Route Plans 2009
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 into 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, and the southern routes into Preston. 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 cross Pennine 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 Ditton and Liverpool docks and on the North and South cross Pennine routes. Other traffic includes services from the South East ports of Felixstowe and Southampton.

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

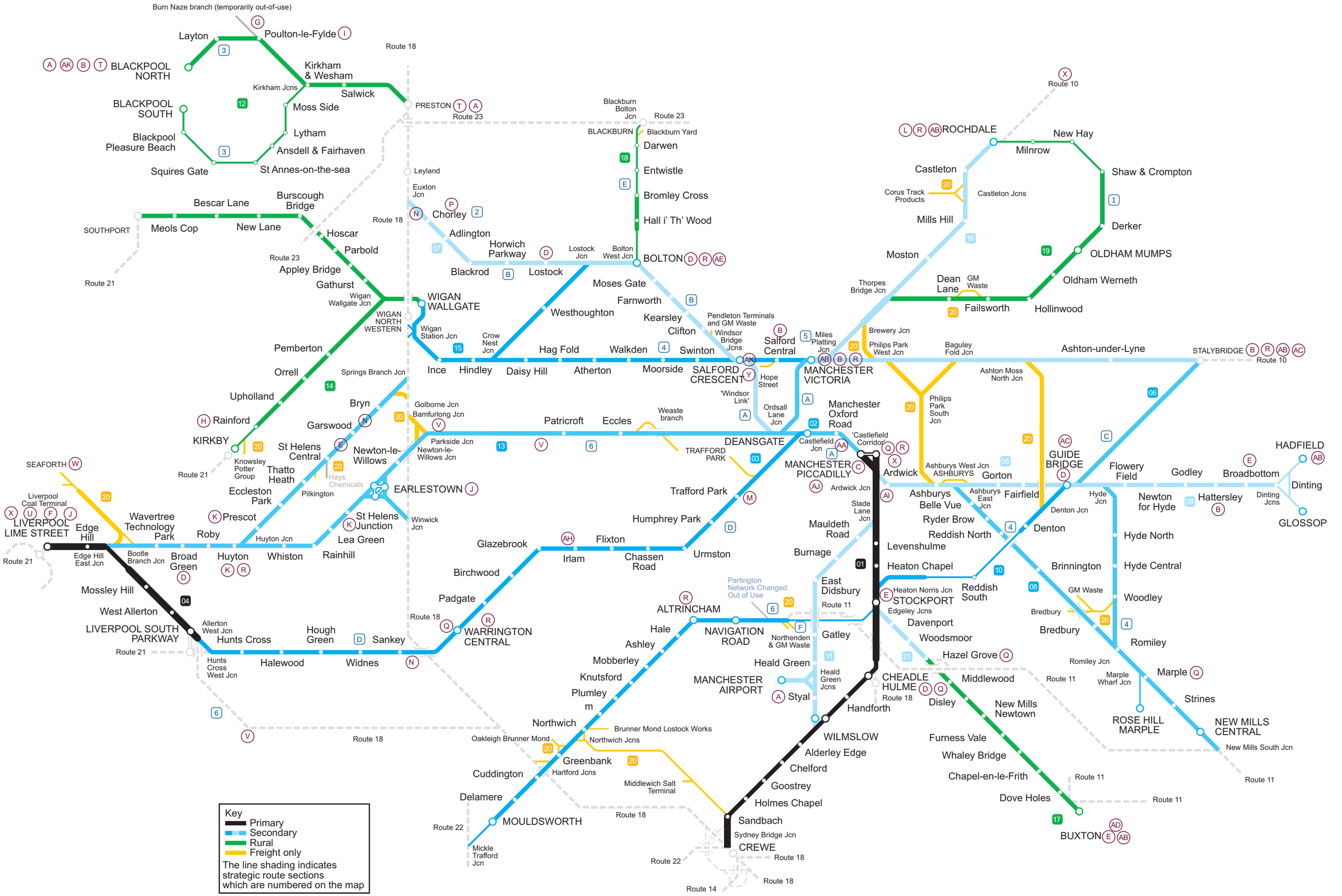
The route was the subject of the North West Route Utilisation Strategy (RUS), which was published in May 2007, and established in July 2007. A number of the recommended schemes in the RUS have been included in the Strategic Business Plan for Control Period 4, and some schemes have already been implemented.

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 the 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 Kirkby (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

Passenger

There is a substantial commuter and off peak market for rail services into the centres of Manchester, Liverpool and to a lesser degree Preston. There are strong leisure and business flows between the North West and London, Birmingham, North Wales and Yorkshire. Manchester Airport is also 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 have masked the underlying growth for several years.

However, since 2002/03 there has been substantial growth as demand has recovered from these setbacks. Between 2002 and 2005 there was growth in the region of 15 percent - 20 percent in demand both for journeys within the route, and for journeys to destinations outside the route other than London. In recent years Northern Rail has reported an average growth of around 10 percent per annum. This level of growth is in excess of that predicted using the standard industry forecasting framework the Passenger Demand Forecasting Handbook (PDFH). A new timetable was introduced in December 2008 which impacted on much of this route, amending many services which interface with those long distance services on the WCML. Recent RUS demand forecasts, however, predict further growth will continue.

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. This sharp morning peak is still in evidence in early 2009 and is continuing to increase.

Freight

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 coal, steel and recycled materials traffic. Other freight traffic includes coal to Fiddlers Ferry power station, Manchester waste traffic across the pennines and traffic to and from Northwich.

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

Route section	Fast lines	Slow lines
Manchester Piccadilly – Slade Lane Jn	14	10
Slade Lane Jn – Stockport	7	8
Slade Lane Jn – Manchester Airport	10	–
Manchester Oxford Road – Deansgate	11	–
Salford Crescent – Bolton	11	–
Ardwick – Ashburys	14	–
Liverpool Lime Street – Edge Hill	6	8

Current services

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

The train operating companies providing services on the route are Arriva Trains Wales (ATW), CrossCountry, DB Schenker, DRS, East Midlands Trains, Fastline Freight, Freightliner Heavy Haul Limited, Freightliner Limited, London Midland, Merseyrail, Northern Rail, TransPennine Express (TPE) and Virgin Trains.

Passenger services

There is a mix of three broad types of passenger service:

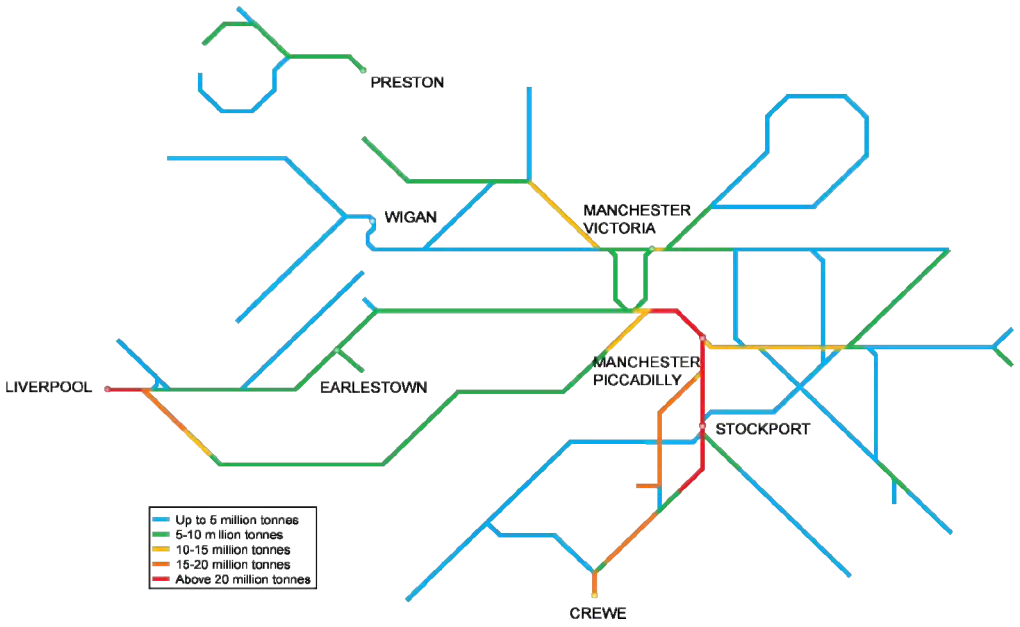
- long distance intercity services to destinations that include Scotland, Newcastle, Birmingham, London and the south coast;
- interurban express services, to Llandudno, Barrow-in-Furness, South Wales, South Coast, Scotland, Newcastle, Cleethorpes, Sheffield, Nottingham and Norwich; and services out of Liverpool and Manchester;
- suburban local services within the urban area – Manchester to Hadfield and Manchester to Rose Hill Marple.

Interurban and suburban services vary in length on the route with services generally ranging between two and six-car lengths. The majority of services on the route are hourly (or better) throughout the day. Following the implementation of the December 2008 timetable, there have been some significant improvements, primarily to the frequency of Virgin Trains services, with the introduction of three trains per hour in the off peak. As a direct result of these improvements, some CrossCountry services have also been modified.

There are a number of services that operate half hourly. These include the long distance intercity services between Birmingham New Street and Manchester – Bristol/Reading, and the interurban services operating between Manchester Victoria - Leeds via Rochdale, and between Birmingham - Liverpool.

Some suburban services operate on a half hourly pattern 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. However, there are locations where hourly services combine to give a more frequent service over a portion of the route.

Figure 2 Tonnage



Freight services

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; container traffic to and from the WCML and flows to Ironbridge and Ratcliffe. Other key flows include traffic to and from Trafford Park, Ditton and Garston. Smaller flows include waste trains to and from various terminals around Manchester, and the Northwich stabilisation scheme, which involves bringing in fly ash to Northwich and then taking the output brine to Middlewich. The location of these freight terminals in the centre of Manchester adds to the operational complexity of this route, particularly as there is no direct access and egress to Trafford Park from the west.

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

Traffic volumes are summarised in Figure 3.

Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	22	1	23
Train tonne km per year (millions)	2,880	870	3,750

Current infrastructure capability

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

Figure 4 Linespeed

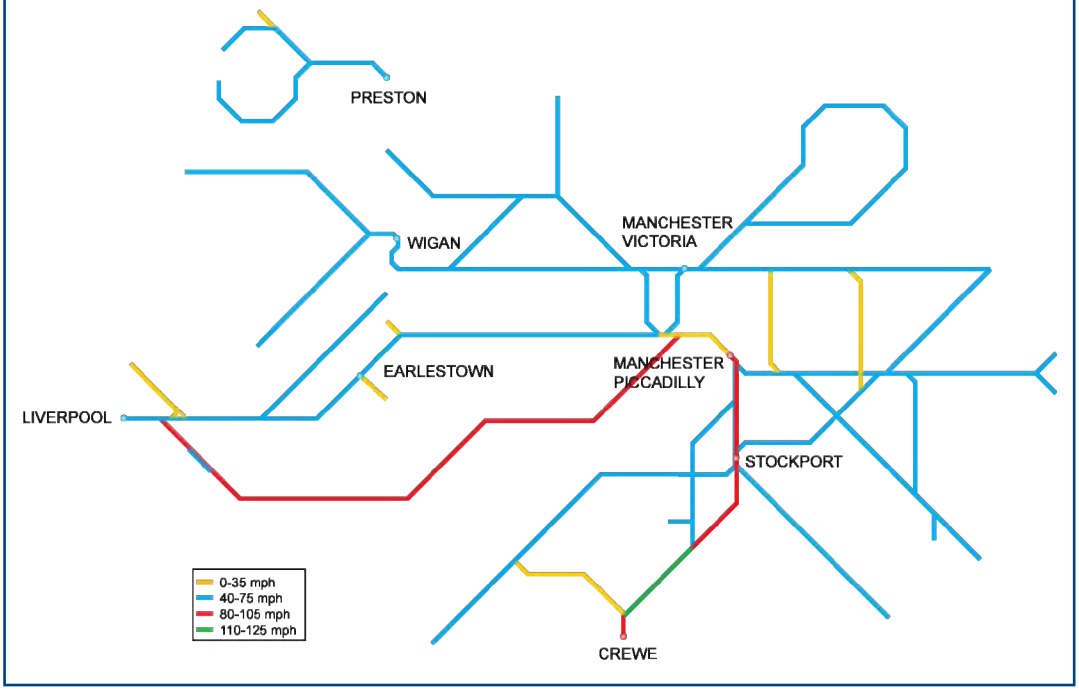


Figure 5 Electrification

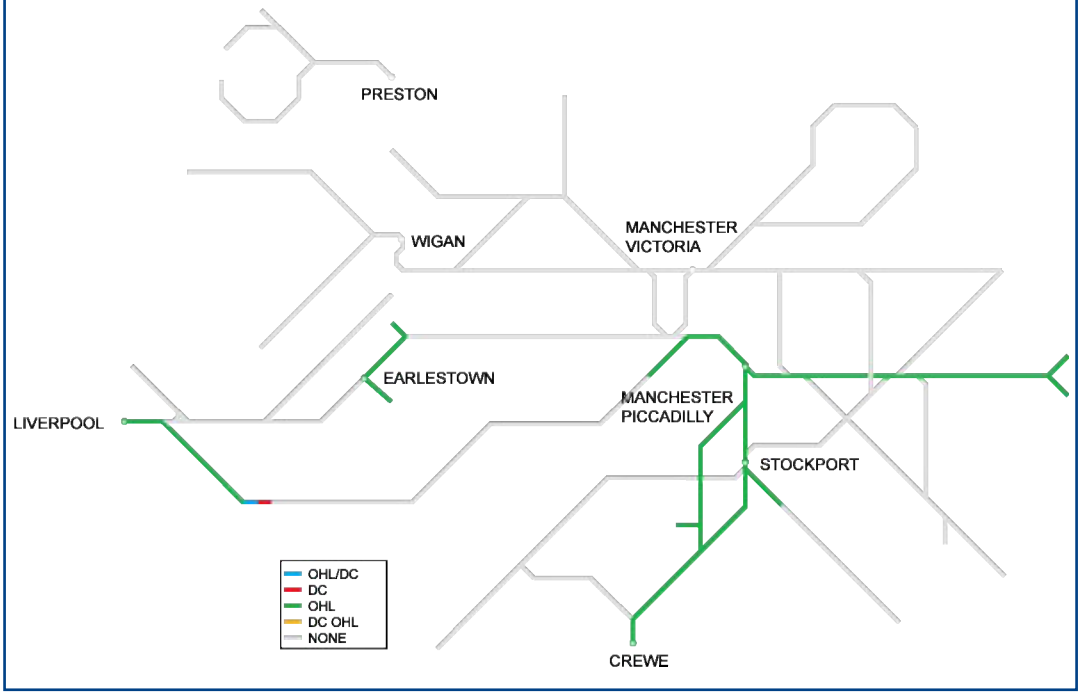


Figure 6 Route availability

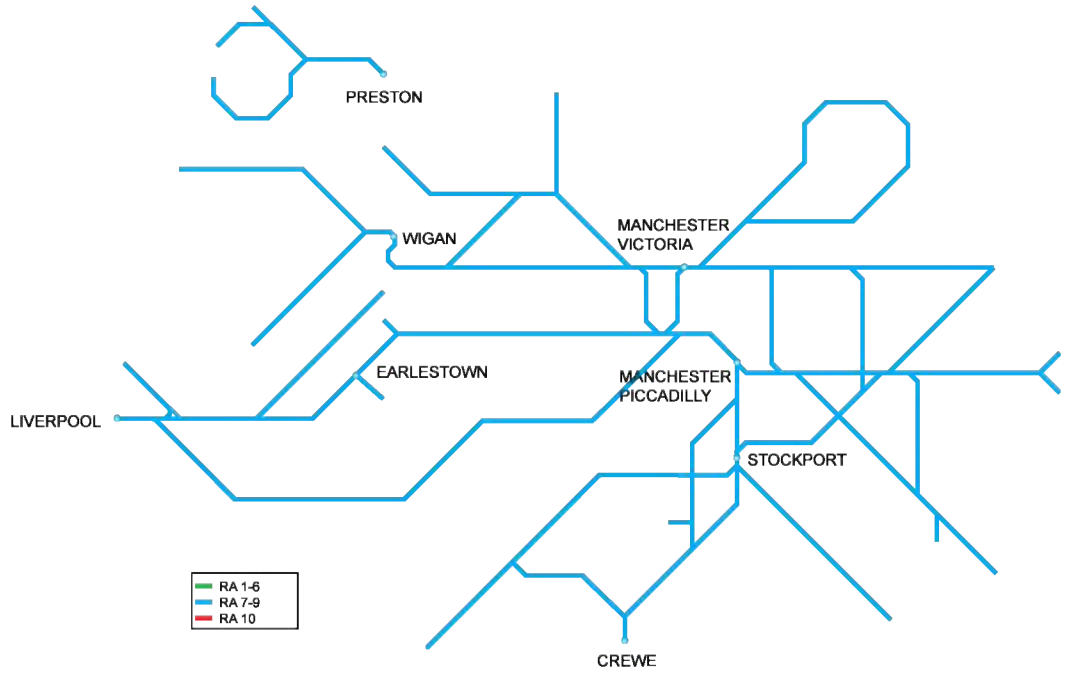
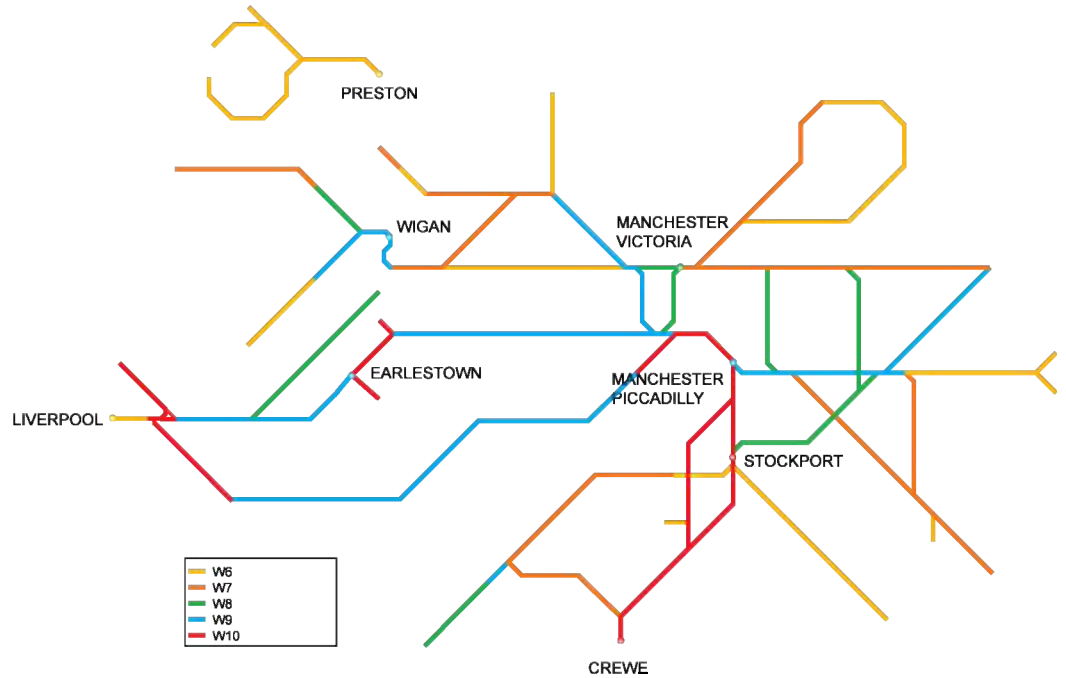


Figure 7 Gauge



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 services mean that capacity is fully utilised at a number of key sections, including the approaches to, through, and in the main station at Manchester Piccadilly. The operation and timetabling of services into Manchester Victoria station is constrained by the number of turn round moves that can take place and by restrictions governing levels of permissive working. Some corridors and key junctions are heavily utilised and constrained due to signalling and track configurations. These include Ordsall Lane and between Manchester and Liverpool (via Warrington). The layout at Salford Crescent comprises two five-car platforms between junctions on both sides and where two double track railways converge. The layout here makes this the tightest constraint on the north west side of the conurbation. The greatest constraint on the south east 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) including freight services to Trafford Park.

Capacity at Liverpool Lime Street is constrained mainly by the restrictive layout which allows minimal parallel moves in and out of platforms. Developing our future train lengthening plans will mean that the relatively short platforms will become a further constraint, as they will only be able to accommodate one train at a time.

At critical pinch points on the network, trade-offs have already been implicitly made between performance and the number of trains operating. For example the number of trains using the same stretch of infrastructure (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). Capacity is also constrained due to the mix of slow and fast traffic, particularly on the line to Manchester Airport, the line through Warrington Central and the line from Salford to Bolton.

As previously mentioned there are sections of the route where capacity is almost fully utilised. This often leads to performance risks and restrictions and alterations to services. 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.

There are two intermodal terminals on the route – Seaforth and Trafford Park – and two just on the periphery at Ditton and Garston (Route 18).

There is limited capacity for traffic serving the Trafford Park Freightliner Limited terminal (near Manchester). This constraint is caused by a number of issues including the restricted train paths that are available through Manchester Piccadilly station and poor track configuration at the terminal.

Freight capacity was increased in the Liverpool area in December 2008 by the reinstatement of the Olive Mount chord. This new chord onto the Bootle branch was funded by the Transport Innovation Fund (TIF) and involved installing a crossover and lead junction at Bootle. This new chord allows trains to access the Bootle branch directly from the Earlestown direction, without the need for a run-round move and has increased the capacity for freight traffic to and from Liverpool docks. In addition there has been a third party funded gauge clearance project between Seaforth and Edge Hill. This clearance scheme increased the gauge to W10 creating the ability to transport larger freight containers on this line.

Figure 9 2008/09 PPM

TOC	MMA	As at period
Arriva Trains Wales	92.7%	10
London Midland	86.5%	10
Northern Rail	89.4%	10
Transpennine Express	90.2%	10
CrossCountry	89.8%	10
Virgin Trains	81.3%	10
Merseyrail	94.8%	10

Current performance

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

General performance

Performance on this route has continued to improve during 2008 and early in 2009, though the high density of traffic means that any significant incident, particularly around Manchester Piccadilly can still cause considerable disruption. The improved performance can be attributed to the investment and initiatives detailed below, together with the fact that the route has been free of delay induced speed restrictions for several months.

Renewals and enhancements

Route 20 has seen significant investment in recent years, including the new signalling control centre at Stockport covering the Sandbach – Cheadle Hulme area, interlocking renewals at Stockport and Edgeley, Junction renewals at Longsight, Castlefield, Ashburys, Guide Bridge, Salford Crescent. December 2008 saw the completion of work to provide a third platform at Manchester Airport station. This has greatly increased operational flexibility at the station and significantly reduced the number of times that late running services have had to be terminated at Manchester Piccadilly. In addition a number of lines have seen significant track renewals, with increased linespeeds provided on the routes via Wilmslow and Macclesfield. This, together with the route being free of delay induced speed restrictions has greatly improved performance. The junction at Guide Bridge West has been renewed at higher speeds providing a performance buffer for TPE services. A new chord at Olive Mount has also been opened. This avoids the need for all freight trains from Liverpool docks to run around and reduces the risk of associated delays.

Seasonal effects

Mild conditions in the summer prevented any major heat related performance issues, but any requirement for heat restrictions would have been minimal and mitigation actions were in place for each risk site. A major issue during previous spells of hot weather has been the performance of the switch diamond points at Slade Lane which have been susceptible to extremes of weather due to rail expansion. During September 2008 maintenance teams completed work on converting the points to clamp lock design which will make the points less susceptible to this problem and greatly improve reliability particularly during high temperatures.

Throughout the year there have been periods of extremely heavy rainfall which have caused occasional flooding problems at various locations. The majority of issues have arisen as a result of water flowing onto the infrastructure from third party land, notably at Heald Green, Westhoughton and New Mills, with the latter resulting in an embankment slip. Network Rail engineers assisted with repairs to collapsed drainage within the third party land at Heald Green and repairs to the embankment at New Mills were also completed. This involved extensive repair work as the embankment was re-built and stabilised. The capacity of the drainage at Westhoughton is to be increased to mitigate against the issue at this location.

Autumn always presents a risk to performance. However, the Network Rail area team work closely with train operators within a joint autumn project team which continues to successfully reduce the impact of autumn. 2008 saw further investment in equipment for the mobile ‘leaf-buster’ teams and track side traction-gel applicator machines. In addition to this the area has secured significant funding for additional devegetation work at locations that customers have highlighted as being prone to adhesion problems during autumn or where overhanging trees have been identified as posing a risk to the overhead line equipment. A major programme kicked off in 2008 and continues well into 2009.

Route crime

Whilst route crime incidents on the route are generally reducing, the major issue affecting performance has been the increase in cable theft. The high value of copper and other metals has led to an increase nationally and this route has experienced incidents at a number of key locations including Bolton, Manchester Victoria, Warrington, Rochdale, Stalybridge and Stockport. Network Rail has been working closely with British Transport Police and key customers to jointly address the problem and we currently have a number of private security patrols in place. These patrols make regular checks at hot spots 24 hours a day. Whilst a number of successful prosecutions have been the result of this joint working with the Transport Police, the issue still remains a risk to future performance.

Timetable introduction

December 2008 saw the most significant timetable change on this route for many years. The launch of the Virgin Trains Very High Frequency (VHF) service required a complete recast of the timetable in the North West, especially radial routes into Manchester. In addition to the enhanced London services, now increased to three trains per hour, the timetable pattern on many other routes has been changed. Major changes included the replacement of the Northern Rail Deansgate – Macclesfield service with an hourly Manchester Piccadilly – Stoke service, a half hourly all stations service between Manchester Piccadilly and Manchester Airport and the splitting up of the Buxton – Blackpool service into three new groups: Buxton – Manchester Piccadilly, Hazel Grove – Preston and Manchester Victoria – Blackpool. Whilst such a major change can often present a risk to performance, the work carried out to ensure the robustness and accuracy of the new timetable has meant that there has been no detrimental effect on performance. For the first time the entire timetable has been planned using computerised modelling of key junctions. This has allowed accurate calculation of the margins required between trains at each junction which has meant a reduction in timetable conflicts.

This planning has proved critical due to the number of long distance services on this route, e.g. the Norwich to Liverpool service where due to the distance it travels, and the number of main arteries it crosses, performance has to be carefully managed to not impact onto other services on the route.

Section 2: Tomorrow's railway: requirements

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

Routes	Annual passenger km (millions) forecast in 2008/09	Additional passenger km (millions) to be accommodated by 2013/14
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	3,600	41	12,300	2,000	46

Future demand in CP4

Passenger 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 rail's mode share to airports (both Manchester and Liverpool, and Birmingham on Route 17) there is significant passenger growth to be accommodated on all corridors. Recent counts on various services have indicated an overall growth rate in line with these predictions. This anticipated level of demand is reflected in the level of demand specified in the HLOS. It is expected that this growth will occur in commuter, leisure and business markets.

Freight

The Freight RUS predicted the number of freight services in the area will continue to increase. In particular, intermodal flows are predicted to increase in the North West region and this will need to be met by longer and then more services to Trafford Park. The enhanced gauge on the Seaforth to Edge Hill route (W10 clearance) section will assist in encouraging future freight growth.

The port expansions at Felixstowe, Bathside Bay and London Gateway are also forecast to continue beyond CP4. To ensure that rail maintains its competitiveness in the carriage of containers to and from the ports, it is imperative that key routes are adapted to enable trains to convey 9' 6'' containers without the need for special lower capacity wagons. Gauge clearance to W12 on key routes within the North West will, therefore, be essential in order to accommodate forecast growth in freight traffic.

Future demand beyond CP4

The 2007 Government White Paper 'Developing a Sustainable Railway' anticipates a doubling of both passenger and freight demand over the next 30 years. The Manchester Hub Study is expected to identify the scale of this growth and options for addressing it.

The Freight RUS also identified continuing freight growth into CP5. A significant portion of this growth identified in the White Paper is likely to come from intermodal traffic, coal and aggregates.

There are two intermodal terminals planned by developers in the North West region, one proposed at Parkside and the second at Port Salford. There is also a significant level of aggregates traffic originating from the Peak District terminals which is forecast to continue to grow. This predicted growth will impact on this route.

Section 3: Tomorrow's railway: 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
2009 – 2014	Train lengthening	Platform lengthening	Accommodating existing and future peak passenger demand
2009 – 2014	Calder Valley long distance trains to serve Salford Central and Crescent, potential additional services through Salford Crescent from Atherton or Bolton	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
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
2008 - 2014	Manchester 'Hub'	Single option defined for capacity enhancement of the Manchester 'Hub' developed ready for CP5 implementation	Increased capacity (when implemented)
2009 - 2014	Route 20 Capacity Improvements project	Capacity improvements on the following corridors: Hadfield, Stalybridge, Rochdale, Buxton and Manchester Victoria	Recast of Northern Rail services to meet HLOS crowding targets and loads at Manchester

Figure 12 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2011 - 2012	106 additional vehicles added to Class Pendolino 390 fleet - making sets 35 X 11-car sets in total. (Virgin Trains) (potential for a further order of 42 vehicles – making a total of 56 x 11-car sets)	Platform extensions required at numerous key stations. Some stations will have to be resolved through Selective Door Opening (SDO). Maintenance depot improvements are being undertaken to accommodate longer vehicles.	Additional standard seats delivered on mainline intercity services

Figure 13 Capacity enhancements to meet HLOS peak capacity in CP4

Description	Additional vehicles involved	Station served	0700 – 0959 Capacity Impact	0800 – 0859 Capacity Impact
Pendolino lengthening	(Shown under Route 18)	Liverpool Lime Street	200	200
Pendolino lengthening	(Shown under Route 18)	Manchester Piccadilly	900	500
TPE lengthening	14	Manchester Piccadilly	2,300	1,000
Northern train lengthening	54	Manchester Piccadilly	6,100	5,800
Northern train lengthening	13	Liverpool Lime Street	1,300	1,300
TPE lengthening	1	Liverpool Lime Street	300	100

Figure 14 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
Manchester	26,200	52,300	61,700	42%	12,900	22,200	29,500	44%
Liverpool #	31,300	10,600	12,400	40%	14,300	3,700	,5300	46%
Other Urban Areas		60,700	65,300			22,100	26,100	

#included in aggregate target across a number of regional hubs

*These figures do not include the additional vehicles for CrossCountry to meet HLOS allocation

The table 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.

Strategic direction

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

Both the Regional Economic Strategy (RES) and Regional Spatial Strategy (RSS) 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 experiencing twice as much passenger growth as Liverpool – Manchester. The HLOS identified that the fastest journey time between Liverpool and Manchester should be improved to 40 minutes. The North West RUS also determined that there was a case for strengthening the links between Preston and Manchester, and Liverpool and Manchester, by increasing frequency and/or improving linespeeds. An additional service between Manchester and Preston has been included in the recent timetable change but improvements to linespeeds remain an aspiration.

The biggest strategic challenge is the issue of passenger demand exceeding supply, especially in the peaks. The North West RUS identified that 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 working with the train operators and DfT to determine the most effective service flows to deploy the additional vehicles. In discussions with Northern Rail it was highlighted that the most efficient use of a strengthened fleet is for trains, where possible, to work through the centre of Manchester. This would 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 such as turnbacks at Rochdale and Stalybridge, an improved layout at Buxton and a minor electrification extension to Stalybridge. To the west additional capacity interventions are needed at Salford Crescent that facilitates either, services terminating and/or additional services to operate through and beyond the station towards/from places such as Bolton, Atherton and Wigan.

In addition, the 2008 timetable has increased the number of London – Manchester trains to three 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-car Class 185s. This could happen in the life of their franchise. We are working with TPE and the DfT to improve journey times between Liverpool and Manchester and between Manchester and Leeds.

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

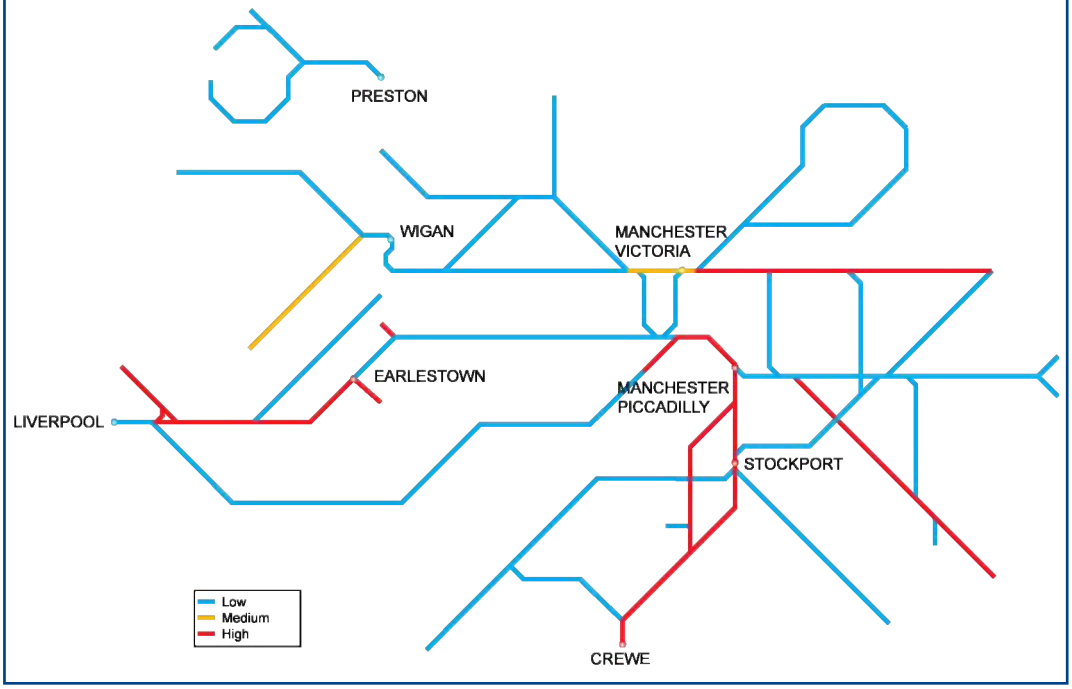
Through the ongoing RUS programme, CrossCountry aims to address train service provision, capacity and journey time issues within CP4 through the re-routeing of some of its services. 45 percent of CrossCountry passengers change train, usually onto or off other operator services. Connectivity is therefore a key issue for CrossCountry in CP4 and beyond, and must be taken into account when formulating route strategy going forward.

Following the vote cast against the Manchester Transport Innovation Fund (TIF) ‘referendum’ on 12th December 2008, the Manchester Authorities have been giving careful consideration to the vote results. The TIF programme represents the Greater Manchester priorities for the heavy rail network. If the programme is not progressed, Greater Manchester will still have aspirations to deliver some of the proposed schemes using other funding sources, but delivery will be over a longer timescale.

The Oldham Loop will transfer to Metrolink operation, and heavy rail operation will cease in October 2009. This is likely to free up paths at Manchester Victoria, and create the necessity for services to work through from new destinations. In the interim the heavy rail service on the Oldham Loop will operate independently of the rest of Northern Rail’s operation, which started from the December 2008 timetable. Transfer of the loop to Metrolink will involve some infrastructure works at Rochdale including a turnback facility which utilises a small section of the line to Milnrow.

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 willing to evenly distribute themselves between the two stations, easing loadings on some services.

Figure 15 Tonnage growth



There is a property scheme being developed for the Fish Dock at the Metrolink side of the station and this could act as a catalyst for station regeneration. These developments at Victoria are seen as the first stage of a much larger scheme that will create greater rail capacity over the whole of central Manchester. Details of the Victoria phase of the scheme are not yet finalised, partly due to the current uncertainty in the property market but the station works may provide an opportunity to implement some railway infrastructure works which complement these.

A study to examine options to increase the capacity of the 'Manchester Hub' started in CP3. Work to develop any significant recommended infrastructure schemes will commence in CP4, but with potential implementation in CP5.

We aim 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 (NSIP). This programme is being developed with industry partners, and is described in more detail in the future capability section.

As capacity to existing freight terminals on the route becomes more constrained, it is anticipated that longer and more trains will be required to accommodate demand, particularly in the coal and aggregate type traffic. This will drive the development and construction of new terminals to accommodate further growth.

Future train service proposals

Figure 15 indicates the forecast percentage change in tonnage in 2018.

Virgin Trains

The December 2008 timetable brought significant changes to services on the route. Virgin Trains have increased their Manchester – London trains to three an hour during the day, with one an hour via Wilmslow. The pattern of local services in the Manchester area has been altered to accommodate the result of these changes.

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, and strengthening of regional services.

London Midland

London Midlands' Liverpool – Birmingham services have increased to a two per hour pattern, following the December 2008 timetable change. Liverpool (excluding the Merseyrail network) requires 13 additional vehicles during the three hour morning peak.

Northern Rail

Northern Rail is the significant contributor to meeting the HLOS target of an additional 106 vehicle arrivals into Manchester and 13 additional vehicle arrivals into Liverpool. To meet this target Northern Rail will lengthen trains with the additional vehicles provided by DfT, consequently driving platform lengthening and infrastructure initiatives as appropriate. Some infrastructure interventions will allow the same units to make multiple arrivals in the peak, possibly requiring a timetable recast to facilitate the extra arrivals (e.g. Rochdale turnback). It is expected that as the additional vehicles are deployed throughout CP4, the timetable will be altered accordingly to make best use of them. The overall shape of Northern Rail's timetable in the North West area will be dynamic through the Control Period. The Yorkshire and Humber RUS (Y&H RUS) draft for consultation document recommends additional peak shuttles between Manchester to/from Rochdale/Todmorden.

TPE

The Y&H RUS draft for consultation also recommends (in the short-term for CP4) an additional all day hourly service between York/Leeds and Manchester with a timetable recast for all cross Pennine TPE services. Cross Pennine services will be accelerated to move towards the target journey time of 43 minutes from Leeds to Manchester via the Diggle route. Within CP4 we expect that more of TPE's services from Manchester Airport to Cumbria, will be operated with the Scotland allocated rolling stock. Timetable changes may further increase HLOS capacity by the use of reduced turnrounds and linespeed improvements.

ATW

ATW is proposing to extend its North Wales to Manchester service through to Manchester Airport from December 2009.

CrossCountry

Through rolling stock internal reconfigurations, service re-routeing and additional refurbished trains, CrossCountry have plans to increase passenger capacity by 35 percent by the end of their franchise.

Oldham loop services

The Oldham Loop is due to transfer to Metrolink in October 2009, with GMPTE having given notice that the line will close after operations in October 2009. This is a further catalyst for the recast of the north Manchester services. When the Oldham Loop transfers to Metrolink in October, the resulting paths available at Victoria may allow a further recast of the north Manchester service patterns, and potentially for the east Manchester services. We will work with stakeholders to develop these should the opportunity arise.

North West RUS recommendations

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 has been achieved by recasting the previous timetabled services and the addition of a second slow service in the December 2008 timetable. The RUS identified that there was a case to speed up the line and improve the layout at Bolton. These improvements were not funded in the ORR Final Determination, and in this control period will have to be addressed as enhancements on the back of renewals. An example of this is the recent improvements in speed at Lostock Junction where the linespeed has been raised from 60 to 75mph following the junction renewal. The NW RUS also identified that there was a case for a north bay platform at Stalybridge which will help facilitate Northern Rail to meet its HLOS targets.

The RUS and other analysis has identified the future drivers of freight demand in the North West are coal for electricity generation, aggregates and containerised traffic, with growth in most sectors but likely to be strongest in containerised traffic. Growth drivers include the development of services to fully utilise available paths into Trafford Park, then lengthening to deal with growth before other interventions are developed for 2014.

It is likely that we shall revisit the NW RUS during CP4 to refresh the outputs and align the time horizon with other RUSs being developed across the network (i.e. 30-year horizon).

Rolling stock strategy

Although not finalised, there are a number of other local service alterations that are likely as a result of the DfT rolling stock strategy. The increase in rolling stock will allow a recast of services in order to ease overcrowding. An example of this would be a new service from Piccadilly – Stalybridge, which negates the need for further 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.

Manchester Transport Innovation Fund (TIF)

The Association of Greater Manchester Authorities (AGMA) recent TIF bid results will mean that delivery of lengthening services on the corridors necessary to cater for demand, or running

Figure 16 Potential capability changes

Route section or location	Capability measure	Current value	Future value	Date
Dinting – Glossop – Hadfield	Speed	10 to 40 mph	10 to 50 mph	In CP4
Manchester – Bolton – Blackpool	Speed	75 mph	90 mph	In CP4
Stockport – Buxton	Speed	40 and 60 mph	60 and 75	In CP4
Edge Hill- Ordsall Lane	Speed	75 mph	90	In CP4
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

additional services on these lines will mean alternative sources of funding will be required and may mean longer delivery times.

There is a proposal for freight traffic to return to the Burn Naze branch at least in the short-term, which will involve excavation of sand deposits by a third party.

Future capability

Potential changes to capability are summarised in Figure 16.

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 TPE services to Liverpool crossing the throat on the flat, and services from the north east to the Airport. The resignalling 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. It is anticipated this will be evaluated by the Manchester Hub study. Within CP4 there may be an opportunity to increase the access and egress speed to the Longsight loops if NRDF funding is available. This will make it easier to path intermodal trains into Manchester.

Manchester Victoria – Although the layout of the station was remodelled relatively recently it was completed during a period of declining growth. 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. Additional capacity created at Salford Crescent will facilitate terminating trains from the east at Salford Crescent or beyond. This 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 allow terminating trains from the west, without the need to cross the main line (North West RUS option 5.3.5 – 1), and a similar capability will be created at Rochdale. Improving the interchange with Metrolink at Eccles was identified as a benefit in the North West RUS. 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, and gets very congested particularly in the peak hours. Both these factors discourage rail use and are a constraint on growth. Victoria currently accommodates nearly as many commuters per platform 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 planned for CP4.

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 problem. To address this, it is anticipated that lifts will be provided in CP4. Platform 1 will remain non-compliant in the short term, but 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, will improve the front of the station, in particular opening up the frontage area and replacing the existing Concourse House. This scheme, led by Liverpool City Council and Liverpool Vision, is being funded by English Partnerships (now Home and Communities Agency). The second improvement scheme is being funded by ourselves. We are carrying out improvement works on the internal area of the station and these works are expected to be completed in 2009.

Merseytravel has plans to improve other stations in their area, especially in terms of car parking, access and station facilities (e.g. Newton-le-Willows). There are a number of schemes at various stages of development – from initial ideas to station schemes already underway, and those just completed (e.g. St Helens Central revitalisation scheme). Some of the earlier schemes will be undertaken in CP4.

Salford Crescent – This station has an island platform and is situated 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 the 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 currently not long enough to handle 6 x 23m trains, and this means some trains do not 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 accommodating demand and provide the ability to terminate trains from the Calder Valley. The relocation of the station to the north of Windsor Bridge North junction supplies an increased station capacity but can be implemented without significant remodelling of the layout. However, the option of reconstruction on the existing site, albeit more expensive, is favoured by the stakeholders. A further stage for significant remodelling of the track layout to provide a step change in train capacity has been identified and has been passed to the Manchester Hub study team.

Stations

National Stations Improvement Programme (NSIP)

The Government is funding £150m during CP4 to support the modernisation of a range of stations. The criteria for a station being selected include footfall and current facilities. The NSIP has been established to ensure that this money is invested in the most effective way by leveraging in 3rd party funding. This programme is being developed within the industry through Local Delivery Groups (LDGs). On this route the stations that have been identified for NSIP funding are Bolton, Manchester Victoria and Oxford Road, Huyton, Altrincham, Rochdale, Accrington, Stalybridge and Warrington Central. Some of these schemes are a contribution to a larger scheme.

Access for All – schemes to improve access at stations are being developed at various locations in Route 20 including Cheadle Hulme, Manchester Oxford Road, and Marple.

Car parking

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

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 being progressed are in conjunction with key stakeholders and are at various stages of development. They

may be implemented in CP4 if proved to have positive business cases.

The AGMA TIF bid provided for a new station at Golborne, however due to the recent vote against the 'referendum' other sources of funding will potentially need to be found and delivery will be over a longer timescale if supported.

Platforms

Platform lengthening associated with longer trains is required at stations throughout Route 20. We are working with the TOCs and DfT to identify a programme of works that complements their rolling stock deployment strategy. This includes the Virgin Trains Class 390 Pendolino fleet vehicle extension programme which is due to be completed by 2010.

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 gets to Victoria. Whilst this scheme has a good business case it does not contribute greatly to HLOS targets and currently will not be progressed.

Figures 17 and 18 summarise the platform lengthening strategy.

Integrated Station Plans

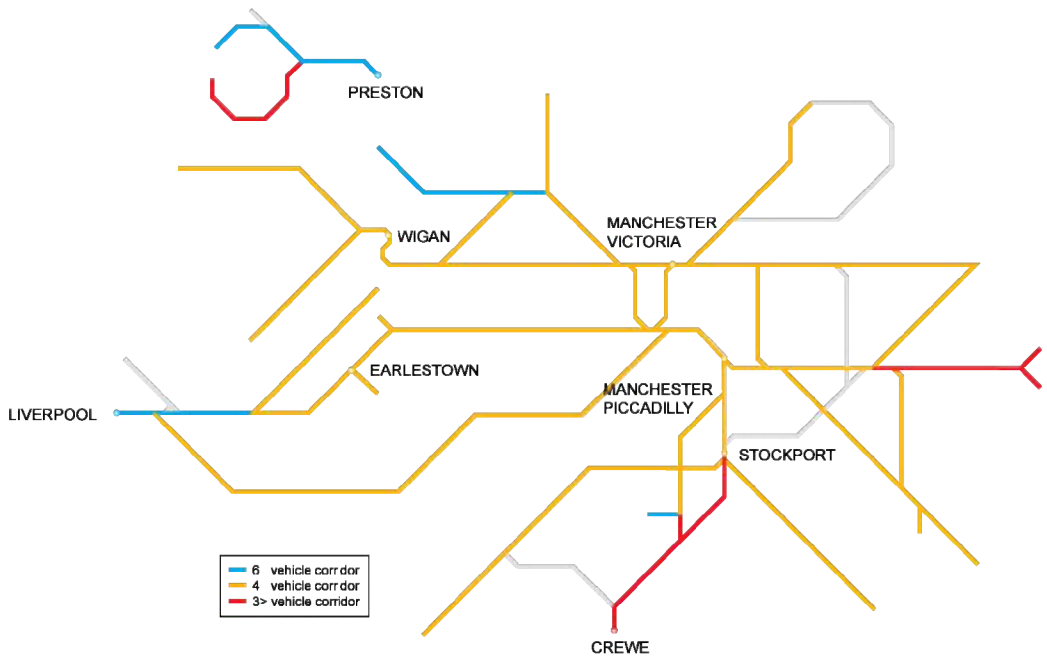
The Joint Stations Board has developed the Integrated Stations Planning initiative which seeks to improve the planning and delivery of work at stations and provide greater visibility of investment proposals to all industry stakeholders.
This cross industry approach will increase the alignment of investment plans and funding streams at stations; improve productivity and develop more efficient ways of working. These principles are supported by train operators, the Office of Rail Regulation, the Department for Transport and ourselves.

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 Rail, the DfT and ourselves are in discussions to identify the need for additional depot and stabling facilities to support this across Northern Rail's network. Northern Rail's view is that the existing heavy maintenance facilities at Newton Heath need to be supplemented with a further depot.

We are working with Northern Rail to develop a scheme for new facilities at Guide Bridge for the HLOS vehicles and with Northern Rail and GMPTE for a scheme for the additional vehicles. Significant infrastructure work is also being undertaken at Liverpool Edge Hill depot in preparation for the strengthening of the Pendolino fleet from its current

Figure 17 Platform Lengths



Platform lengthening - Corridor Overview - Route 20

Figure 18 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)

nine-cars to 11-cars capability. Further information is detailed in the Route 18, West Coast Main Line route plan.

Gauging and route availability

The Bootle Branch (via Edge Hill) was cleared for W10 in CP3, as there was a suitable route to it from the WCML. The alternative route to the WCML via Earlestown will be looked at during CP4.

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 gauge capability on the Ardwick – Guide Bridge – Stockport route to allow diversions away from Slade Lane Jn.

Linespeeds

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

Most significant amongst these are Guide Bridge Junction, completed in CP3, and others to be progressed in CP4 include: Liverpool – Manchester, Manchester – Diggle, and the Hadfield line. The Bolton corridor, Atherton, Calder Valley, and Buxton lines will continue to be considered for NRDF funding for enhancements on the back of renewals. In the case of the Calder Valley line, there are renewals planned for the end of CP4 which would facilitate a single large renewal/remodelling scheme between Thorpes Bridge and Rochdale that could include enhancements to speeds and headways. The TPE route enhancements project includes some of these linespeed 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 44 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). Raising speeds on the Hadfield line will help the same number of units to work a four trains per hour service when they currently can only work three trains per hour, and avoids platform lengthening that would otherwise be necessary.

Electrification

The business case for extending electrification is being assessed nationally in the Network RUS. North West schemes currently being considered for electrification include the Chat Moss, Huyton to Wigan, and Hunts Cross to Trafford Park.

There is a case for small extensions of electrification, based on improved stock utilisation

and platform lengthening avoided. An example of this is the extension of electrification from Guide Bridge to Stalybridge, which will be developed in CP5.

Level crossings

Level crossings are the number one safety risk on the railway. Our policy is to continue to reduce risks at all level crossings, and if possible, close them. As part of a safety and environment scheme, Rylands foot crossing north of Chorley is being replaced by a footbridge. This crossing has a history of fatalities and a considerable amount of misuse/route crime issues. In addition to the safety element of this scheme, there are added performance benefits which will be realised by removal of the crossing and will involve removal of an associated permanent speed restriction (PSR) in the area. Maintenance costs will be reduced by the reduction in fault rectification visits.

Future capacity

The changes to the timetable from December 2008 and the lengthening of local services to cope with passenger demand have been difficult to accommodate. In CP4 we are developing a strategy for optimising the use of, and developing additional, capacity around 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 north west 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 there. Identifying the need for further capacity improvement schemes on the Bolton corridor will fall into the remit of the Manchester Hub study.

The Yorkshire and Humber RUS draft for consultation document has identified the need to upgrade and lengthen Diggle loop (on the Stalybridge corridor between Manchester and Leeds). This will help alleviate peak and off-peak crowding as it will provide the ability for an all day additional hourly service between Manchester and Leeds by allowing fast trains to pass slower stopping services.

There are platform length constraints at Piccadilly train shed 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. More immediate issues remain to be rectified with the short length of the run round facility at Buxton (run round sidings) limiting trains to 46 SLU. Proposals exist to alter the infrastructure to remove this constraint. 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, depends largely 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. Some moderate lengthening of services to Trafford Park has already occurred. In the longer-term it could be that there is a case for access to Trafford Park from the west for which there are a number of options.

We are looking at various options to provide additional capacity on the network for freight services conveying stone products from the rail served quarries of north Derbyshire to terminals in the Manchester area and elsewhere. Such a project may also reduce service congestion in the Peak Forest area and on the Hope Valley route, through re-routeing of freight services. Alternatively, the capacity freed up may be used to provide for further freight traffic increases. A possible output is the provision of direct access between Buxton Line and both the Dowlow branch and the Great Rocks line, through provision of a suitably positioned trailing crossover on the Buxton line and a suitable connection from the Great Rocks line. It is anticipated that if this were pursued (subject to business case) there would need to be an upgrading of track condition on the Buxton line to handle the additional traffic and provide for linespeeds increases. The primary benefit of the project will be the ability to convey additional stone traffic, by rail, from north Derbyshire, primarily to the Greater Manchester area.

Figure 19 Forecast MAA

	2009/10	2010/11	2011/12	2012/13	2013/14
London Midland	87.8%	89.1%	89.9%	90.5%	90.6%
Arriva Trains Wales	92.7%	92.9%	93.2%	93.4%	93.5%
Northern Rail	90.1%	90.7%	91.2%	91.7%	91.8%
CrossCountry	90.0%	90.2%	90.6%	90.9%	91.3%
Virgin Trains	85.0%	87.8%	90.3%	90.6%	90.9%
Transpennine Express	91.7%	92.2%	93.2%	93.8%	94.0%
Merseyrail	94.8%	94.9%	95.1%	95.2%	95.2%

Integrated Train Planning System

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 19 sets out the planned PPM MAA for each train operator for CP4.

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 89.4 percent PPM MAA. 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 Northern Rail 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;
- 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 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 manage the impact of weather and drive down cable theft; and
- achieving 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 linespeeds improvements.

TransPennine Express (TPE)

TPE 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 90.2 percent PPM MAA. 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;
- improvements from the remodelling of key junctions on the route;
- management of freight services;
- real ability to manage the impact of the weather and drive down cable theft; and
- evaluation of linespeeds and route enhancements in the North West, between York and Northallerton and across the Pennines.

TPE and ourselves have been developing a full five year performance plan around these issues. At present the forecast is that TPE will achieve a PPM of 94.0 percent by the end of 2013/14.

CrossCountry

As a long distance operator CrossCountry faces significant performance challenges. Additional capacity in the form of High Speed Trains (HSTs) as well as additional seating on Class 220/221 and Class 170s has been introduced in the period between May 2008 and summer 2009.

Performance Levels

PPM MAA for the remapped franchise at the end of period 10 2008/09 is 89.8 percent. Franchise plans developed during bidding based on TOC on self improvements have a PPM figure of 91.3 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.

Significant lateness

We are nationally developing plans for a 25 percent reduction in trains over 30 minutes late over CP4. These plans include continued work on flooding prevention and joint initiatives being developed between ourselves 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.

The key performance issues and opportunities for CrossCountry on this route have been identified as:

- improved asset reliability through the use of maintenance benchmarking and the full installation and deployment of Remote Condition Monitoring;
- efficient Engineering Access and possession planning Improvements;
- enhanced management of the network;
- weather proofing the network through enhanced drainage and upgrade of climate control systems for signalling equipment;
- enhanced usage of on train monitoring recording equipment;
- reduction in the impact of trespass, vandalism and fatalities and;
- quicker incident response.

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 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 sections for these train operators can be found in the following route plans :

Figure 20 Train Operators

Arriva Train Wales	Routes 14, 15 and 22
London Midland	Routes 17 and 18
East Midlands Trains	Routes 19
Merseyrail	Route 21
Virgin Trains	Route 18

Network availability

Access for this route is complicated as many of the lines form part of the integrated possessions strategy for the WCML and the cross Pennine routes. Therefore planning access for this route 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 co-ordinated 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.

Renewals work on Hope Valley took place in an efficient blockade during Christmas 2008, in the 2009 timetable year plan. Further work is planned in a shorter blockade during Christmas 2009 (in 2010 timetable year), and this has reduced the number of all-day Sunday possessions.

We are planning some renewals work at May Bank holiday in a significant possession : 76 hour blocked between Eccles and Earlestown on Chat Moss lines, for renewal of Parkside S&C, and component renewal of UB119 Bridgewater canal bridge.

We have successfully negotiated efficient blockade access during the 2009 timetable year. This enables us to carry out high volumes of track renewals, whilst making use of teams and resources in midweek shifts, which would otherwise see them not being utilised to best advantage. Examples of this are Windsor Bridge to Crow Nest Junction, blocked for six days for plain line track renewals in the Atherton area, and structures renewals at various locations; Wigan to Southport blocked for nine days in February for plain line track renewals and structures renewals; and Buxton to Hazel Grove blocked for nine days for plain line track renewals and structures renewals.

CrossCountry, like other operators has aspirations for a Seven Day Railway. Due to 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 grows. 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 CP4 is to develop the scheme (or schemes) required for implementation in CP5 to provide a co-ordinated output (the Manchester Hub 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 issue caused by train lengthening is not expected to become critical until CP5. Methods of dealing with this issue include:

- diversion of 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;
- making relatively minor track and signalling alterations to platforms 1 – 4 to allow 12 x 23m vehicles to occupy them;
- remodelling Piccadilly and its approaches, including providing longer and more platforms – probably in CP6 or later.

When there are a significant number of trains filling the full length of the platforms, it will be necessary 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 by reoccupation of Piccadilly platforms 13 and 14. One option is to create two new through platforms (15 and 16). This would allow alternate use of either side of island platforms, moving the capacity constraint from Piccadilly to Castlefield Junction. Capacity is also lost by the Liverpool – Oxford Road local trains having to make crossing moves when terminating. The ability to terminate these services in a centre bay or by running them through Piccadilly to another destination, would also improve utilisation of the corridor. After creating a new platform 15 and 16, there may be a case to replace platforms13 and14 with new ones in a similar style. 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 or later.

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 cross Pennine services to Liverpool and the TPE services to the airport, which have to cross the throat on the flat. One option is to remove 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. This would remove the need to cross on the flat, e.g. by means of a chord at Ordsall Lane and diverting traffic through Victoria. Capacity could be increased in this area by the long-term aspiration to lengthen freight trains to 775 metre lengths. All these options will be evaluated as part of the Manchester Hub Study. It is planned to begin implementation of the preferred options in CP5 or later.

Capacity is constrained at Slade Lane due to six tracks merging into four, and the configuration and direction of the pairing. The resignalling of Piccadilly will provide a potential opportunity to extend the goods loops to Slade Lane and Ardwick to create a six-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 operating services through Victoria, and terminating at the new turnback facilities further out. In the long term the layout will require remodelling and additional

bay platforms will be needed. It is likely that these works will be required beyond CP4.

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. The station and throat will need to be remodelled in the longer term, creating more platform faces and better parallel moves. This will most likely occur in CP5, ahead of any signalling renewals.

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. Should tram-train and on-street running been successfully trialled and shown to be a potential solution, it could be that this option 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 all with the same frequency. Currently the infrastructure does not accommodate such a pattern of timetable, but most corridors could be altered, relatively easily, to allow such a pattern. This would enable effective deployment of rolling stock that matches capacity requirements, preventing the need to convey additional capacity over long distances where it is not needed.

Bolton – Blackburn

There is not currently a business case for increasing the capacity on the Bolton – Blackburn corridor. However local authorities are revisiting the economics of this. As demand increases it may be more economic to increase service frequency rather than to just lengthening trains, beyond a certain length. It is expected that within CP4 we will develop an opinion of what is required, with a view to seeking CP5 funding.

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 capability for trains to be overtaken. This may be achieved by the construction 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 has meant that 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 greatly increased traffic. This will allow for both future rail growth and the potential for new journey opportunities. However, this is not expected to be required before CP6 or later.

Freight: aggregates

Peak forest

Future growth of aggregates traffic will be constrained by the ability to operate trains along the Hope Valley. In the short term schemes are being examined which would allow more trains to operate in the Great Rocks area or would allow slightly longer trains to operate out of Dowlow/Hindlow. However, if demand continues as currently predicted, capacity will need to be increased on the Hope Valley or an alternative diversionary route created. The schemes already identified in this plan look to the Buxton Line as a potential alternative route. However, all the traffic currently routed that way has to go through Stockport, which has its own capacity restrictions. A chord linking Buxton to Northwich would give access to the WCML if there were sufficient demand to justify it. Loops and other capacity improvement schemes on the Hope Valley line itself are considered in the Route 11 plan.

Liverpool docks

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 run-round, 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 of 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 be required, any 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 a 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 four tracking and gauge clearance of alternative routes.

Gauge Clearance

The Strategic Freight Network outputs have also identified a need to gauge clear the Diggle route to W10 in the long term.

Infrastructure investment in CP4

Figure 21 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓐ Long Line Public Address Renewals: Various locations	Renewal of long line PA on the Blackpool to Preston line and the Styal line	Telecoms Renewals	Network Rail	5 4
2009/10	Ⓑ Third party station improvement /redevelopment schemes	Enhancements to station facilities: Stalybridge station Hattersley station Blackpool North station (Talbot Road development) Salford Central station Manchester Victoria commercial development (Fishdock area)	Improvements to station facilities	Third party	Various
2009/10	Ⓒ 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
2009/10	Ⓓ Car park extension schemes	Extension of car parking at Lostock, Broad Green, Bolton, Cheadle Hulme, Guide Bridge and Wilmslow (West Coast car park scheme)	Improved car parking facilities	Third party/TOC	Various
2009/10	Ⓔ Structures Renewals : Underbridge strengthening works	Strengthening work and repairs to: • Carr Mill Viaduct (between Garswood and St Helens) • Buxton Road bridge (between Buxton and Edgeley Jn) • Mottram Viaduct (between Broadbottom and Dinting)	Structures Renewals	Network Rail	 6 3 3
2009/10	Ⓕ 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
2009/10	Ⓖ Re-opening of Burn Naze branch	Re-opening of branch line near Preston to facilitate construction of new power station.	Re-opening of branch line to freight traffic.	Third party	3
2009/10	Ⓗ Signalling Renewal : Rainford	Signalling renewal at Rainford	Signalling Renewal	Network Rail	4
2010/11	Ⓘ Buildings Renewal : Stations	Rebuild/reconstruct platforms 1 and 2 and footbridge refurbishment at Poulton-Le-Fylde	Buildings Renewal	Network Rail	2

Figure 21 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2010/11	(J) Buildings Renewal : Stations	Reconstruction of platforms 4 and 5 to include resurfacing, tactiles and new copers at Earlestown.	Buildings Renewal	Network Rail	1
		Platform resurfacing, riser wall works and train tanking system renewal at Liverpool Lime Street.			
2010/11	(K) Signalling Renewal : Prescot, Huyton and St Helens	Signalling renewal at Prescot, Huyton and St Helens	Signalling Renewal	Network Rail	1
2011/12	(L) Metrolink Phase 3	Extension of metro system onto the Oldham Loop. Scheme will look at aligning timing of Rochdale and potentially other resignalling projects at the same time.	Transfer of ownership to PTE	Third party	4
					1
2011/12	(M) Buildings Renewal : Stations	Reconstruction of platforms at Trafford Park station	Buildings renewal	Network Rail	3
2009 - 2011	(N) Potential new stations:	Potential new stations at	New asset : increased capacity	Third party	
		Chorley Buckshaw Village			4
		Carr Mil			1
		Chapelford			1
2009 – 2012	(O) E&P Renewal	OLE structure painting	E&P renewal	Network Rail	3
		Main transformer renewal			
		Refurbish campaign changes			
		25Kv switchgear renewal			
2011/12	(P) Chorley Rylands foot crossing	Removal of foot crossing with footbridge	Safety : removal of crossing	Network Rail (Safety & Environment)	3
2008 - 2012	(Q) DDA improvements as part of the Access for All national programme at:	Provision of step-free access including :	Improved station facilities	DfT	
	Hazel Grove	lifts to existing footbridge			7
	Warrington Central	two new lifts			5
	Cheadle Hulme	a new footbridge with lifts			5
	Manchester Oxford Road	reopening existing lifts and subway			3
	Marple	new footbridge with lifts			3

Figure 21 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 - 2012	(R) NSIP : National Stations Improvement Project	Planned improvements to stations at Bolton, Manchester Oxford Road, Manchester Victoria, Huyton, Altrincham, Rochdale, Accrington, Stalybridge and Warrington Central	Improved station facilities	Network Rail	1-4
2011 - 2013	(S) Manchester South : Telecoms Renewal	Transmission renewal at various sites in the Manchester South area	Telecoms Renewal	Network Rail	1
2012/13	(T) Preston – Blackpool North CIS	Renewal of customer information screens along the Preston to Blackpool line	Telecoms Renewal	Network Rail	1
2013/14	(U) Liverpool Lime Street : Public Address / Voice Address Renewal	Renewal of PA/VA system at Liverpool Lime Street	Telecoms Renewal	Network Rail	1
2009 - 2014	(V) Freight terminals on the route	*Provision of new freight terminals at:* Port Salford Parkside *Expansion of existing freight terminal* at Ditton (Route 18)	New/expansion of freight terminal facilities on the route	Third party	 0 4 0
2009 – 2014	(W) Earlestown to Seaforth W10 Clearance	Gauge clear the route between the WCML and Seaforth – alternative route	W10 clearance Edge Hill to Earlestown	PTIF	3
2009 – 2014	(X) North Cross Pennine's Upgrade phase 1 cross-route project – also see Route 10	Liverpool - Manchester - Leeds linespeeds and capacity increase	Increased capacity and improved performance and journey times	Periodic Review 2008	3
2009 – 2014	(Y) Salford Crescent	Redevelop and possibly relocate Salford Crescent with more and longer platforms	Improved station facilities, access and capacity	Periodic Review 2008	1
2009 – 2014	(Z) Platform lengthening	Increase in train lengths and associated platforms to accommodate peak passenger growth and Class 390 Pendolino vehicle introduction	Longer trains allowing greater peak passenger numbers	Periodic Review 2008	1
2009 – 2019	(AA) Manchester Hub Study	Enhance the capacity of the rail network in central Manchester and improve regional services	Improved capacity and connectivity of services in the Manchester area	Periodic Review 2008	1

Figure 21 Infrastructure investment in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 – 2014	(AB) Route 20 capacity improvements Hadfield, Stalybridge, Rochdale, Buxton and Manchester Victoria	• Speed up the Hadfield line including track and signalling improvements, and a new turnback facility with associated OHLE works. • Provision of a bay platform at Stalybridge reducing the need to cross the main line (aligns with track and signalling works planned in 2012/13). • Creation of a Manchester facing bay or additional through platform at Rochdale (aligns with track and signalling renewal planned in 2011). • Create facing move that allows access to both Buxton platforms without a shunt move. • Potential other speed increases and additional turnback facilities as the rolling stock strategy emerges.	Linespeeds and 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	1
	(AC) Guide Bridge – Stalybridge electrification	Electrify from Guide Bridge to Stalybridge inclusive, including the existing bay platform.	Allow electric units to work Piccadilly – Stalybridge services	*Scheme under review (potentially CP5)*	
	(AD) Buxton Line Capacity and Linespeeds improvements	Remodel layout at Buxton which will redirect some freight traffic from the Hope Valley line. Improve linespeeds and reduce PSRs in line with the North West RUS, with a likely focus on freight speeds.	Increase linespeeds, capacity and operational flexibility.	*Scheme under review (potentially CP5)*	
	(AE) Bolton Corridor Linespeeds and capacity Improvement	Removal of PSRs, raise linespeeds 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.		
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 various locations	Periodic Review 2008	1
2009 – 2014	(AG) Track Renewal Programme	S&C renewal planned at various locations across the route	Track Renewal	Network Rail Discretionary Fund	3

Figure 21 Infrastructure investment in CP4					
Implementation date	**Project**	**Project description**	**Output change**	**Funding**	**GRIP stage**
2009 - 2014	(AH) CLC up loop	Create loop on the up line on the CLC – possibly at Warrington or at Glazebrook	Improved performance	Network Rail Discretionary Fund	0

NRDF candidate schemes in CP4

Figure 22 Candidate NRDF schemes in CP4					
Implementation date	**Project**	**Project description**	**Output change**	**Funding**	**GRIP stage**
2009 – 2014	(AI) 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	0
2009 – 2014	(AJ) North West RUS –clearance for RA10 and gauge improvements in east Manchester	RA10 clearance and gauge improvements on targeted routes in east Manchester	Increased freight capability	Network Rail Discretionary Fund	0
2009 – 2014	(AK) Linespeed improvement project – Salford to Blackpool	Linespeed improvements along the Salford to Blackpool line	Reduced journey times	Network Rail Discretionary Fund	0

Renewals activity

Figure 23 shows the estimated renewals 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 23 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	27	48	26	37	30	168
Signalling	7	8	15	11	3	45
Civils	20	15	16	16	15	82
Operational property	14	11	10	11	9	55
Electrification	2	2	2	2	2	10
Telecoms	3	2	1	2	1	9
Plant and machinery	0	0	0	0	1	2
Total	**72**	**87**	**71**	**79**	**61**	**371**
Renewals volumes						
Track						
Rail (km)	10					
Sleeper (km)	17					
Ballast (km)	19					
S&C (equivalent units)	12					
Signalling						
SEUs (conventional)	0	0	1	95	0	96
SEUs (ERTMS)	0	0	0	0	0	0
Level crossings (no.)	0	0	0	0	0	0

Appendix

Figure 24 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	110 (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)
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)

Figure 24 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
20.13	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)
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	CMPI CMP2 BEJ	Secondary	DFT	No	W6	7-9	40-75	25kv	TCB	3	2

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

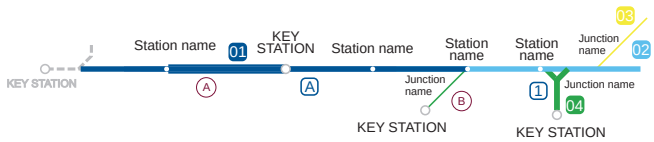
Other issues on the route
1 Oldham Loop Metrolink issues
2 Chorley Buckshaw Village – siting of new station
3 Fylde Coast tram proposals
4 GMPTE tram proposals
5 Manchester Victoria – former Manchester Exchange development
6 Potential intermodal freight terminals

Note

This Route Plan forms part of the 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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