains are lengthened to cope with passenger demand, this constraint will become more acute.

The solution is to create a new station with extra, wider platforms long enough to accommodate the forecast train length. These new platforms are key to meeting demand and need to be positioned in such a way that they help reduce the overlaps problem and provide the ability to terminate trains from the Calder Valley. There are several options for this, the greatest capacity being provided by those which significantly remodel the layout.

The relocation of the station to the north of Windsor Bridge North junction supplies an increased capacity but can be implemented without significant remodelling of the layout. However, other options, such as reconstruction on the existing site, are being considered.

National Stations Improvement Programme

The Government is proposing an additional £150m during CP4 to support the modernisation of a range of stations. The criteria for a station being selected include footfall and current facilities. Network Rail has established a National Station Improvement Programme (NSIP) to ensure that this money is invested in the most effective way. This programme is being developed within the industry through Local Delivery Groups (LDG), and is described in our Strategic Business Plan.

Car parking

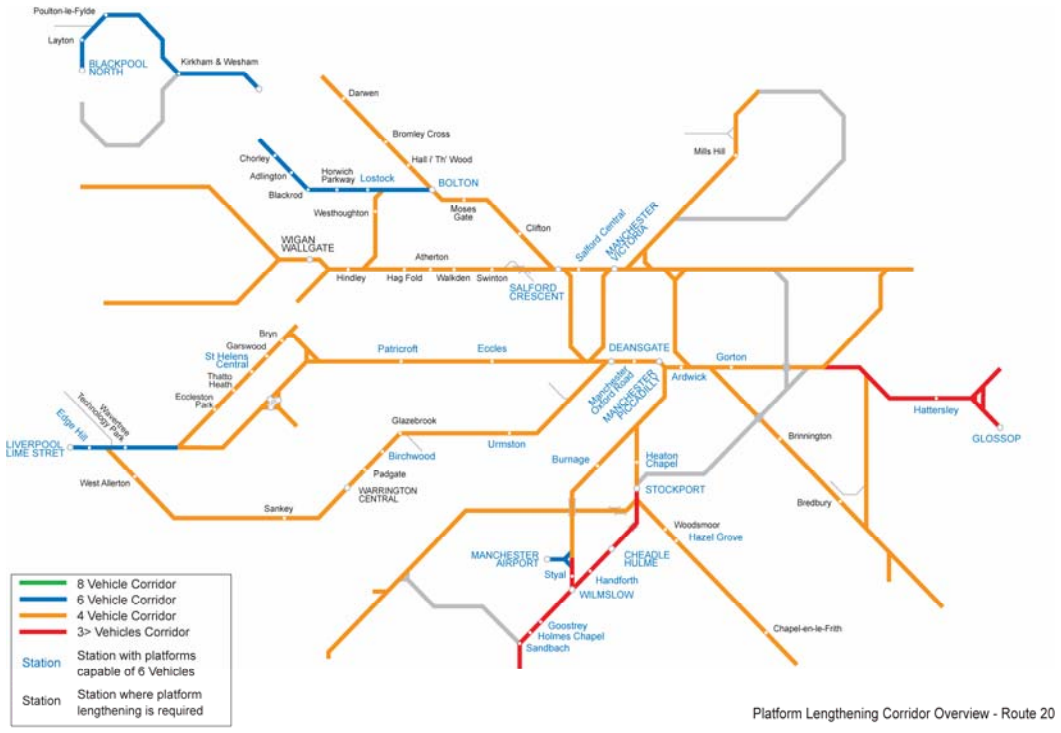
We are working with TOCs, PTEs and local authorities to increase car park provision at stations. Examples of this are the schemes being developed for Broad Green, Bolton, Cheadle Hulme, and Guide Bridge.

Potential changes to capability are summarised in Figure 14.

Figure 14 Potential capability changes

Route section or location	Capability measure	Current value	Future value	Date
Guide Bridge West Jn	Speed	15 mph	25 mph +	2008
Olive Mount Chord	Reinstated railway	none	2 track	2008
Manchester Airport 3rd Platform	New railway	none	1 track	2008/09
Dinting – Glossop – Hadfield	Speed	10 to 40 mph	10 to 50 mph	2008/09
Manchester – Bolton – Blackpool	Speed	75 mph	90 mph	2009/10
Stockport – Buxton	Speed	40 and 60 mph	60 and 75	2009/10
Edge Hill- Ordsall Lane	Speed	75 mph	90	2009/10
Seaforth to Edge Hill	Gauge	W9	W10	2010/11
Guide Bridge – Dinting	Speed	60 mph	Up to 90 mph	In CP4
Edge Hill to Earlestown	Gauge	W9	W10	In CP4
New Mills South Jn – Ashburys	Axle Weight	RA8	RA10	In CP4
Ashburys – Guide Bridge – Stockport	Gauge	W8	W9 & W10	In CP4
Salford Crescent Additional Platforms	New platform faces	2	4 +	In CP4
Edge Hill to Castlefield Jn, to Springs Branch Jn, and/or to Trafford Park	Electrification	none	25kV OHLE	In CP4

Figure 15 Platform Lengths



New Stations

We are working closely with Chorley Borough Council and Lancashire County Council to examine a proposal for a new station at Chorley Buckshaw Village on the Bolton to Euxton Junction line. This could potentially be built in CP4. There are a number of other aspirations for new stations on the route such as Gamesley, Chapelford, Headbolt Lane (mentioned in Route 21) and Carr Mill. These proposals are at a very early stage of development, and may be implemented in CP4 if taken forward.

Platforms

A scheme for a third platform at Manchester Airport has been developed, and is planned to be completed in CP3.

Platform lengthening associated with train lengthening will be required at other stations on the route. This is the preferred option to satisfy the steady growth in passenger demand across the route (see figure 15). This approach will allow us to reduce overcrowding and deliver the capacity challenge set by the HLOS through CP4 and beyond CP5.

The North West RUS identified that there was a case for through platforms at Salford Central on the Liverpool lines to allow passengers to reach Salford without the need to change at Victoria. This would alleviate crowding on these trains by allowing people to leave closer to their ultimate destination and before the train got to Victoria. These platform enhancements are planned for completion during CP4.

Depots

The North West RUS and the Government's White Paper identified a need for a significant number of new vehicles to operate in the North West. Northern, Network Rail and the DfT are working to identify the need for additional depot facilities, and this will be on the west side of the Pennines as well as the east. Northern Rail's view is that the existing heavy maintenance facilities at Newton Heath need to be supplemented with a further depot, ideally at Allerton. Depots will see a reduction in the number of units that are stabled for other reasons e.g. such as fuel, carriage washing and toilet discharge A suggested solution is that these routine facilities are provided at other locations that exist on the route. As well as these improvements to facilities, increases in utilisation – which may mean an increase in the capacity – will be required at the following depot/stabling locations: Buxton, Stockport, Allerton/Liverpool, Wigan, Blackpool, Guide Bridge.

Buxton – Currently stables 18 vehicles and the need is to stable 26.
Stockport – Currently stables 28 vehicles and the need is to stable 44.
Allerton – A new facility that will be capable of stabling 30 vehicles from Lime Street plus 20 additional.

Wigan – Currently stables 20 vehicles and the need is to stable 40.
Blackpool North – Currently stables 50 vehicles and the need is to stable 70.
Guide Bridge **–** A new facility to stable 20 vehicles

Gauging and Route availability

The Bootle Branch will be cleared for W10 in CP3, as will a suitable route to it from the WCML. The alternative route to the WCML via Earlestown may take a little longer to clear.

A further scheme is being developed to reinstate the Olive Mount Chord. This would allow trains to access the Bootle Branch directly from the Earlestown direction without the need for a run-round move.

The North West RUS appraisal work identified that there is a case for targeted structures renewals in east Manchester, to provide RA10 cleared routes for aggregates traffic. There is also a case to consider increased capability on the Ardwick – Guide Bridge – Stockport route to allow diversions away from Slade Lane Jn.

Line speed

The North West RUS and the White Paper identified that there are a series of locations on the route where there is an economic case to raise the line speed and deliver benefits in terms of performance and improved journey times between regional centres.

Most significant amongst these are Guide Bridge junction, to be completed in CP3, and others likely to be progressed in CP4 include: Blackpool – Manchester, Liverpool – Manchester, Manchester – Diggle, the Hadfield line and Stockport – Buxton. The TPE route enhancements project includes some of these line speed improvements and we are working closely with key stakeholders to deliver this package of work. The plan is to meet or exceed the White Paper target of enabling a non-stop journey time of 40 minutes (currently 43 minutes) Liverpool to Manchester Oxford Road via Chat Moss, and a 43 minute journey time from Manchester Piccadilly to Leeds via Diggle (currently 54 minutes). In some instances there are opportunities to raise line speeds in order to improve stock utilisation and train loadings rather that with the aim of improving passenger journey times. For example, raising speeds on the Hadfield line will help the same number of units to work a 4 tph service when they currently can only work 3 tph, and incidentally avoids platform lengthening that would otherwise be necessary.

Figure 16 Service Groups to be lengthened

Atherton Corridor to accommodate 4 x 23m vehicles at:- Atherton (Dn), Hag Fold (Up and Dn), Hindley (Up), Swinton (Up and Dn), Walkden (Up and Dn), and Wigan Wallgate (Platform 3)
Bolton Corridor to accommodate 4 x 23m vehicles at:- Blackburn (Plat 3 and 4), Bromley Cross (Up and Dn), Clitheroe (Up and Dn), Clifton (Up and Dn), Darwen (Up and Dn), Hall in the Wood (Up and Dn), Langho (Up and Dn), Moses Gate (Up and Dn), Westhoughton (Up and Dn), and Whalley (Up and Dn).
Bolton Corridor to accommodate 6 x 23m vehicles at:- Adlington (Up and Dn), Blackrod (Up and Dn), Bolton (Plat 1-Dn and 2), Chorley (Up and Dn), Horwich Parkway (Up and Dn), Kirkham (Up and Dn), Layton (Up only), and Poulton-Le-Fylde (Up and Dn).
Calder Valley to accommodate 4 x 23m vehicles at:- Mills Hill for 4 vehicles (Up and Dn)
Chat Moss Line to accommodate 4 x 23m vehicles at:- Wavertree Technology Park for 4 vehicles (Up and Dn)
CLC Corridor to accommodate 4 and 5 x 23m vehicles at:- For 5 vehicles: Glazebrook (Up and Dn), Padgate (Up and Dn), Sankey (Up and Dn), West Allerton (Plat 1, 2 and 3) and Warrington Central (Up and Dn) – lengthen to 6-cars to accommodate services on other corridors stopping here.
Marple Corridor to accommodate 4 x 23m vehicles at:- Bredbury (Up and Dn), and Brinnington (Up and Dn).
St Helens Corridor to accommodate 4 x 23m vehicles at:- Bryn (Up and Dn), Eccleston Park (Up and Dn), Garswood (Up and Dn), and Thatto Heath (Up and Dn)
Stockport Corridor to accommodate 4 x 23m vehicles at:- Chapel-en-le-Frith (Up only) and Woodsmoor (Up and Dn)

Network Rail SBP Route Plans (April 2008)

Electrification

The business case for extending electrification is being assessed by regional partners. It is unlikely that schemes currently being considered such as the Chat Moss, Huyton to Wigan, and Hunts Cross to Trafford Park, will be progressed in the near future.

There is a case for small extensions of electrification, based on improved stock utilisation and platform lengthening avoided. A strong candidate for this is the extension of electrification from Guide Bridge to Stalybridge.

Future capacity

The changes to the timetable from December 2008 and the lengthening of local services to cope with passenger demand, will be difficult to accommodate, but can be implemented in the short term. In CP3 we plan to develop a strategy for optimising the use of, and developing additional, capacity around Manchester (the North West feasibility study – Manchester 'Hub'). 'Quick win' and enabling works are envisaged in CP4, but any major spend is not expected until CP5.

The key constraint on capacity on the Northwest side of the route is Salford Crescent, followed by the pattern of services on the Bolton Corridor and the lack of opportunity to overtake. In CP4 we will redevelop and possibly relocate Salford Crescent station to alleviate congestion at the junctions, and carry out a capacity improvement scheme on the Bolton corridor to raise the line speed and to create opportunities for faster trains to avoid slower ones.

There are length constraints at Piccadilly train shed due to platform lengths and capacity constraints on the approach to Piccadilly. This means that there are difficult trade-offs to be made between more trains and longer trains. It is possible that more interventions may be required beyond those already identified for the Hadfield and Buxton lines.

The ability to increase the number of aggregates trains out of the Peak District is limited by train paths on the Hope Valley and, for some services, the length of the sidings at Buxton. Longer trains could run without the need to use the sidings if the station area of Buxton is remodelled, and the speed and headway of the line altered to accommodate the traffic. A further crossover between the line to Great Rocks and the line to Dowlow – which may prove very difficult to implement – would then allow traffic from Peak Forest to access the Buxton line. This would allow a second access to Peak Forest and Tunstead, for growth and to minimise the impact of engineering works.

Capacity to allow trains access to Trafford Park is limited by the number of paths available for getting on and off the WCML, and using the Castlefield corridor between Castlefield Jn and Piccadilly. The North West RUS identified that accommodating the growth predicted by the Freight RUS at Trafford Park, very much depended on the level of utilisation of existing paths. When this is exhausted there is then some scope for additional capacity using either more or longer trains. Until such time as the December 2008 timetable has been seen operating, it is impossible to determine which method to progress. Furthermore, should either of the potential new intermodal terminals become operational, there may be no need to progress either.

Figure 17 Forecast PPM MAA-CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
London Midland	89.7%	90.5%	91.2%	91.6%	92.0%
Arriva Trains Wales	92.7%	92.9%	93.2%	93.4%	93.5%
Northern Rail	90.5%	91.0%	91.5%	91.9%	92.2%
CrossCountry	87.9%	88.7%	89.7%	90.4%	90.9%
Virgin Trains	88.1%	89.6%	90.8%	91.5%	92.0%
TransPennine Express	92.8%	93.3%	93.7%	94.0%	94.2%
Merseyrail	94.8%	94.9%	95.1%	95.2%	95.2%

Figure 18 Forecast PPM MAA - proposed local commitments

	2009/10	2010/11	2011/12	2012/13	2013/14
London Midland	88.7%	89.4%	90.2%	90.6%	91.0%
Arriva Trains Wales	91.7%	91.9%	92.2%	92.3%	92.5%
Northern Rail	89.9%	90.4%	90.9%	91.3%	91.6%
CrossCountry	86.7%	87.4%	88.4%	89.1%	89.7%
Virgin Trains	85.8%	87.3%	88.5%	89.2%	89.7%
TransPennine Express	92.2%	92.6%	93.1%	93.4%	93.6%
Merseyrail	93.6%	93.8%	93.9%	94.0%	94.0%

Future performance

Figure 17 sets out the planned PPM for each train operator. Figure 18 sets out the trajectory we propose as local commitments with each operator. These are lower than planned given the need for flexibility in achieving the HLOS targets and to reflect the greater uncertainty and risk associated with projecting performance at a disaggregated level. Reasonable requirements will finally be established for CP4 in our 2009 Business Plan. In some cases the services covered by the franchises will change; this means that the forecast PPM figures are not directly comparable with the current PPM figures.

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 currently 87.7 percent PPM and should reach 90.0 percent by the end of March 2009. The franchise is extremely complex with a focus on cost management so that resources are efficiently used with little spare capacity for growth or recovery from incidents. Northern Rail recognises that there is a potential balance between aiming towards a high average performance and targeting a lower, but more consistently achieved level of performance with better use of capacity for passengers.

The key performance issues and opportunities for this TOC have been identified as:

- the ability to maintain a highly performing service connecting multiple key transport nodes each with challenge for delivery in their own right and limited spare capacity for growth;
- scope for growth in general and especially for services in the urban conurbations where there is incomplete scope for infrastructure enhancements and low spare resource to deliver increased capacity from existing supplies;
- the challenge of improving service delivery during disruption from the available resource base driving a preference for focus on incident avoidance;
- taking ability to grow revenue across services, including community rail opportunities;
- a consequential need to focus on detailed day to day delivery and good quality operating practice;
- a complex mix of fleet some of which has an inherently low level of reliability;
- the challenge of maintaining unit availability with an expanding size of fleet whilst additional depot and stabling facilities will take time to make available;
- the specific issues arising from the December 2008 timetable, especially regarding the recast of the timetable in the Manchester area with pathing and platform occupation issues;
- the issues arriving from efficient utilisation of the larger fleet, particularly those arising from longer trains, and from any additional infrastructure required to be put in place;
- parallel scope for a significant improvement to the quality of the infrastructure over which Northern Rail operates services, including need to ensure these services link into more dense operation around conurbations. Some of their key revenue flows are also within their worst performing service groups;

- specific need to improve track quality;
- real ability to management the impact of weather and drive down cable theft; and
- getting the right balance between performance, journey time and capacity benefits from the enhancements planned on routes operated by Northern (e.g. York Holgate 4th track); and driving delivery of smaller scale enhancements such as line speed improvements.

First Keolis TransPennine Express

First Keolis TransPennine Express currently operates the main cross Pennine routes centred on the Leeds and Sheffield to Manchester corridors together with services from Manchester to the North (including Scotland since December 2007). The performance of TPE is currently 91.7 percent PPM and this should reach 92.5 percent PPM by the end of March 2009. Recent performance improvements have been driven by fleet improvements and a well managed JPIP process.

The key performance issues and opportunities for TPE have been identified as:

- the ability to maintain a high performing service connecting multiple key transport nodes each with a challenge for delivery in their own right and limited capacity for traffic growth;
- a consequential need to focus on day to day delivery of good operational practice;
- uncertainty over the impact of the December 2008 West Coast timetable change especially around the southern approaches to Manchester;
- improvements from the remodelling of York Holgate Junction;
- management of freight services;
- real ability to manage the impact of the weather and drive down cable theft; and
- evaluation of line speed and route enhancements in the North West, between York and Northallerton and across the Pennines.

TPE and Network Rail are looking forward to developing a full 5 year performance plan around these issues during the summer 2008. At present the forecast is that TPE will achieve a PPM of 94.2 percent by the end of 2013/14 although this is not signed up to by them as being deliverable.

CrossCountry

As a long distance operator CrossCountry faces significant performance challenges. The franchise was re-mapped from 11 November 2007 bringing together parts of former Virgin Cross Country and former Central Trains routes. Additional capacity in the form of HSTs as well as additional seating on Class 220/221 and Class 170s will be introduced in the period between May 08 and Summer 09.

Performance Levels

PPM MAA for the remapped franchise at the end of period 12 2008 is 86.9 percent. The target contained in the 2008-09 JPIP is 87.3 percent.

Franchise plans developed during bidding based on TOC on Self improvements have a PPM figure of 88.7 percent at the end of the franchise. This was based on a given bid assumption of no improvement from Network Rail in CP4. It is therefore expected by CrossCountry that the further improvement sought in franchise and national PPM will come from Network Rail initiatives. The PPM figures shown for CP4 represent Network Rail's forecasts but while there have been some high level discussions, CrossCountry has not yet been able to agree formally a PPM figure for the end of CP4.

Significant lateness

Network Rail nationally is developing plans for a 25 percent reduction in trains over 30 minutes late over Control Period 4. These plans include continued work on flooding prevention and joint initiatives being developed between Network Rail and BTP to prevent theft and vandalism. These commitments are consistent with CrossCountry's desire to minimise the number of significantly late trains, a source of customer complaint, loss of business to rail and payments under the delay repay regime. Although plans are currently in their early stages, any actions under this heading are likely to benefit the performance of the CrossCountry services given the geographic extent and long distance nature of the business.

Extreme weather

Extreme weather is no longer confined to particular periods of the year. Flooding and high winds can strike at any time with an adverse effect on services. CrossCountry's geographic coverage means that a regional weather event can have a national impact. Vulnerable pieces of infrastructure and land such as Dawlish Sea Wall and the Teignmouth cliffs will continue to pose a performance risk although specific Network Rail operational plans deal with such incidents. Of particular concern to CrossCountry are blanket emergency speed restrictions which can severely impact services which operate the length and breadth of the country as well as across Network Rail organisational boundaries.

The other operators on this route are Arriva Trains Wales, Merseyrail, Virgin Trains, London Midland and East Midlands Trains. The future performance section for Arriva Train Wales can be found in the plans for Routes 14, 15 and 22, London Midland can be found in the plan for Routes 17 and 18, and

East Midlands Trains can be found in Route 19. Merseyrail is described in the plan for Route 21, and performance of Virgin Trains is described in Route 18.

Engineering access

Access for this route is complicated as many of the lines form part of the integrated possessions strategy for the West Coast Main Line and the Transpennine routes. Planning access for this route therefore must be undertaken in conjunction with those routes whilst maintaining the availability of a route to Manchester Airport whenever possible.

Access for the Cheshire Lines Committee (CLC) line from Manchester to Liverpool via Warrington Central has to be planned in association with the Chat Moss route, as these are both alternative diversionary routes. Similarly, access to the line from Stockport to Mickle Trafford via Northwich is coordinated with the Ordsall Lane to Earlestown and Chester route, so that end-to-end traffic flows for North Wales can be maintained.

Our strategy on this route is to liaise with the train operators to find the least disruptive ways in which to carry out the required renewals. This tends to mean disruption to Sunday services, but can also result in blockades when major work is required, with diversionary routes or bus replacements. We intend to continue with the regime of Sunday blocks as it coincides with times of least demand for services.

There has again been heavy renewals work on the Hope Valley route during January to March 2008 and this will be repeated in future subsequent years.

There are a number of longer blockade possessions planned in 2008. For four days over Easter, we closed the line between Earlestown and Bootle Jn, affecting trains between Manchester and Liverpool (via Newton-le-Willows), to renew Huyton S&C. For eight days over the August Bank Holiday, we will close the line between Windsor Bridge Jn and Crow Nest Jn, affecting Manchester to Wigan trains, for large volumes of plain line track renewals. Also on August Bank Holiday, we will close the line east of Manchester Victoria affecting all easterly trains, for S&C renewals at Deal St Jn. For nine days in October (half-term week), we will close the line between Wigan and Southport for large volumes of plain line track renewals.

CrossCountry, like other operators has aspirations for a 7 day railway. The nature of CrossCountry, Sunday carries the second highest volume of passengers (with Friday peak having the greatest volume). Therefore, some weekend line closures, extended journey times and bus replacement services can impact on the revenue of the business. Possession overruns resulting in unplanned service changes are particularly damaging.

Long term opportunities and challenges

Manchester Core

The ability of Manchester to handle a doubling of traffic in the next 30 years is constrained by several factors: in particular, the ability of the core to handle terminating trains, and the ability of certain pinch points to handle traffic from converging routes. Some of these factors are current issues, and some will feature increasingly as traffic increases. The individual issues are highlighted below.

Central stations – Overarching strategy

As there are so many issues affecting central Manchester, many of which interact with each other, the aim in CP3 is to develop a strategy which identifies the scheme (or schemes) required for implementation in CP4 and CP5 to provide a co-ordinated output (the North West Feasibility Study).

Piccadilly – Platforms 1–12

At Piccadilly the issues are the ability of the train shed platforms (1–12) to handle the number and length of trains, with their layovers; the capacity of the throat and its approaches; and the capacity of the Castlefield Corridor (including the ability of the satellite platforms to handle traffic). The station train shed operates with multiple occupancy of platforms. Lengthening trains will make this more difficult to accommodate, and will increasingly deliver passengers to the country end of the terminal platforms. The platform occupancy problem caused by train lengthening is not expected to become critical until CP5. Methods of dealing with this issue include:

To divert some eastern services to Victoria (this could be done in CP4 if the issue becomes acute before CP5) or convert them to tram-train operation and make the destination Piccadilly Metrolink; to make relatively minor track signalling alterations to platforms 1–4 to allow 12 x 23m vehicles to occupy them; to remodel Piccadilly and its approaches, including providing longer and more platforms – probably in CP6.

Once there is a sufficient number of trains filling the full length of the platforms, there will be a need for more lifts and customer information facilities on the overbridge. This will therefore become an issue which will require addressing in CP5.

Piccadilly – Platforms 13–14

Capacity on the Castlefield Corridor is constrained now by reoccupation of Piccadilly platforms 13 and 14. Longer term, creating two more through platforms (15 and 16) would allow alternate use of either side of island platforms moving the capacity constraint from Piccadilly to Castlefield Junction, and allowing additional trains through. Capacity is also lost by the Liverpool – Oxford Road local trains making a crossing move when terminating. Being able to terminate these services in a centre bay or run them through Piccadilly to another destination would also improve utilisation of the corridor. It could be that after creating a new platform 15 & 16, that there is a case to replace the existing 13 &14 with a new one in a similar style to the new 15 & 16. The scale of this intervention and need for Transport and Works permissions means that whilst it would be beneficial to develop this in CP4, it is likely to be implemented in CP5. Ultimately capacity would be maximised by four tracking the whole corridor.

Piccadilly – southern approaches

Capacity on the southern approaches is currently constrained by the layout and pattern of services. A significant portion of capacity is used up by the transpennine services to Liverpool and the TPE services to the airport crossing the throat on the flat. There is a case to be made for removing the crossing services by way of grade separation, such as a flyover at Ardwick. An alternative option is to redirect the Liverpool and airport services so that there is no need to cross on the flat, e.g. by means of a chord at Ordsall Lane and diverting traffic through Victoria. Capacity of trains could be increased in this area by the long-term aspiration to lengthen freight trains to 775m lengths. All these options will be evaluated as part of the North West Feasibility Study, along with other options to for addressing the capacity issue at Piccadilly, with an aim to begin implementation in CP5.

Capacity is constrained at Slade Lane due to the issue of six tracks merging into four, and there being a transposition from paired by use to paired by direction. The re-signalling of Piccadilly will provide a potential opportunity to extend the goods loops to Slade Lane and Ardwick to create a 6-track formation. Implementation is likely to be in CP5 or beyond.

Oxford Road

The work in CP4 to make the station DDA compliant will not address access to platform 1. If capacity on the Castlefield corridor is increased by creating a platform 15 and 16 at Piccadilly then platform 1 at Oxford Road will need to be in full operation in order to use capacity effectively, and it will therefore also require lift access.

Victoria

Capacity on the north side of Manchester can be maximised in the medium term by pushing services through Victoria, but in the long term the layout will

require remodelling and additional bay platforms will be needed on the north east, north west and south west quadrants of the station. It is likely that these works will be required beyond CP4, but they may be implemented in CP4 as opportunities arise with other schemes.

Liverpool Core

Liverpool Lime Street

Lime Street is constrained by the ability of the train shed to handle the number and length of trains, and their associated layovers; the capacity of the station throat, and congestion on the approaches. The layout of the throat is poor and this forms a constraint on capacity. The platforms are relatively short, and there are currently multiple trains on platforms by virtue of the existing services being relatively short. Once the local trains exceed 4 x 23m in length the low numbered side of the train shed cannot handle multiple trains in platforms. At this point the station and throat would need to be remodelled, creating more platform faces and better parallel moves. This will most likely occur in CP5.

An alternative option to substantial remodelling of the station would be to redirect some of the trains to different destinations. These alternative destinations would need to be established. Possibilities for these include reopening Waterloo, Wapping and Crown Street tunnels to traffic and creating suitable destination stations, or sending some passenger traffic over the Olive Mount Chord and the Bootle branch. Tram-train and on-street running would be more suitable for these reopened routes than conventional rail.

Outer areas

Outer/Inner timetables

In the future it is anticipated that the best use of capacity will be achieved by operating a timetable that is based on overlapping services, for example: all stops to Rochdale; with fast to Rochdale all stops to Todmorden; and with fast to Leeds calling at Rochdale and Todmorden en route all with the same frequency. Currently the infrastructure does not accommodate such a pattern of timetable, but corridors could be altered, relatively easily, to allow such a pattern.

Bolton – Blackburn

There is not currently a case for increasing the capacity on the Bolton – Blackburn corridor. It is likely, however, that there will come a time when, in order to cope with future demand on the line, it will be more economic to implement a higher frequency of service than to lengthen trains in the existing service beyond a certain length. It is possible that this change in strategy may be required in CP5.

Liverpool – Huyton

There is not currently a case for increasing the capacity on the Liverpool – Huyton part of the Chat Moss corridor. It is possible, that in order to cope with future demand on the line it is necessary to provide the ability for trains to be overtaken. This may be achieved by the use of slow lines between Broad Green and Huyton, and may be required as early as CP5.

Earlestown – Manchester

Although at present there is not a case for increasing the capacity on the Earlestown – Manchester part of the Chat Moss corridor, it is anticipated that future demand will generate a capacity issue on this line. This would be especially true if it becomes the favoured route for fast passenger services between Liverpool and Manchester and if one or both of the proposed freight terminals open. We would then look to evaluate the case for constructing some sections of slow line or additional platforms in order to accommodate this demand.

Manchester Airport

The creation of the third platform in CP3, will mean the capacity at Manchester Airport will become constrained by the layover of the trains and congestion at the throat. In the future it is anticipated that extending the line underneath the airport towards Northwich will be required in order to enable the airport station to handle increased traffic. This will allow for both future rail growth and the potential for new journey opportunities.

Aggregates

Peak Forest

Future growth of aggregates traffic will be constrained by the ability to move trains out along the Hope Valley. Thus either more capacity will need to be created on the Hope valley or an alternative route created. The schemes already identified start to make the Buxton Line an alternative route, but all the traffic so routed has to go through Stockport, which severely restricts the quantity of traffic that can go that way. A chord linking Buxton to Northwich would give access to the WCML if there were sufficient traffic growth to justify it.

Container Traffic

Seaforth – The long signalling section and relatively slow speed on the Bootle branch, restricts capacity. Whilst the creation of the Olive Mount Chord will allow this traffic to reach the WMCL without the need to do a run-round move, predicted growth in container traffic combined with growth in passenger traffic will lead to capacity issues. On the Bootle branch itself, this can be alleviated by

speeding up the line and increasing the number signal sections. Between Edge Hill and Earlestown a more radical option of reinstating long loops to create a four track railway may be necessary.

Trafford Park – Should platforms 15 and 16 at Manchester Piccadilly require to be built, then some additional capacity created may be available for container traffic. However, congestion at Trafford Park itself may mean that a long loop is required in future to relieve congestion and allow better access to and exit from the yard. Whether additional capacity is going to be adequate will not be known until the future of the two potential new freight sites at Parkside and Port Salford are known. Should it be inadequate, then more radical alternative solutions will need to be explored, such as western access.

Parkside and Port Salford – There are two potential new intermodal terminals on the Chat Moss line proposed. These schemes, if they go ahead, will redistribute container traffic across the route. We expect to have to explore the issue of capacity and alternative routes, possible leading to the need for loops or 4-tracking and gauge clearance of alternative routes.

Enhancements to be completed by end of CP3

Figure 19 CP3 enhancements

Implementation date	Project	Project description	Output change	Funding	Grip stage
2008	Ⓐ Manchester Airport Third platform	Create a third platform at Manchester Airport	Increased capacity, improved performance	Third party and Network Rail Discretionary Fund	6
2008	Ⓑ Olive Mount Chord	Reinstate the chord at Olive Mount in order to provide direct access between Huyton and Seaforth	Increased capacity for freight	Third Party/ Network Rail	5
2008	Ⓒ Guide Bridge West Junction renewal enhancement element	Renew junction with raised speed of the turnouts to and from Stalybridge	Higher turnout speed, no approach release on signals, shorted journey time	Network Rail Discretionary Fund	5
2008	Ⓓ Warrington Central	Access for All scheme for 2 new lifts	Improved passenger access	Third Party	5
2008	Ⓔ Gauge clearance on the Bootle Branch	Increase gauge to W10 between Seaforth and Edge Hill	Enables larger freight containers to run on this line	Third Party	5
2008-09	Ⓕ Manchester Piccadilly Platform 13 and 14	Scheme to de-clutter platforms 13 and 14 at Manchester Piccadilly station.	Improve passenger flows	Network Rail Discretionary Fund	4

Proposed enhancements in CP4

Figure 20 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2008-09	Ⓖ Stalybridge station	Enhancements to station facilities	Improvements to station facilities	Third party	5
2009	Ⓗ Liverpool Lime Street Gateway	Improvements to frontage of station including opening up the frontage and replacing the existing concourse	Improved station environment and access to the front of the station	Third party	4
2009	Ⓛ Chorley Buckshaw Village	Potential new station	New asset : increased capacity	Third party	4
Dependent on GMPTE timings	Ⓜ Metrolink Phase 3	Extension of metro system onto the Oldham Loop	Transfer of ownership to PTE	Third party	4
2009	Ⓘ Broad Green station	Car park extension scheme	Improved car parking facilities	Third party	3
2009–2014	Ⓙ Ditton freight terminal	Expand existing freight facilities	New warehousing, improved sidings and access	Third party	3
2009–2014	Ⓚ Parkside freight terminal	Create new freight terminal	Create new terminal with access	Third party	3
2008	Ⓝ Bolton, Cheadle Hulme Guide Bridge car parks	Extension of car parking	Improved car parking facilities	Third party	1
2009	Ⓞ Hattersley station	Redevelopment of station	Improved station facilities	Third party	1
2009-10	Ⓟ Blackpool North station	Development of Talbot Road area with potential station enhancements	Improved station facilities	Third party	1
2010-11	Ⓠ Carr Mill	Potential new station	New asset : increased capacity	Third party	1
2010-11	Ⓡ Chapleford	Potential new station	New asset : increased capacity	Third party	1
2009–2014	Ⓢ Port Salford freight terminal	Create new freight terminal	Create new terminal with access	Third party	1
2009–2014	Ⓐⓔ Speke to Seaforth W10 Clearance	Gauge clear the route between the WCML and Seaforth – alternative route	W10 clearance Edge Hill to Earlestown	PTIF	3

Figure 20 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009–2014	Ⓣ North Transpennine Upgrade phase 1 cross-route project – also see Route 10	Liverpool - Manchester - Leeds line speed and capacity increase	Increased capacity and improved performance and journey times	Periodic Review 2008	1
2009–2014	Ⓤ Salford Crescent	Redevelop and possibly relocate Salford Crescent with more and longer platforms	Create a new Salford Crescent station, giving four through platforms and up to 2 south facing bays, creating greater capacity for both passengers and trains. Make the platforms long enough for lengthened trains and facilities suitable for an interchange station.	Periodic Review 2008	1
2009–2014	Platform lengthening	Increase in train lengths and associated platforms to accommodate peak passenger growth	Longer trains allowing greater peak passenger numbers	Periodic Review 2008	–
2009–2019	Ⓥ North West Feasibility Study (Manchester Hub)	Enhance the capacity of the rail network in central Manchester and improve regional services	The CP4 works will identify the strategic Regional issues to be addressed, as well as how and when they should be addressed. Full implementation is expected to be after CP4	Periodic Review 2008	–
2009–2014	Ⓦ Route 20 capacity improvements	Speed up the Hadfield line by way of track and signalling improvements, and a new turnback facility with associated OHLE works Create a bay platform at Stalybridge that can be accessed from Victoria without the need to cross the main line. Create a Manchester facing bay or additional through platform at Rochdale that allows trains to turn back without a shunt move Create facing move that allows access to both Buxton platforms without a shunt move Improved passenger environment at Victoria Potential other speed increases and additional turnback facilities as the rolling stock deployment strategy emerges	Infrastructure improvements that allow more efficient use of rolling stock. This will allow the HLOS targets to be met without the need to excessively lengthen platforms, and using fewer units than otherwise	Periodic Review 2008	–
2009-14	Ⓧ Guide Bridge – Stalybridge electrification	Electrify from Guide Bridge to Stalybridge inclusive, including the existing bay platform	Allow electric units to work Piccadilly – Stalybridge services and thereby allow intermediate stops to be removed from Hadfield services, increasing their efficiency and allowing HLOS targets to be met	Periodic Review 2008	–

Figure 20 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 – 2014	(Y) Salford Central platforms on Liverpool lines	Create platforms on the Liverpool lines	Allow passengers easier access to Salford and Spinningfields, alleviate passenger congestion / disruption at Victoria and give capacity benefits at Salford Crescent	Periodic Review 2008	–
2009 – 2014	(Z) Buxton Line Capacity and Line speed improvements	Remodel layout at Buxton, increase line speed and associated capacity on the Buxton Line	Removes some freight traffic from the Hope Valley line improving performance and increasing capacity. On the Buxton line the work will reduce the performance and capacity on passenger services, by the redirecting of freight trains. Improve line speeds and reduce PSRs in line with the North West RUS, with a likely focus on freight speeds. Allow direct freight access to the Down slow line from Dowlow and Great Rocks	Periodic Review 2008	–
2009 – 2014	(AA) Bolton Corridor Line speed and capacity Improvement	Improve on PSRs, raise line speed and improve on restrictive signals on the Bolton corridor, improve capacity by providing platform 5 at Bolton or possibly alternatively additional platforms at Lostock	Improved capacity and journey times between Manchester and Preston/Blackpool in line with the RUS recommendation	Periodic Review 2008	–
2009 – 2014	(AF) Stabling for Northern Rail trains	Provision of improved stabling facilities and additional stabling capacity to cater for Northern Rail's additional units	Increased stabling capacity and enhanced facilities at: Buxton; Stockport; Allerton/Speke; Wigan; Blackpool North; Guide Bridge	Periodic Review 2008	–

NRDF candidate schemes in CP4

Figure 21 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 – 2014	(AB) CLC up loop	Create loop on the up line on the CLC – possibly at Warrington or at Glazebrook	Improved performance	Network Rail Discretionary Fund	–
2009 – 2014	(AC) Improved interchange at Eccles	Improve the interchange between train and tram at Eccles – by way of advertising, signage and improving the station environment	Would alleviate passenger congestion/ disruption at Manchester Victoria	Network Rail Discretionary Fund	–
2009 – 2014	(AD) Longsight Goods Loops	Speed up access and egress speeds into the loops to improve freight recessing	Allow passenger traffic to avoid freight services	Network Rail Discretionary Fund	–
2009 – 2014	North West RUS – clearance for RA10 in east Manchester	RA10 clearance on targeted routes in east Manchester	Increased freight capability	Network Rail Discretionary Fund	–

Maintenance and renewals activity

Figure 21 shows the estimated maintenance and renewal costs and activity volumes.

The precise timing and scope of renewals will remain subject to review to enable us to meet our overall obligations as efficiently as possible, consistent with the reasonable requirements of operators and other stakeholders.

It should be noted that in order to manage the deliverability of our Civils, Signalling & 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 21 Summary of estimated maintenance & renewals costs and activity volumes

£m (2006/07 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	Control Period Totals CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	16	16	15	15	15	77	70	66	66
Signalling	5	5	5	5	4	23	21	20	20
Electrification	1	1	1	1	1	6	5	5	5
Telecoms	3	3	2	2	2	13	11	11	11
Plant and Machinery	1	1	1	1	1	3	2	2	2
Other (overheads / indirect)	14	13	13	13	12	65	58	56	56
Total	**40**	**38**	**37**	**37**	**36**	**188**	**169**	**161**	**160**
Renewals									
Track	24	28	22	25	22	123	73	62	64
Signalling	8	14	9	9	5	45	45	96	114
Civils	22	21	20	20	20	103	92	89	88
Operational Property	11	10	10	10	10	50	48	48	48
Electrification	3	4	3	3	2	15	8	9	5
Telecoms	11	8	6	4	2	32	16	13	17
Plant and Machinery	4	3	2	2	2	13	14	14	15
Total	**83**	**88**	**72**	**73**	**62**	**380**	**296**	**330**	**351**
Renewals Volumes									
Rail (KM)	14	14	15	16	15	75	100	75	52
Sleepers (KM)	27	27	27	27	27	133	65	82	116
Ballast (KM)	26	26	26	26	26	131	72	96	130
S&C Units	23	40	23	33	28	147	76	67	75
SEUs commissioned	0	33	41	28	0	102	53	556	423

Appendix

Figure 22 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
20.01	Manchester Piccadilly – Crewe	CMP1, CMP2	Primary	DfT	No	W9 & W10	8	100 (75)	25 kv	TCB	3	2 (4)
20.02	Manchester Piccadilly – Deansgate	COL	Secondary	DfT	No	W9 & W10	8	35	25 kv	TCB	2	2
20.03	Deansgate – Allerton	MAJ, AHX, WJL2, WJL3	Secondary	DfT	No	W9 (W9 & W10)	7 (8)	85 (75)	none (25kv)	TCB (AB)	4 (2) (8)	2
20.04	Liverpool Lime Street – Allerton	WJL3, WJL4	Primary	DfT	No	W9	8	80	25 kv	TCB	3	4
20.05	NTP: Manchester Piccadilly – Guide Bridge	HAJ	Secondary	DfT	No	W8	8	60	25 kv	TCB	4 (2)	2
20.06	NTP: Guide Bridge – Stalybridge	SAJ	Secondary	DfT	No	W8	8	40	none	TCB	4	2
20.07	Castlefield Jn – Euxton Jn	MVE1, MVE2, OLW, COL	Secondary	DfT	No	W9 (W7) (W6)	8	75	none	TCB	3 (4)	2
20.08	Ashburys/Hyde Jn – New Mills Central/Rose Hill	TTA1, TTA2, MRH, RHY1, RHY2	Secondary	DfT	No	W7	8	60	none	TCB	4	2
20.09	Guide Bridge – Glossop/Hadfield	DSD, HAJ, GDW	Secondary	DfT	No	W6	8	60	25 kv	TCB (AB)	12½	2 (1)
20.10	Guide Bridge – Stockport – Mouldsworth	HNS, EJN, WJP1, CDM2	Secondary	DfT	Yes	W7 (W9) (W8) (W6)	8	90 (60)	none (1500 dc)	TCB (AB)	12 (4)	2 (1)

Figure 22 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
20.11	Slade Lane Jn – Manchester Airport – Wilmslow	MIA, STY, SMS	Secondary	DfT	No	W9 & W10 (W6)	8	75	25 kv	TCB	3	2
20.12	Blackpool North and South Branches	PBN, KBS1	Rural	DfT	Yes	W6	8	75 (70)	none	AB (OTW)	4 (6) (23)	2 (1)
20.13	Edge Hill – Victoria plus Springs Bank – Broad Green plus Earlestown	EEE, DSE, NGJ, WEE, SBH1, SBH2, SBH3	Secondary	DfT	No	W9 (W8)	7 (8)	75	none (25kv)	TCB (AB)	4 (5) (8½) (10)	2 (1)
20.14	Southport/Kirkby – Wigan Wallgate	WKL1, WKL2, WBS3	Rural	DfT	Yes	W9 (W8) (W7) (W6)	8 (7)	70	none	TCB (AB) (OTS)	14 (17½)	2 (1)
20.15	Wigan Wallgate – Manchester Victoria	MVE1, WBS1, WBS2, LCN	Secondary	DfT	No	W7 (W6)	8	60(40)	none	TCB (AB)	14 (6) (4)	2
20.16	Manchester Victoria – Rochdale/Stalybridge	MVL1, MVN2, MVM, MPR1, BPP,	Secondary	DfT	No	W7	8	70	none	AB (TCB)	2 (4) (5)	2
20.17	Buxton Branch	BEJ	Rural	DfT	Yes	W6	8	60 (40)	none (25kv)	AB (TCB)	12½	2
20.18	Bolton – Blackburn	BBB	Rural	DfT	Yes	W6	8	60	none	TCB	19 (4)	1 (2)
20.19	Oldham Loop	MPR2, MPR3	Rural	DfT	No	W6	8	60	none	AB	9 (4)	2 (1)

Figure 22 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
20.20	Freight Lines	PPP1, CMP1, SYC, GMC, PPA1, SCT1, SNJ, HCN, DJO1, PPA2	Freight	DfT	No	various	8 (7)	20 (60)	none (25kv)	TCB (AB)	various	2 (1)
20.21	Hazel Grove – Edgeley Jn											

Capacity and operational constraints
A Manchester hub: capacity constraint
B Salford Crescent – Euxton Junction capacity constraint
C Ardwick Stalybridge: busy 2-track section with a mix of traffic, flat junctions and limited overtaking
D Piccadilly – Hunts Cross: busy 2-track section with mix of traffic, flat junctions and limited overtaking
E Bolton – Blackburn: single line sections
F Stockport – Altrincham: single line sections

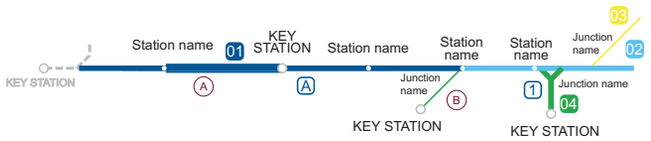
Other issues on the route
1 Oldham Loop Metrolink issues
2 Chorley Buckshaw Village – siting of new station
3 Fylde Coast tram proposals
4 GMPTE tram proposals
5 Manchester Victoria – former Manchester Exchange development
6 Potential intermodal freight terminals

Note

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

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

Key to route diagrams



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

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

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

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

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

Track descriptions

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

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

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

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

GRIP stages

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

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