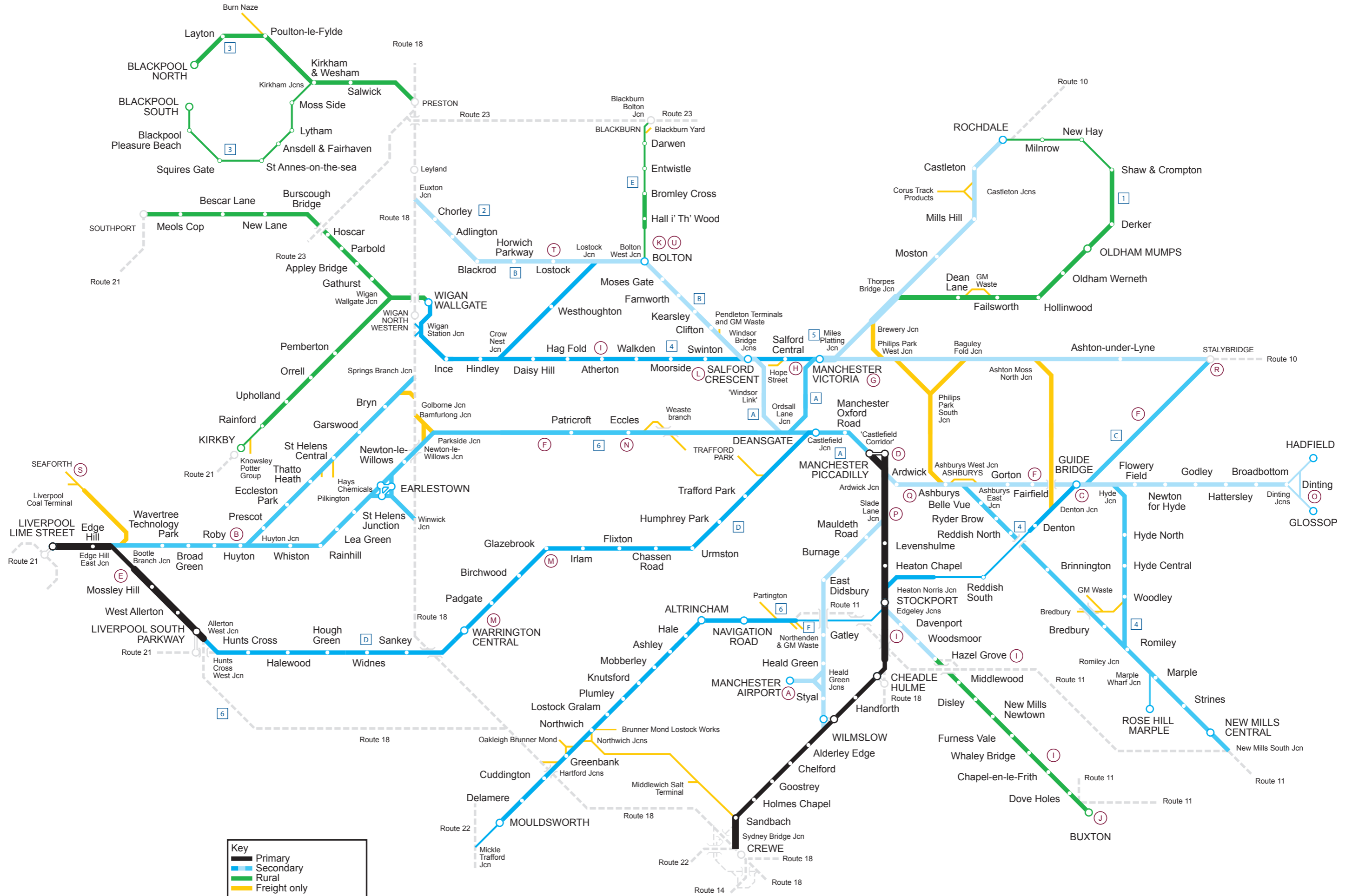


Route 20 North West Urban



Key

- Primary
- Secondary
- Rural
- Freight only

Route 20 North West Urban

Section 1: Today's railway

Route context

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

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

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

Today's route

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

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

Current passenger and freight demand

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

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

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

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

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

Current services

The train operating companies that provide services on the route are Northern Rail, TransPennine Express, Virgin West Coast, Virgin Cross Country (to be replaced in November by Arriva CrossCountry), Central Trains (to be replaced in November by London Midland and East Midlands Trains), Arriva Trains Wales, Merseyrail, English, Welsh and Scottish Railway, Freightliner Ltd, Freightliner Heavy Haul Ltd and DRS.

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

The majority of services on the route are hourly (or better). There are a number of services that

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

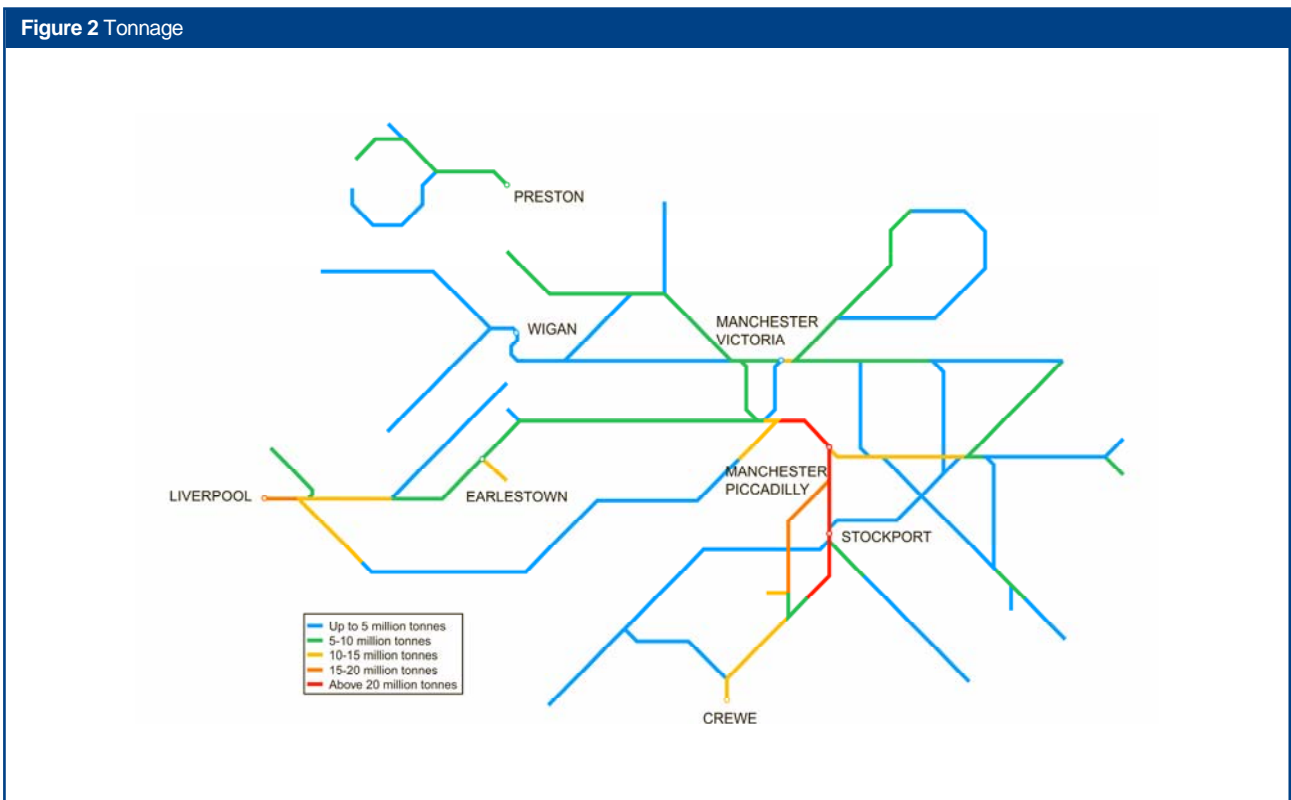
There are a number of significant freight flows: stone from the Peak District, which either traverses the route or has destinations within it, such as Northwich, Ashburys and Hope St in Salford; coal from Liverpool Bulk Terminal (LBT) which is the primary source of imported coal for Fiddlers Ferry Power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

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

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

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

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



Traffic volumes are summarised in Figure 3.

Figure 3 Current use

	Passenger	Freight	Total
Train km per year (millions)	21	1	22
Train tonne km per year (millions)	2,473	1,043	3,515

Current infrastructure capability

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

Figure 4 Line speed

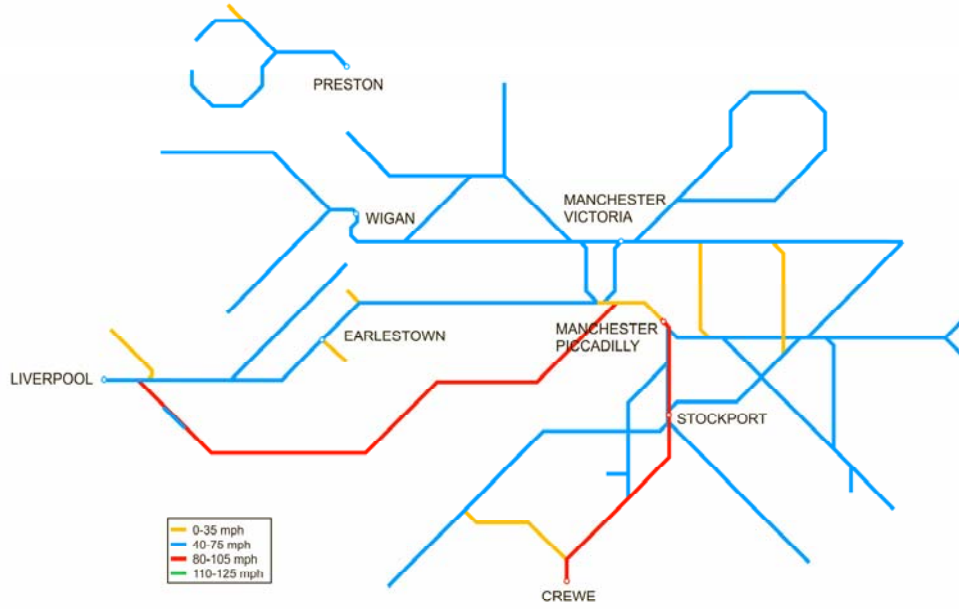


Figure 5 Electrification

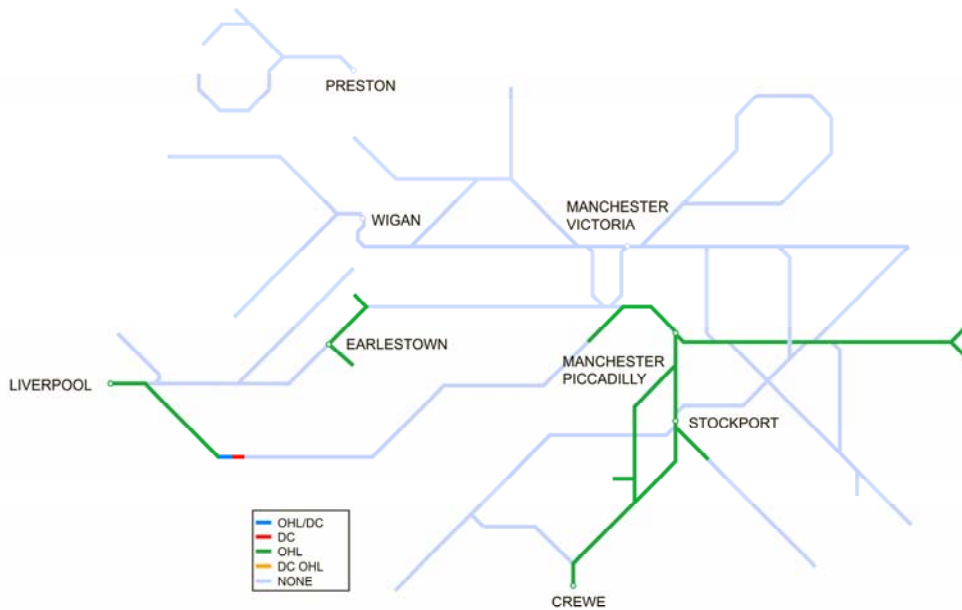


Figure 6 Route availability

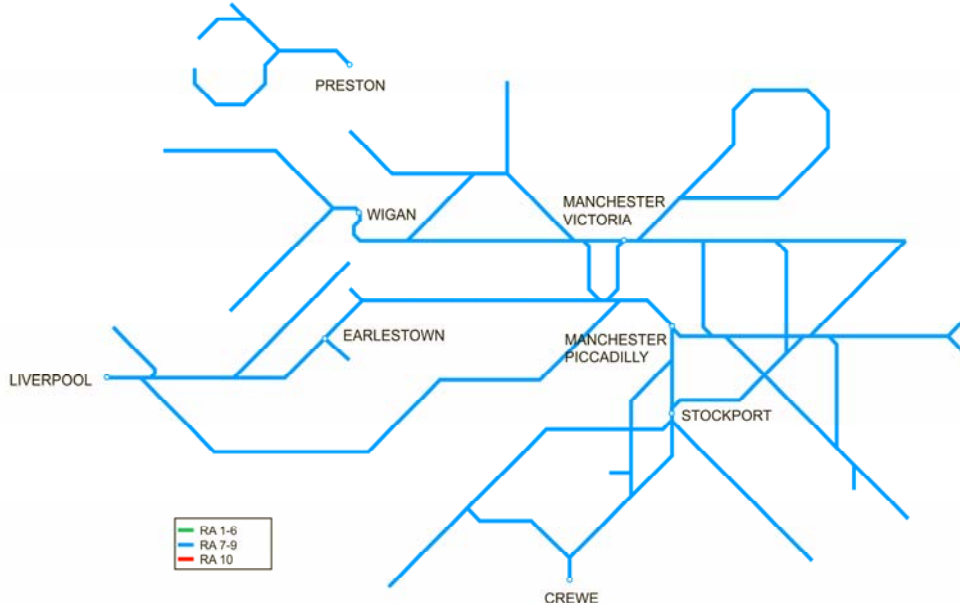


Figure 7 Gauge

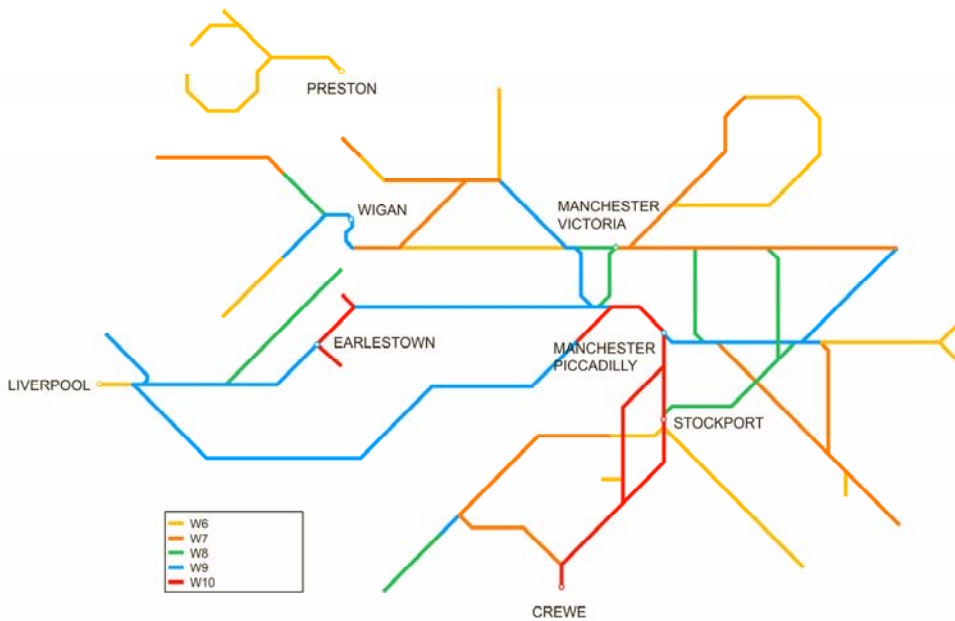


Figure 8 Current train service level (peak trains per hour)

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

Current capacity

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

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

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

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

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

Figure 9 Current PPM MAA (2007/08)

TOC	MMA	As at period
Arriva Trains Wales	90.5%	6
Central (London Midland from November 2007)	85.7%	6
Northern Rail	87.7%	6
Transpennine Express	90.5%	6
Virgin Cross Country	84.0%	6
Virgin West Coast	86.2%	6
Merseyrail	93.5%	6

Current performance

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

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

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

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

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

The track renewals programme is designed to improve performance by targeting the main TSRs on this route and by working towards renewing jointed track with CWR. In particular, temporary speed restrictions on the Buxton line have been a

concern for some time, both for their effect on performance on the routes and also for the delay imported into the Manchester urban area as a result of late presentation of through services such as Buxton – Blackpool. We have recently carried out significant renewals on the route to remove the majority of the speed restrictions. This is 18 months earlier than originally planned.

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

Section 2: Tomorrow's railway

HLOS output requirements

Figure 10 Total demand to be accommodated by Strategic Route

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

Figure 11 Total demand to be accommodated by Strategic Route

London Terminals	Peak three hours			High- peak hours		
	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)	Forecast demand in 2008/09	Extra demand to be met by 2013/14	Maximum average load factor at end CP4 (%)
Manchester	22,100	4,100	45	10,700	2,200	49
Other Urban Areas including Liverpool , excluding Merseyrail	27,700	3600	41	12300	2,000	46

Future demand

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

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

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

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

Section 3: Proposed strategy

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

Figure 12 Summary of proposed strategy milestones

Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2007	Timetable recast	-	TPE take over operation of Manchester – Scotland services – change of frequencies and methods of operation
2008	Timetable recast	-	London services from Manchester become three per hour instead of two, and local service changes
2009-2014	Train lengthening	Platform lengthening	Accommodating existing and future peak passenger demand
2009-2014	Calder Valley long distance trains also serve Salford Central and Salford Crescent	Rebuild Salford Crescent station	Increased capacity, ability to handle longer trains at a significant destination and interchange station. Removes a bottleneck to expanding service provision in NW Manchester
2009-2014	Revised services on Leeds – Manchester – Liverpool route	Programme of linespeed and capacity enhancement schemes	Increased capacity and improved journey times
2007-2009	Additional service Manchester - Preston	Journey time reduction Salford – Preston, potentially new platforms at Bolton and / Lostock	Improved journey time passenger growth and increased capacity. Allows a better pattern of services
2009-2012	Manchester Victoria refurbishment	Improved passenger facilities at Manchester Victoria, improved layout of station	Improved environment for passengers, to be delivered in conjunction with Fish Dock property redevelopment. Increased capacity at Victoria
2014	Central Manchester capacity enhancement	Single option for capacity enhancement of the Manchester ‘Hub’ developed ready for CP5 implementation	Increased capacity

Strategic direction

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

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

The biggest strategic challenge is the issue of passenger demand exceeding supply, especially in the peak. The North West RUS identified that approximately 50 additional vehicles would be required to strengthen peak hour services on routes into Manchester and Liverpool, and further vehicles may be justified by the end of the RUS period. This element of the RUS has broadly been captured in the HLOS and we are discussing with the PTEs and TOCs how best to deploy the additional units and lengthen the appropriate platforms. In addition, we expect the 2008 timetable to increase the number of London – Manchester trains to 3 per hour, and that these trains will be lengthened to 11 cars at a later date. It is likely that the new CrossCountry franchise will replace some of the current Voyagers services with HST operation.

It is anticipated that the Oldham Loop will transfer to Metrolink operation within the foreseeable future. This is likely to free up paths at Manchester Victoria, and create opportunities for services to work through from new destinations. This will create the opportunity for a recast of the Calder Valley services. At some point in the interim the heavy rail service will operate independently of the rest of the network.

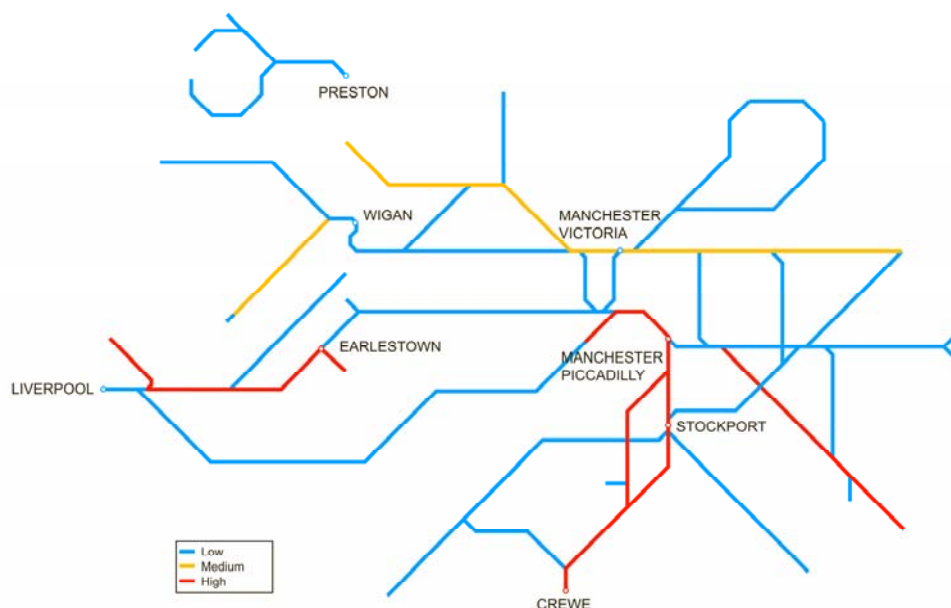
Manchester Victoria station is in need of upgrading to a standard similar to that of Manchester Piccadilly. This is in order to accommodate the anticipated growth, and also to make the two

stations more interchangeable so that significant timetable recasts become more feasible. There is a property scheme being developed for the Fish Dock at the front of the station and this will act as a catalyst for station regeneration. These developments at Victoria are seen as the first stage of a much larger scheme to create greater rail capacity over the whole of central Manchester. Details of the Victoria phase of the scheme are not yet finalised, but the station works may provide an opportunity to implement some railway infrastructure works which complement these.

A feasibility study to examine options to increase the capacity of the Manchester 'Hub' will be completed in CP3. Assuming a business case can be proven, work on any recommended infrastructure schemes could commence in CP4.

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

Figure 13 Tonnage growth



Future train service proposals

When the December 2008 timetable takes effect, it will introduce significant changes to services on the route. The Manchester – London trains will increase from two an hour to three an hour during the day, with one an hour via Wilmslow. It is anticipated that the Liverpool – Birmingham trains will change to a two per hour pattern. Cross Country services between Manchester and Scotland will effectively be withdrawn in December 2007. In its place, the existing TPE service between Manchester Airport and Barrow / Windermere will have been extended to Scotland in some hours, and, as a result, some of Northern Rail's services in the Manchester area have been re-timed as required. Although not finalised, there are a number of other local service changes that are likely. These include the splitting of the Buxton /Blackpool service.

When the Oldham Loop transfers to Metrolink, the resulting paths available at Victoria may be the catalyst for a complete recast of the North Manchester service patterns, and also potentially for the east Manchester services. We will work with stakeholders to develop these should the opportunity arise. Such a recast might then lead to a need for low cost infrastructure interventions to facilitate the working of the recast timetable. These could involve a turnback signal at Wigan, and turnback facilities at Rochdale and or Todmorden.

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

Options for a recast of the Calder Valley services are being developed as this will be required when the local services no longer run on the Oldham Loop from Rochdale.

In order to meet the HLOS targets for the morning three hour peak into Manchester, there is a need for around 106 additional 'vehicle arrivals'. These will be provided by a strengthened Pendolino fleet (to provide 27 additional vehicle appearances in the three hour peak before the end of CP3 and a further 12 during CP4), and strengthening of TPE and regional services to provide an additional 11 and 56 vehicle appearances respectively. Liverpool (excluding the Merseyrail network) requires about 13 additional vehicle appearances during the three hour morning peak.

Figure 13 indicates the forecast percentage change in tonnage in 2016.

Figure 14 Potential capability changes

Route section or location	Capability measure	Current value	Future value	Date
Seaforth to Edge Hill	Gauge	W9	W10	2010
Edge Hill to Earlestown	Gauge	W9	W10	Not yet known
Manchester – Bolton – Blackpool	Speed	75mph	90mph	2009/10
Stockport – Buxton	Speed	40 and 60 mph	60 and 75	2009/10
Edge Hill- Ordsall Lane	Speed	75 mph	90	2009/11
Guide Bridge West Jn	Speed	15 mph	25 mph +	2008
Dinting – Glossop – Hadfield	Speed	10 to 40 mph	10 to 60 mph	2008/09
New Mills South Jn – Ashburys	Axle Weight	RA8	RA10	Not yet known
Ashburys – Guide Bridge – Stockport	Gauge	W8	W9 & W10	Not yet known
Olive Mount Chord	Reinstated railway	none	2 track	2008
Manchester Airport 3rd Platform	New railway	none	1 track	2008/09
Salford Crescent 3rd Platform	New platform face	none	1 platform	2009/10
Edge Hill to Castlefield Jn, to Springs Branch Jn, and/or to Trafford Park	Electrification	none	25kV OHLE	Not yet known

Future capability

Potential changes to capability are summarised in Figure 14.

Gauging

The Bootle Branch will be cleared for W10 in CP3 as will suitable routes to it from the WCML.

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

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

Line speed

The North West RUS and the White Paper identified that there are a series of locations on the route where there is an economic case to raise the line speed and deliver benefits in terms of performance and improved journey times between regional centres. Most significant amongst these are Guide Bridge junction, to be completed in CP3, and others to be progressed in CP4: Blackpool – Manchester, Liverpool – Manchester, Manchester – Diggle, the Hadfield line and Stockport – Buxton. The TPE route enhancements project includes these line speed improvements and we are working closely with key stakeholders to deliver this package of work. The plan is to meet or exceed the White Paper target of enabling a non-stop journey time of 40 minutes (currently 43 minutes) Liverpool to Manchester Oxford Road via Chat Moss, and a

43 minute journey time from Manchester Piccadilly to Leeds via Diggle (currently 54 minutes). This latter service group crosses into strategic route 10 (at Leeds) on London North Eastern Route.

Electrification

The business case for extending electrification is being assessed by regional partners. The White Paper points out that with alternate green sources of power supply for trains being considered, evaluation of electrification schemes cannot be based on benefits being accrued beyond 15 years. It is unlikely that schemes currently being considered such as the Chat Moss, Huyton to Wigan, and Hunts Cross to Trafford Park, will be progressed in the near future.

Stations

Manchester Piccadilly - Capacity on the Castlefield Corridor is currently constrained by re-occupation of Piccadilly platforms 13 and 14. Improving passenger flows on these platforms by improving circulation (North West RUS option 5.3.2 – 7) to ensure that the planned 2 minute dwell time is met, is a short term solution. This scheme will be completed in early CP4.

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

Capacity on the southern approaches is constrained now by the layout and pattern of services. A significant portion of capacity is utilised by the Transpennine services to Liverpool crossing the throat on the flat, and services from the north east to the Airport. The re-signalling of the area is

an opportune time to take account of these moves and improve the situation, but this will not take place in CP4. Within CP4 there will be an opportunity to increase the access and egress speed to the Longsight loops, and the speed of the loops themselves. This will make it easier to path inter-modal trains into Manchester.

Manchester Victoria - Although the layout of the station was remodelled relatively recently it was completed against a mindset of a declining railway and cost minimisation. The station only has 4 through platforms and 2 east facing bays, and has a layout with single ladders at both ends. This layout is not particularly flexible, especially when trains are accessing the bays. Given the existing layout, capacity at Victoria is maximised by terminating as few trains at the station as possible. Creating alternative places to terminate trains once they have passed through Victoria would facilitate this. Bay platforms will be created at Salford Crescent and Salford Central to facilitate terminating trains from the east. These will 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 to facilitate terminating trains from the west, and this bay will be independent of the main line (North West RUS option 5.3.5 - 1). In order to ensure that Victoria's ability of to handle traffic does not become a constraint on the north Manchester network, the creation of these bays should be implemented in CP4. These bays will also allow the station to cope with disruption associated with improvements to the station environment (see below). Improving the interchange with Metrolink at Eccles was identified as a benefit in the North West RUS. Doing this would also reduce the number of passengers disembarking at Victoria, when their ultimate destination is Salford Quays.

The station environment at Victoria is poor when compared with the rest of the network and particularly Manchester Piccadilly. As a result, this discourages rail use and will be a constraint on growth. This issue must be addressed as Victoria currently handles nearly as many commuters as Piccadilly, and the north-side of Manchester is expected to experience more growth than the south. The aspiration is to create a welcoming station environment comparable to that of Manchester Piccadilly. Improvements to the station environment are best carried out in conjunction with the property development planned for the Fish Dock area of the station which is due to begin in the middle of CP4. Whilst additional bay platforms are

not a necessity for CP4, it may be that the opportunity provided by the redevelopment makes this the most opportune time to provide for future capacity requirements.

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

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

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

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

with passenger demand, this constraint will become more acute.

The solution is to create a new station with extra, wider platforms long enough to accommodate the forecast train length. These new platforms are key to meeting demand and need to be positioned in such a way that they help reduce the overlaps problem and provide the ability to terminate trains from the Calder Valley. There are several options for this, the greatest capacity being provided by those which significantly remodel the layout. The relocation of the station to the north of Windsor Bridge North junction supplies an increased capacity but can be implemented without significant remodelling of the layout. However, other options are being considered.

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 will be built in CP4. There are a number of other

aspirations for new stations on the route such as Gamesley, Chapelford, Headbolt Lane and Carr Mill. These proposals are at a very early stage of development, and may be implemented in CP4 if taken forward.

Platforms

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

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

Figure 15 Service Groups to be lengthened

Atherton Corridor to accommodate 5 x 23m vehicles at:-

Appley Bridge (Up and Dn), Atherton (Up and Dn), Daisy Hill (Up and Dn), Hag Fold (Up and Dn), Hindley (Up and Dn), Meols Cop (Up and Dn), Moorside (Up and Dn), Parbold (Up and Dn) and Walkden (Up and Dn)

Bolton Corridor to accommodate 5 x 23m vehicles at:-

Bromley Cross (Up and Dn), Chorley (Up and Dn), Darwen (Up and Dn), Layton (Up only), Moses Gate (Up and Dn), Poulton-Le-Fylde (Up and Dn), Westhoughton (Up and Dn)

Calder Valley to accommodate 4 x 23m vehicles at:-

Mills Hill (Up and Dn) and Rochdale (pls 1 & 3)

Chat Moss Line to accommodate 6 x 23m vehicles at:-

Broad Green (Up and Dn) and Huyton (Up and Dn)

CLC Corridor to accommodate 4 and 5 x 23m vehicles at:-

Warrington Central (Up and Dn) – lengthen to 6-cars to accommodate services on other corridors stopping here

Hadfield Line to accommodate 4 x 23m vehicles at:-

Flowery Field (Up and Dn)

Marple Corridor to accommodate 4 x 23m vehicles at:-

Bredbury (Up and Dn), Brinnington (Up and Dn), Rose Hill Marple (Up only) and Woodley (Up and Dn)

St Helens Corridor to accommodate 4 and 5 x 23m vehicles at:-

Bryn (Up and Dn), Eccleston Park (Up and Dn), Garswood (Up and Dn), Prescott (Up and Dn) and Thatto Heath (Up and Dn)

Stalybridge Corridor to accommodate 6 x 23m vehicles at:-

Ashton-Under-Lyne (Up and Dn)

Stockport Corridor to accommodate 4 x 23m vehicles at:-

Chapel-en-le-Frith (Up only) and Woodsmoor (Up and Dn)

The North West RUS identified through platforms on the Liverpool lines to allow passengers to avoid Victoria when Salford is their destination. These platform enhancements will be progressed during CP4.

accommodate the traffic. We will progress these improvements in CP4.

Depots

The North West RUS and the White paper identified a need for a significant number of new vehicles to operate in the North West. When details are known relating to the deployment of units for lengthening trains there is an expectation that there will be a need for additional depot facilities, and that this will be on the west side of the Pennines as well as the east. Northern Rail's view is that the existing heavy maintenance facilities at Newton Heath will be sufficient even for an expanded fleet. This view is based on the assumption that there is a reduction in the number of units that are stabled there for other reasons e.g. such as fuel, washing and toilets. A suggested solution is that additional facilities are provided at existing locations to avoid units making unnecessary moves to Newton Heath. Further proposed changes are improvements at Blackpool North, and a facility to fuel, wash, tank and CET discharge units at some or all locations in the Liverpool, Wigan and Manchester areas.

Future capacity

The changes to the timetable from December 2008 and the lengthening of local services to cope with passenger demand, will be difficult to accommodate, but can be implemented in the short term. In CP4 we plan to develop a strategy for optimising the use of the central Manchester network (the Manchester 'Hub' feasibility study) including identifying which options will provide optimum capacity and should be progressed.

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

The ability to get aggregates trains out of the Peak District is limited by train paths 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 was remodelled, and the speed and headway of the line altered to

Figure 16 Forecast delay minutes per 100 train km by operator

	2009/10	2010/11	2011/12	2012/13	2013/14
London Midland	2.13	2.01	1.91	1.82	1.74
Arriva Trains Wales	1.63	1.58	1.46	1.35	1.26
Northern Rail	2.05	1.92	1.79	1.67	1.56
CrossCountry	1.63	1.49	1.34	1.21	1.09
Virgin West Coast	1.64	1.49	1.36	1.26	1.17
Transpennine Express	1.66	1.50	1.36	1.22	1.10
Merseyrail	1.00	0.94	0.89	0.84	0.80

Figure 17 Forecast PPM MAA

	2009/10	2010/11	2011/12	2012/13	2013/14
London Midland	89.6%	90.4%	91.0%	91.6%	92.1%
Arriva Trains Wales	90.6%	90.8%	91.0%	91.3%	91.4%
Northern Rail	90.3%	90.8%	91.3%	91.7%	92.2%
CrossCountry	87.1%	88.2%	89.2%	90.2%	91.0%
Virgin West Coast	88.7%	89.6%	90.3%	91.0%	91.5%
Transpennine Express	91.9%	92.5%	93.1%	93.7%	94.2%
Merseyrail	94.4%	94.7%	94.9%	95.1%	95.3%

Future performance

Figure 16 shows the forecast delay minutes per 100 train km by train operator.

Figure 17 shows the forecast PPM for the main TOCs running along the route. In some cases the services covered by the franchises will change; this means that the forecast PPM figures are not directly comparable with the current PPM figures

Northern

Northern operates the local trains networks both into the major conurbations and across the more rural areas in the North of England. The performance of the TOC is currently estimated to be 87.7% PPM and should reach 90.0% by the end of March 2009. The franchise is extremely complex with a focus on cost management sufficient that resources are very efficiently used with little spare capacity for growth or recovery from incidents. The TOC recognises that there is a potential balance between aiming towards a high average performance and targeting a lower, but more consistently achieved level of performance with better use of capacity for passengers.

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

- the ability to maintain a highly performing service connecting multiple key transport nodes each with challenge for delivery in their own right and limited spare capacity for growth;
- scope for growth in general and especially for services in the urban conurbations where there is incomplete scope for infrastructure;

enhancements and low spare resource to deliver increased capacity from existing supplies;

- the challenge of improving service delivery during disruption from the available resource base driving a preference for focus on incident avoidance;
- taking ability to grow revenue across services, including community rail opportunities;
- a consequential need to focus on detailed day to day delivery and good quality operating practice;
- a complex mix of fleet some of which has an inherently low level of reliability. Taking opportunities to replace stock when they arise;
- parallel scope for a significant improvement to the quality of the infrastructure over which Northern operates services, including need to ensure these services link into more dense operation around conurbations. Some of Northern's key revenue flows are also within their worst performing service groups;
- specific need to improve track quality;
- real ability to management the impact of weather and drive down cable theft;
- getting the right balance between performance, journey time and capacity benefits from the enhancements planned on routes operated by TPE (e.g. York Holgate 4th track); and
- driving delivery of smaller scale enhancements such as line speed improvements.

First Keolis Transpennine Express

First Keolis Transpennine Express currently operates the main cross Pennine routes centred on the Leeds and Sheffield to Manchester corridors together with services from Manchester to north Lancashire and Cumbria. In December 2007, it will

take over the Manchester – Scotland services currently operated by Virgin Cross Country, combining these with the current Windermere services. The performance of the TOC is currently estimated to be 90.5% PPM and should reach 91.5 % PPM by the end of March 2009. Recent performance has recovered from relatively poor performance a year ago, sufficient that TPE are focussing on further improvements to service delivery and scope for increased performance.

performance of Virgin West Coast is described in Route 18.

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

- the ability to maintain a highly performing service connecting multiple key transport nodes each with challenge for delivery in their own right and limited spare capacity for growth;
- a consequential need to focus on day to day delivery and good quality operating practice; including building or preserving resilience in timetables where appropriate;
- uncertainty over the impact of the change in operation of the Manchester to Scotland services and the major change to West Coast Main Line services and speed up of Virgin West Coast services planned for December 2008;
- getting the right balance between performance, journey time and capacity benefits from the enhancements planned on routes operated by TPE (e.g. York Holgate 4th track);
- driving delivery of smaller scale enhancements such as line speed improvements;
- management of freight services;
- real ability to management the impact of weather and drive down cable theft; and
- growth in general and specifically taking scope to increase services in line with opportunities in TPE's franchise.

The plan for the route is being developed around these key points and currently suggests that performance on FCC will be around 94.2% by April 2014 this includes an allowance for passenger/traffic growth and an increase in engineering work. The TOC and NR are keen to develop a more detailed 6 year plan as part of the upcoming J-PIP round.

The other operators on this route are Arriva Train Wales, Merseyrail, Virgin West Coast and Central (London Midland). The future performance section for Arriva Train Wales can be found in the plans for Routes 14, 15 and 22 and London Midland can be found in the plan for Routes 17 and 18. Merseyrail is described in the plan for Route 21, and

Engineering access

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

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

Our strategy on this route is to liaise with the train operators to find the least disruptive ways in which to carry out the required renewals. This tends to mean disruption to Sunday services, but can also result in blockades when major work is required, with diversionary routes or bus replacements.

There has again been heavy renewals work on the Hope Valley route during January to March 2007 and this will be repeated in subsequent years.

We intend to continue the regime of Sunday blocks at appropriate times of the year. For example, we closed the line from Preston to Blackpool on Sundays in February and March in 2007, to coincide with times of least demand for services. Between July and September, we carried out work on sections between Northwich and Edgeley also affecting Sunday services, and between Chester and Manchester. Our possessions on the Diggle route affecting trains between Manchester and Leeds tie up with a similar strategy on LNE Territory. Between September and December 2007, all trains ran via the Calder Valley route.

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

Long term opportunities and challenges

Manchester Core

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

Central stations – Overarching strategy

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

Piccadilly – train shed

At Piccadilly the issues are the ability of the train shed platforms 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 train shed. The platform occupancy problem caused by train lengthening is not expected to become critical until CP5. Methods of dealing with this issue include:

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

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

Piccadilly – Castlefield corridor

Capacity on the Castlefield Corridor is constrained now by reoccupation of Piccadilly platforms 13 and 14. Longer term, creating two more through platforms (15 and 16) would allow alternate use of either side of island platforms moving the capacity constraint from Piccadilly to Castlefield Junction,

and allowing additional trains through. Capacity is also lost by the Liverpool – Oxford Road local trains making a crossing move when terminating. Being able to terminate these services in a centre bay or push them through Piccadilly to another destination would also improve utilisation of the corridor. The scale of this intervention and need for Transport and Works permissions means that whilst it would be beneficial to develop this in CP4, it is likely to be implemented in CP5. Ultimately capacity would be maximised by 4 tracking the whole corridor.

Piccadilly – southern approaches

Capacity on the southern approaches is currently constrained by the layout and pattern of services. A significant portion of capacity is used up by the transpennine services to Liverpool and the TPE services to the airport crossing the throat on the flat. There is a case to be made for removing the crossing services by way of grade separation, such as a flyover at Ardwick. An alternative option is to redirect the Liverpool and airport services so that there is no need to cross on the flat, such as by way of a chord at Ordsall Lane and diverting traffic through Victoria. Capacity of trains could be increased in this area by the long-term aspiration to lengthen freight trains to 775m lengths. All these options will be evaluated during CP4, along with other options to for addressing the capacity issue at Piccadilly, with an aim to begin implementation in CP5.

Capacity is constrained at Slade Lane due to the issue of 6 tracks merging into 4, and there being a transposition from paired by use to paired by direction. The re-signalling of Piccadilly will provide a potential opportunity to extend the goods loops to Slade Lane and Ardwick to create a 6-track formation. These interventions may be considered as part of the CP4 strategy, but their implementation is likely to be in CP5 or beyond.

Oxford Road

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

Victoria

Capacity on the north side of Manchester can be maximised in the medium term by pushing trains through Victoria, but in the long term the layout will ultimately require remodelling and additional bay platforms will be needed on the north east, north

west and south west quadrants of the station. It is likely that these works will be required beyond CP4, but they may be implemented in CP4 as opportunities arise with other schemes.

Liverpool Core **Liverpool Lime Street**

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

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

Outer areas **Outer / Inner timetables**

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

Bolton - Blackburn

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

Liverpool - Huyton

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

Earlestown – Manchester

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

Manchester Airport

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

Enhancements to be completed by end of CP3

Figure 18 CP3 enhancements

Implementation date	Project	Project description	Output change
2008	(A) Manchester Airport Third platform	Create a third platform at Manchester Airport	Increased capacity, improved performance
2008	(B) Olive Mount Chord	Reinstate the chord at Olive Mount in order to provide direct access between Huyton and Seaforth.	Increased capacity for freight
2008	(C) Guide Bridge West Junction renewal enhancement element	Renew junction with raised speed of the turnouts to and from Stalybridge	Higher turnout speed, no approach release on signals, shorted journey time
2007-09	(D) Manchester Piccadilly Platform 13 and 14	Scheme to de-clutter platforms 13 and 14 at Manchester Piccadilly station.	Improve passenger flows
2007/08	(E) Gauge clearance on the Bootle Branch	Increase gauge to W10 between Seaforth and Edge Hill	Enables larger freight containers to run on this line

Proposed enhancements in CP4

Figure 19 Proposed enhancements in CP4			
Implementation date	Project	Project description	Output change
2009 – 2014	Platform lengthening	Increase in train lengths and associated platforms to accommodate peak passenger growth	Longer trains allowing greater peak passenger numbers
2009 – 2014	Ⓕ North Transpennine Upgrade phase 1 cross-route project – also see Route 10	Liverpool - Manchester - Leeds line speed and capacity increase.	Increased capacity and improved performance and journey times.
2009 – 2014	Ⓖ Manchester Hub	Enhance the capacity of the rail network in central Manchester and improve regional services	Strategic in the Regional dimension
2009 – 2014	Ⓗ Salford Central platforms on Liverpool lines	Create platforms on the Liverpool lines	Allow passengers easier access to Salford and Spinningfields, alleviate passenger congestion/ disruption at Victoria
2009 – 2014	Ⓘ North West RUS Line speed Improvements	Increase line speed and associated capacity. Lines identified dependent on business case but could include: Atherton, Calder Valley, Edgeley, Hazel Grove and Buxton Lines	Improve line speeds and reduce PSRs in line with the North West RUS
2009 – 2014	Ⓙ Buxton remodel	Remodel layout at Buxton	Allow direct freight access to the Down slow line from Hazel Grove and allow passenger services to access platform 1 without a shunt move
2009 – 2014	Ⓚ Bolton Corridor Line speed and capacity Improvement	Improve on PSRs, raise line speed and improve on restrictive signals on the Bolton corridor, improve capacity possibly by providing platform 5 at Bolton	Improved journey times between Manchester and Preston/Blackpool in line with the RUS recommendation

Figure 19 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change
2009 – 2014	Ⓛ Salford Crescent	Redevelop and possibly relocate Salford Crescent with more and longer platforms	Create a new Salford Crescent station, giving four through platforms and 2 south facing bays, platforms long enough for lengthened trains and facilities suitable for an interchange station.

NRDF candidate schemes in CP4

Figure 20 Candidate NRDF schemes in CP4			
Implementation date	Project	Project description	Output change
2009 – 2014	Ⓜ CLC up loop	Create loop on the up line on the CLC – possibly at Warrington or at Glazebrook	Improved performance
2009 – 2014	Ⓝ Improved interchange at Eccles	Improve the interchange between train and tram at Eccles - by way of advertising, signage and improving the station environment.	Would alleviate passenger congestion / disruption at Manchester Victoria
2009 – 2014	Ⓞ Dinting Signalling Review	Speed up lines between Hadfield / Dinting / Glossop	Improved Journey times
2009 – 2014	Ⓟ Longsight Good Loops	Speed up access and egress speeds into the loops to improve freight recessing	Allow passenger traffic to avoid freight services
2009 – 2014	Ⓠ North West RUS –clearance for RA10 in east Manchester	RA10 clearance on targeted routes in east Manchester	Increased freight capability
2009-14	Ⓡ Stalybridge bay platform	In conjunction with Stalybridge resignalling and remodelling, create a bay platform at Stalybridge that can be accessed from Victoria without the need to cross the main line.	Increased capacity and improved performance at Stalybridge. Ability to run current and more Victoria – Stalybridge trains that do not interact with TPE and freight.
2009 – 2014	Ⓢ Speke to Seaforth W10 Clearance	Gauge clear the route between the WCML and Seaforth	W10 clearance Speke – Edge Hill, Edge Hill to Seaforth and Edge Hill to Earlestown

Figure 20 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change
2009 – 2014	Ⓡ Lostock Additional Platforms	Additional platforms on the Westhoughton line to improve capacity on the Bolton corridor. Most likely a part of the Bolton Corridor scheme	Reduced crowding, Improved performance, reduced journey times and better patterns of services between Preston and Manchester
2009 – 2014	Ⓢ Bolton platform 5	Restoration of platform down loop (platform 5) Bolton	Most likely a part of Bolton corridor scheme, to release capacity on the Bolton corridor and reduce journey times between Preston and Manchester

Maintenance and renewals activity

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

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

It should be noted that in order to manage the deliverability of our Civils, Signalling & Electrification plans we have included an element of over planning in our work banks. As a consequence the sum of our route plans exceeds our plan for the network as a whole. It is likely that a small proportion of the activities in these areas will slip to subsequent years.

Figure 21 Summary of estimated maintenance & renewals costs and activity volumes

£m (2006/07 prices)						Control Period Totals			
	2009/10	2010/11	2011/12	2012/13	2013/14	CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	18	16	16	16	16	82	71	67	66
Signalling	5	5	5	5	4	23	21	20	20
Electrification	1	1	1	1	1	6	5	5	5
Telecoms	3	3	2	2	2	13	11	11	11
Plant and Machinery	1	1	1	1	1	3	2	2	2
Other (overheads / indirect)	14	13	13	13	12	65	58	56	56
Total	42	39	37	37	37	192	169	161	160
Renewals									
Track	22	26	22	24	22	116	74	69	62
Signalling	9	15	10	10	6	49	49	100	118
Civils	22	21	20	20	20	103	92	89	88
Operational Property	11	11	13	14	16	66	95	75	75
Electrification	3	3	3	3	2	14	8	9	5
Telecoms	11	8	6	4	2	32	16	13	17
Plant and Machinery	4	3	2	2	2	13	14	14	15
Discretionary Investments	2	2	1	4	1	11	14	5	15
Total	83	91	77	81	70	402	362	374	395
Renewals Volumes									
Rail (KM)	16	15	17	20	20	87	114	84	63
Sleepers (KM)	24	24	24	24	24	118	65	93	104
Ballast (KM)	23	23	23	23	23	116	72	108	118
S&C Units	22	39	25	32	29	147	76	37	14
SEUs commissioned	0	33	41	28	0	102	53	556	423

Appendix

Figure 22 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability												
SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway	No of Tracks
20.01	Manchester Piccadilly – Crewe	CMP1, CMP2	Primary	DfT	No	W9 & W10	8	100 (75)	25 kv	TCB	3	2 (4)
20.02	Manchester Piccadilly – Deansgate	COL	Secondary	DfT	No	W9 & W10	8	35	25 kv	TCB	2	2
20.03	Deansgate – Allerton	MAJ, AHX, WJL2, WJL3	Secondary	DfT	No	W9 (W9 & W10)	7 (8)	85 (75)	none (25kv)	TCB (AB)	4 (2) (8)	2
20.04	Liverpool Lime Street – Allerton	WJL3, WJL4	Primary	DfT	No	W9	8	80	25 kv	TCB	3	4
20.05	NTP: Manchester Piccadilly – Guide Bridge	H AJ	Secondary	DfT	No	W8	8	60	25 kv	TCB	4 (2)	2
20.06	NTP: Guide Bridge – Stalybridge	SAJ	Secondary	DfT	No	W8	8	40	none	TCB	4	2
20.07	Castlefield Jn – Euxton Jn	MVE1, MVE2, OLW, COL	Secondary	DfT	No	W9 (W7) (W6)	8	75	none	TCB	3 (4)	2
20.08	Ashburys/Hyde Jn – New Mills Central/Rose Hill	TTA1, TTA2, MRH, RHY1, RHY2	Secondary	DfT	No	W7	8	60	none	TCB	4	2
20.09	Guide Bridge – Glossop/Hadfield	DSD, HAJ, GDW	Secondary	DfT	No	W6	8	60	25 kv	TCB (AB)	12½	2 (1)
20.10	Guide Bridge – Stockport – Mouldsworth	HNS, EJN, WJP1, CDM2	Secondary	DfT	Yes	W7 (W9) (W8) (W6)	8	90 (60)	none (1500 dc)	TCB (AB)	12 (4)	2 (1)

Figure 22 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability												
SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway	No of Tracks
20.11	Slade Lane Jn – Manchester Airport – Wilmslow	MIA, STY, SMS	Secondary	DfT	No	W9 & W10 (W6)	8	75	25 kv	TCB	3	2
20.12	Blackpool North and South Branches	PBN, KBS1	Rural	DfT	Yes	W6	8	75 (70)	none	AB (OTW)	4 (6) (23)	2 (1)
20.13	Edge Hill – Victoria plus Springs Bank – Broad Green plus Earlestown	EEE, DSE, NGJ, WEE, SBH1, SBH2, SBH3	Secondary	DfT	No	W9 (W8)	7 (8)	75	none (25kv)	TCB (AB)	4 (5) (8½) (10)	2 (1)
20.14	Southport/Kirkby – Wigan Wallgate	WKL1, WKL2, WBS3	Rural	DfT	Yes	W9 (W8) (W7) (W6)	8 (7)	70	none	TCB (AB) (OTS)	14 (17½)	2 (1)
20.15	Wigan Wallgate – Manchester Victoria	MVE1, WBS1, WBS2, LCN	Secondary	DfT	No	W7 (W6)	8	60(40)	none	TCB (AB)	14 (6) (4)	2
20.16	Manchester Victoria – Rochdale/Stalybridge	MVL1, MVN2, MVM, MPR1, BPP,	Secondary	DfT	No	W7	8	70	none	AB (TCB)	2 (4) (5)	2
20.17	Buxton Branch	BEJ	Rural	DfT	Yes	W6	8	60 (40)	none (25kv)	AB (TCB)	12½	2
20.18	Bolton – Blackburn	BBB	Rural	DfT	Yes	W6	8	60	none	TCB	19 (4)	1 (2)
20.19	Oldham Loop	MPR2, MPR3	Rural	DfT	No	W6	8	60	none	AB	9 (4)	2 (1)
20.20	Freight Lines	PPP1, CMP1,	Freight	DfT	No	various	8 (7)	20 (60)	none	TCB (AB)	various	2 (1)

Figure 22 Strategic route sections

Predominant aspect recorded (secondary aspects recorded in brackets). ELR is Engineers Line Reference, RA is Route Availability												
SRS	SRS Name	ELR	Classification	Funding	Community Rail	Freight Gauge	RA	Speed	Electrification	Signalling Type	Signalling Headway	No of Tracks
		SYC, GMC, PPA1, SCT1, SNJ, HCN, DJO1, PPA2							(25kv)			
20.21	Hazel Grove – Edgeley Jn											

Capacity and operational constraints

- A Manchester hub: capacity constraint

- B Salford Crescent – Euxton Junction capacity constraint

- C Ardwick Stalybridge: busy 2-track section with a mix of traffic, flat junctions and limited overtaking

- D Piccadilly – Hunts Cross: busy 2-track section with mix of traffic, flat junctions and limited overtaking

- E Bolton – Blackburn: single line sections

- F Stockport – Altrincham: single line sections

Other issues on the route

- 1 Oldham Loop Metrolink issues

- 2 Chorley Buckshaw Village – siting of new station

- 3 Fylde Coast tram proposals

- 4 GMPTE tram proposals

- 5 Manchester Victoria – former Manchester Exchange development

- 6 Potential intermodal freight terminals