

Route Plans 2008
Route 21
Merseyrail



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Route 21 Merseyrail



Section 1: Today's railway

Route context

The core of this route is the Merseyrail system, located mainly in Merseyside, but extending into Cheshire and Lancashire. It consists of the Wirral and Northern lines, including the loop line and the stock interchange line. These third rail electrified lines form a high-capacity suburban passenger railway, playing a key role in enabling the local population to commute to work quickly, efficiently and with minimal environmental impact as part of the area's integrated public transport network. There are also a considerable number of users in the off-peak hours, supporting the area's main shopping and tourist markets. Additionally, the

route covers the non-electrified North Mersey Branch and lines to Birkenhead docks. The only regular freight flow is at the very edge of the route, where trains to and from Ellesmere Port freight facility briefly go through the station on the way to and from Fiddlers Ferry.

The route is operating close to capacity from Sandhills Junction on the Northern line and from Hamilton Square on the Wirral line into Liverpool City Centre.

Work on a Route Utilisation Strategy (RUS) commenced in mid-2007. This is expected to publish final recommendations in 2009.

Today's route

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

- Wirral Line (21.01) – Liverpool to New Brighton, West Kirby, Chester and Ellesmere Port; and
- Northern Line (21.01) – Liverpool to Hunts Cross, Kirkby, Ormskirk and Southport.

Route 21 Merseyrail



Current passenger and freight demand

The Merseyrail network provides fast, frequent, regular interval services around Merseyside and into the heart of the sixth largest city in the UK. There is a high level of demand from the commuter market with 15 percent of journey to work trips into Liverpool city centre being made by rail. The two busiest stations on this route, Liverpool Central and Birkenhead Hamilton Square, serve both the business district and the retail and leisure areas. Off-peak demand is substantial, with Saturdays in particular recently seeing considerable growth. Every station is used by a sizeable number of passengers every day. The services on this route provide connections to Manchester and London, as well as to other longer distance destinations, via interchange notably at Liverpool Lime Street. This improves the attractiveness of rail for longer, inter-regional journeys, helping to improve links between regional centres.

Demand for freight paths has increased slightly following the introduction of an imported coal flow from Ellesmere Port to Fiddlers Ferry power station.

Current services

The main TOC is Merseyrail Electrics, whose services only run beyond the route for a short distance at Hunts Cross and Chester. Arriva Trains Wales runs into Bidston and Northern Rail into Southport, Kirkby, Ellesmere Port and Ormskirk. There is some interaction with TransPennine Express, Northern Rail and East Midlands Trains services at Hunts Cross West.

The network has one of the highest frequency services outside London, with the central sections of the route conveying up to 16 trains per hour in each direction from Monday to Saturdays. Frequency generally reduces in the evening, with the last services around midnight. Passenger services then restart around 0600 hrs. The system can be split into two sections, with interchanges for passengers at Liverpool Central and Moorfields. The Northern line serves stations to Southport, Ormskirk, Kirkby and Hunts Cross, with each of these end points seeing a 15 minute service in the core of the day. The Southport line and, since December 2006, the line to Hunts Cross have enjoyed this level of service throughout the whole day. In the case of the Hunts Cross service this provides improved access to Liverpool Airport by way of Liverpool South Parkway. The Wirral line extends to New Brighton, West Kirby, Chester and Ellesmere Port. The former two destinations have a 15 minute service, the latter two a 30 minute service in general but 15 minute in the peak. Service frequency is highest in the central loop, with a five-minute service during the day and 16 trains per hour in both peaks.

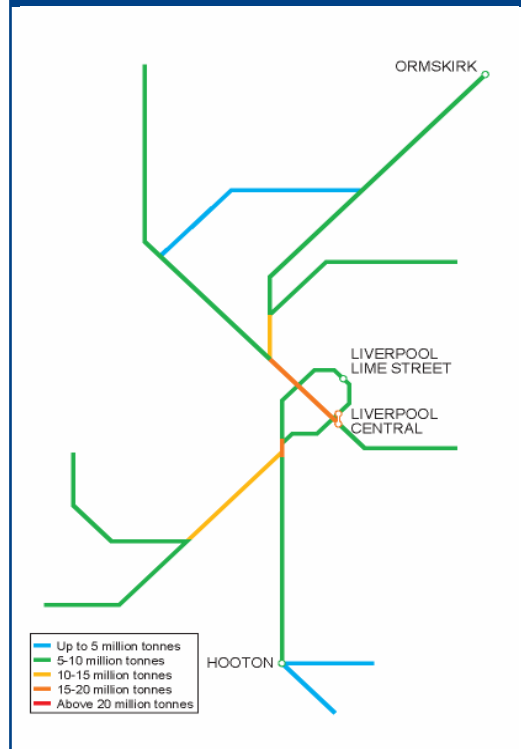
A regular freight coal flow began in 2005, with two trains per day operated by Freightliner Heavy Haul from Ellesmere Port to Fiddlers Ferry power station.

Figure 1 Current use

	Passenger	Freight	Total
Train km per year (millions)	6	0	6
Train tonne km per year (millions)	805	14	819

Traffic volumes are summarised in Figure 1.

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

Figure 2 Tonnage

Current infrastructure capability

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

Figure 3 Linespeed

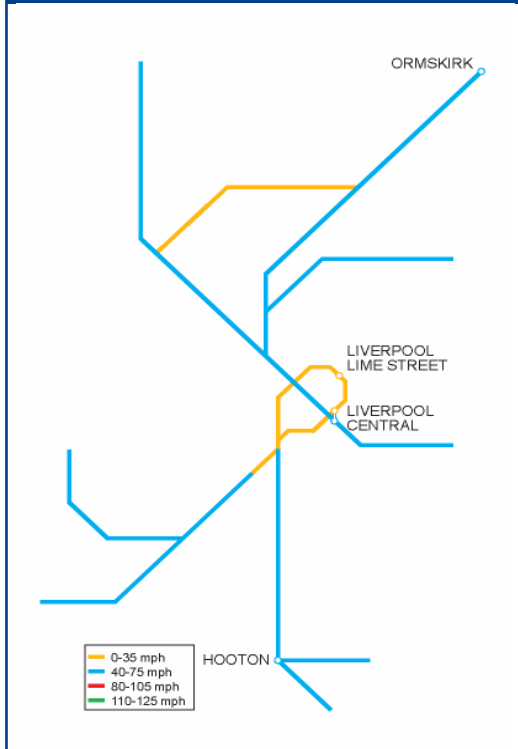


Figure 4 Electrification

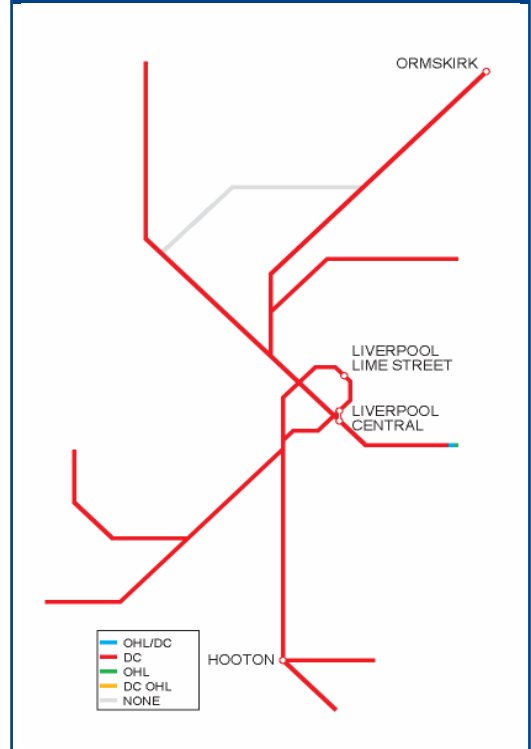


Figure 5 Route availability

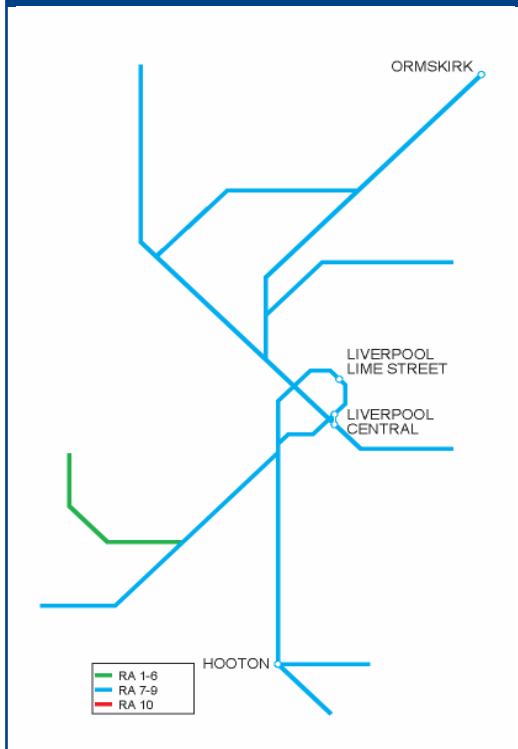


Figure 6 Gauge

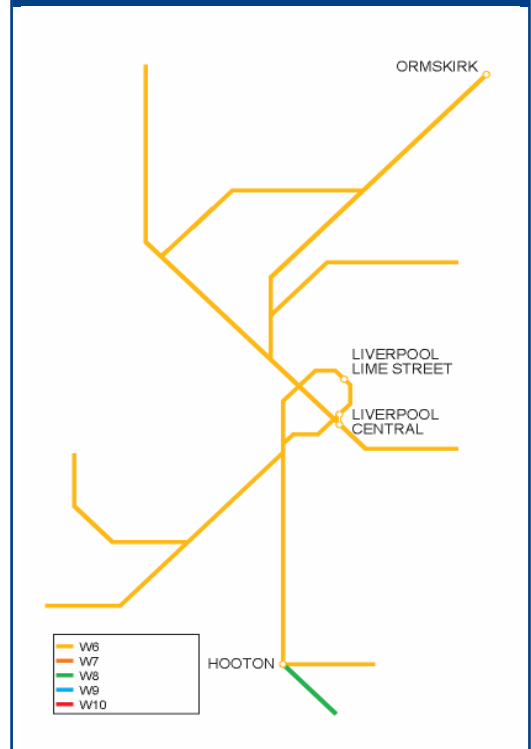


Figure 7 Current train service level (peak trains per hour)

Route Section	Peak tph
James Street – Birkenhead Hamilton Square (Wirral line)	16
Liverpool Central – Sandhills (Northern line)	14

Current capacity

The high service frequency is possible due to the homogenous performance characteristics and stopping patterns of the rolling stock. However, this level of frequency, combined with the flat junctions on the route, means that the network is operating close to capacity at a number of locations. This would make it unrealistic to accommodate any additional services into the centre during the peak, without a significant restructuring of the services. Additional off-peak services would be possible but may impact on performance. However, there is the potential to provide future additional passenger capacity by lengthening more trains to six cars.

Liverpool Central is close to capacity in terms of passenger numbers during the busy peak hours, and on some weekends. Passenger congestion is exacerbated at platform level by the narrow platforms inside the constrained tunnels. In order to relieve this crowding, we are exploring with Merseytravel a number of options. These range from a number of short term improvements to long term solutions involving considerable cost.

Due to the constricted nature of the tunnels and underground stations, train width is limited in the central sections of this route, and train length is restricted to 120m.

The ability of the majority of this route to carry freight is constrained by the high frequency passenger service, the limited route availability and gauge over large sections, and the constricted tunnels in the central sections. The attractiveness of the route for freight is limited by the lack of freight terminals and its self-contained nature; in order to access it, trains must travel long, circuitous routes. The only sections that could see freight in the foreseeable future without major alterations are between Ellesmere Port and Warrington (via Helsby) or Chester (via Hooton) and between Birkenhead Docks and Bidston via Birkenhead North. This latter route would also require Birkenhead Docks to be brought back into use.

It has been demonstrated however, that trains operating between Wrexham and Liverpool via Borderlands could be accommodated within the current peak services.

Figure 7 represents numbers of trains in the morning peak hour.

Current performance

Following a period of excessive wheel flange wear being experienced on the Merseyrail network during the summer of 2007, Network Rail and Merseyrail have jointly commissioned a detailed and thorough investigation into the underlying causes. A joint project team comprising both our own rail and vehicle system engineers and independent experts from Delta Rail has been set up to conduct a full scale review of the wheel-rail system interface. The objective of this review is to provide recommendations for the short, medium and longer term, in order to achieve sustainable operating conditions to minimise wheel and rail wear rates and to determine the optimum equilibrium of the railway system as a whole.

Performance on this route is generally good and improving although it did suffer during the latter part of 2006 due to a number of factors including track circuit failures; fleet performance also failed to hit its targets. Weather has been a key factor in 2007 with severe storms in January and flooding in June both impacting significantly on performance. Figure 8 shows the current PPM.

As the Merseyrail electrics network is virtually self-contained, performance problems on the route do not tend to propagate to other routes, and neither do performance problems on other routes have a great impact on the Merseyrail system. The exception is at Hunts Cross West Junction, where Merseyrail trains interact with services on the line between Liverpool and Manchester. However, the high frequency train service in the central sections means that the knock on delays arising from disruption on the route itself can be considerable. Avoidance of delays and robust recovery plans following incidents are therefore important.

A number of initiatives have been identified to tackle specific issues and a Joint Performance Improvement Plan has been produced to ensure that all plans are fully implemented and monitored. Details of this are in the future performance section.

Completion of re-fencing over the Merseyrail network is continuing to play a significant part in reducing instances of route crime, which is a cause of significant delay in certain areas. Overbridges are being fenced, and crime hotspots have been identified to enable proactive policing of these areas, including sniffer dogs and metal detectors. However, route crime originating at stations has recently increased. We are working closely with the British Transport Police, Carlisle Security and other members of the rail industry to address this issue.

Figure 8 Current PPM MMA (2007/08)

TOC	MAA	As at period
Merseyrail	94.7%	12

Section 2: Tomorrow's railway

HLOS output requirements

Figure 9 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)
Merseyrail	337	18

Future demand

The rapid redevelopment of Liverpool city centre is expected to continue, and this will lead to an increase in demand. One significant example of this redevelopment is at Paradise Street – Liverpool One – a 1.6 million square feet retail development due for completion in 2008. Together with the Kings Dock development, it is anticipated that this will create 8,000 jobs by 2010. With these centres located only a few minutes walk from central Liverpool stations, rail is expected to attract a considerable journey share. Also in 2008, Liverpool is the European Capital of Culture. This is predicted to attract 11 million visitors to events all over the city, such as the 'Liverpool Sound' concert and the Turner prize. Liverpool also hosts many 'occasional' events; for example, at the same time as the Capital of Culture celebration, the city will be hosting the 'Tall Ships' conference and the Open Golf Tournament on the same weekend. In terms of employment growth, it has been suggested that the Capital of Culture title will create 13,500 jobs. This will generate an increase in commuting trips into the centre, and encourage new business and leisure journeys.

Further growth is expected in rail journeys to and from Liverpool – John Lennon airport, according to the Government's White Paper, 'The Future of Air Transport'. The airport itself is planning for passenger throughput to increase from less than four million in 2004 to over 12 million by 2030. Additionally, the airport has a target to increase the percentage of people using public transport to access the airport to 12 percent in 2008, 14 percent in 2011, and 24 percent in 2030. Achieving these targets is being helped by a reduction in the number of car parking spaces per passenger at the airport, an increased frequency bus service to Hunts Cross, and the new Liverpool South Parkway station which opened in June 2006. It had been thought that the opening of Liverpool South Parkway might abstract demand from Hunts Cross. However, early

indications suggest this is not the case, with figures compiled by Merseyrail Electrics showing steady demand at Hunts Cross.

In July 2006, Hoylake hosted the Open Golf Tournament. This lasted for eight days, with a total of around 60,000 people travelling to the event on the enhanced train service. On the busiest single day, it is estimated that 15,000 people travelled to the event by train. A similar number are expected when the event takes place at Birkdale in July 2008.

The high demand for coal for electricity generation is likely to mean that the number of trains per day from Ellesmere Port to Fiddlers Ferry will increase from two to three. This flow may also act as a catalyst for new freight flows from Ellesmere Port to begin. We are working with Mersey Docks and Harbour Company and English, Welsh and Scottish Railway on a scheme to bring back into use the line from Birkenhead docks towards Bidston. This could introduce new freight flows, notably including steel. However, whilst the number and timings of these trains will be constrained by the operation of existing passenger services, especially given the close proximity to the train maintenance depot at Birkenhead North, there is not expected to be a need for significant infrastructure intervention.

Section 3: Proposed strategy

Figure 10 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 10 Summary of proposed strategy milestones			
Implementation date	Service enhancement	Infrastructure enhancement	Expected output change
2009 - 2014	Increased passenger capacity	Liverpool Central station upgrade	Improved train performance, increased passenger numbers, improved platform capacity
2009 - 2014	Increased passenger capacity	Liverpool James Street	Improved station capacity, improved passenger throughput and flows between platform and street level

Strategic direction

The service provision is expected to remain broadly unchanged through CP4, with train lengthening as required. The network is built for six car operation, and many services currently operate as three car. Consequently, within CP4, train lengthening is not expected to provoke a need to change any infrastructure – such as lengthening of platforms.

The key issue for this route in the immediate future is being able to deal with increasing passenger numbers at the central Liverpool stations. The increased numbers can be dealt with in terms of train capacity by lengthening more services to six car operation for a greater part of the day. There are times at present when Liverpool Central struggles to handle the existing level of passenger use, and this issue is likely to escalate with the opening of the new commercial developments. It is also likely to impact on James Street, which does not currently experience difficulties, due to its lift-only access to platform level and its position as the closest station to Liverpool One. It is anticipated that passenger crowding / access problems will therefore need addressing at James Street within CP4. Recent analysis from the Merseyside RUS indicates that Moorfields also has emerging passenger capacity issues that need addressing in CP4.

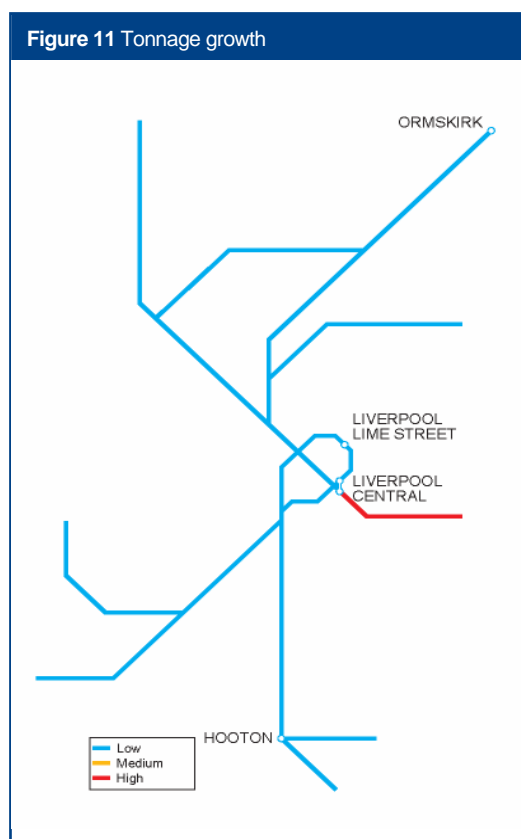
It is expected that the service provision beyond Hooton – currently two tph to both Ellesmere Port and Chester in the off peak and four tph in the peak direction serving both routes in the peak – will be varied within CP4. Merseytravel and Merseyrail are examining options, and the final position is not yet known.

Merseytravel has aspirations to increase the extent of the DC network where there is an economic case to do so. Extensions being considered include services towards Wrexham (see Route 22), Wigan, and Burscough and beyond. It is our expectation that the extension of electrification beyond Kirkby to a new station at Headbolt Lane will occur in CP4 as a scheme fully funded by outside parties. Other potential extensions of electrification such as beyond Headbolt Lane to or towards Wigan, or beyond Ormskirk to or towards Preston are expected to be developed in CP4 but are unlikely to be implemented until CP5. The extension from Bidston to or towards Wrexham is not expected to see implementation until CP5, although this could be earlier if funding could be identified.

We expect the Merseyside RUS to identify a number of locations where there is benefit to be gained in journey time or performance from some targeted interventions to address line speed or

permanent speed restrictions. We would expect to carry out these interventions 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.



Future train service proposals

Figure 11 indicates the forecast percentage change in tonnage to 2017.

The rolling stock fleet is due replacement starting in about 2013. At about that time with current demand projections, the existing fleet will be reaching the limit of its ability to carry the required passenger load in the peaks within platform length constraints. As a result we expect decisions around a new fleet to consider a range of issues, such as the vehicles' ability to carry passengers, power supply requirements, platform lengthening within the tunnels, pulse-loading of underground stations by trains able to carry more passengers, and the ability of the new units to go beyond the existing boundaries of the dc network, either by extending the dc network or by the trains having an alternative means of motive power. We expect to start working with Merseytravel and Merseyrail to develop solutions to these issues in CP4.

Future capability

In the short to medium term, we do not expect the physical characteristics of the network to change; the bridges and narrow tunnels mean that any changes to gauge would not be cost effective. As there is little prospect of freight on the main sections, enhanced route availability will not be required. However, it may be possible to increase the line speed in certain sections away from the

centre, to provide reduced journey times for passengers.

The renewal of the fleet in around 2013 and the expectation that predicted demand will soon exceed the network's capability to carry passengers will provide an opportunity to review the capability of the network. This would be the time to determine whether extensions to the electrification offer value for money and should be taken into account in the new fleet.

The lines to Birkenhead docks are currently out of use. If the docks were to be re-opened to rail freight, rail access would need to be restored.

A scheme is being developed to assess the case for additional stabling at Birkenhead depot. This would provide increased operational flexibility at the depot. This is thought likely to be necessary for the new fleet in CP5.

Future capacity

Network Rail believes that the high frequency of service on this route (combined with additional six car trains) is sufficient to cater for predicted growth until fleet replacement. An additional six units have been refurbished and brought into regular service to allow busy trains to be lengthened from three car to six car lengths, bringing the number of units up to 59. This is a result of monitoring conducted by Merseytravel and Merseyrail Electrics, to ensure resources match demand. The renewal of the fleet in around 2013 will provide an opportunity to make changes to the rolling stock specification if required.

Stations

Facilities – All Merseyside stations are staffed, and we are working with Merseytravel and local authorities at several stations on the route to provide better station facilities as well as improved passenger access (see figures 14 and 15). Of particular note is Bootle Oriol Road where an extensive rebuild and refurbishment project is taking place to provide improved station facilities and step free access for all passengers.

New stations – A potential new station at Headbolt Lane is being investigated as part of the proposed electrification project, already mentioned in the Strategic Direction section. This scheme would depend on suitable funding being found within CP4.

Car parking – There are currently just over 3,000 parking spaces at stations on this route, the majority of which are filled at busy times. This is likely to act as a constraint to growth, and is being addressed in conjunction with industry partners.

Figure 12 Forecast PPM MAA- CP4 plan

	2009/10	2010/11	2011/12	2012/13	2013/14
Merseyrail Electrics	94.8%	94.9%	95.1%	95.2%	95.2%

Figure 13 Forecast PPM MAA - proposed local commitments

	2009/10	2010/11	2011/12	2012/13	2013/14
Merseyrail Electrics	93.6%	93.8%	93.9%	94.0%	94.0%

Future performance

Figure 12 sets out the planned PPM for the train operator. Figure 13 sets out the trajectory we propose as local commitments with the operator. These are lower than planned given the need for flexibility in achieving the HLOS targets and to reflect the greater uncertainty and risk associated with projecting performance at a disaggregated level. Reasonable requirements will finally be established for CP4 in our 2009 Business Plan.

Merseyrail Electrics

The performance of Merseyrail is currently 94.7 percent PPM and this is forecast to continue to April 2009 as an outcome of the 2008/09 Joint Performance Improvement Plan (J-PIP). The J-PIP has recently been supported by the implementation of a joint right time railway initiative, focusing on eliminating consistent small problems which tend to drive down PPM on a daily basis.

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

- line speed improvements especially between Hooton and Chester to create a performance buffer for the Chester services;
- resilient timetable, changes to station dwell times;
- Autumn management – increased back to boundary de-vegetation;
- reduction in the impact of trespass, vandalism and fatalities;
- right time railway – reduction in late starts;
- reduction in sub-threshold delays;
- improvement in track quality – replace jointed track with CWR;
- extreme weather mitigation through enhanced drainage.

The route plan is being developed around these key points and currently suggests that performance on Merseyrail by April 2014 will be around 95.2 percent. This includes an allowance for passenger/traffic growth and an increase in engineering work. This figure has been discussed with Merseyrail and is in line with their aspirations.

The other operators on this route are Arriva Train Wales and Northern Rail. The future performance section for Arriva Train Wales can be found in the

plans for Routes 14, 15 and 22 and Northern Rail can be found in the plans for Routes 9, 20, 22 and 23.

Engineering access

On this route, we work closely with Merseyrail Electrics to identify the least disruptive ways in which to carry out renewal work. Generally, we will attempt to do work when services are least heavily used, such as late at night and on Sundays. We also aim to avoid big events such as the Grand National, Southport Air Show, Chester Race weekends, Open Golf, Matthew Street Festival and the Tall Ships Festival. In consequence, this means that exact times and dates are liable to alteration. Additionally, it is sometimes necessary and prudent to undertake larger items of work over a longer period of time. In 2007, there was a number of Sunday closures, notably between Canning St and Hooton, and Bootle and Formby.

Long term opportunities and challenges

The short to medium term challenge on this route is to meet the growing passenger demand whilst sustaining the performance improvements that have been made.

The longer term aspiration is to expand the Merseyrail network (i.e. either extend electrification or have units capable of operating beyond the dc network) beyond its current boundaries. The opportunity for much of this will depend on the decisions to be made over the replacement fleet. The list of opportunities to extend the electric network that are currently under consideration are Bidston to or towards Wrexham; Kirkby (by then Headbolt Lane) to or towards Wigan; and Ormskirk to or towards Preston and or Southport.

If the option to introduce hybrid trains, capable of operating off the dc network, is progressed, then the case for bringing the Bootle Branch into passenger service operation will be examined.

A case would also need to be made for reinstating the freight lines between Canning Street and Hooton if freight traffic out of Birkenhead Docks continues to grow to an extent that it became impossible to path it between the Merseyrail services at Bidston.

The Merseyside RUS will examine when the core of the network is likely to be unable to sustain demand, and what options might be available to address this.

Enhancements to be completed by end of CP3

Figure 14 CP3 enhancements					
Implementation date	Project	Project description	Output change	Funding	GRIP stage
2008	Ⓐ Bootle Oriel Road Station	Major refurbishment of station as part of the Local Transport Plan	Improved station facilities and step free access	Third party	6
2008	Ⓑ James Street station upgrade	Improvements to station facilities	Improved facilities	Third party	6
2008/09	Ⓒ Fazakerley Station	Improved access at station	Improved access	Third party	6
2008/09	Ⓓ Sandhills Station	Introduction of new lift access to the platforms, a new booking office, waiting accommodation and step free access	Improved station facilities and step free access	Third party	6
2008/09	Ⓔ Moorfields Station	Improvements to station facilities	Improved facilities	Network Rail Discretionary Fund	5
2008/09	Ⓕ Southport Station	Improvements to station facilities and environment	Improved facilities	Network Rail Discretionary Fund	5

Proposed enhancements in CP4

Figure 15 Proposed enhancements in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009/10	Ⓒ Station access improvements at Hooton	Disabled access improvements at Hooton station	Improved access	Third party	4
2009 - 2014	Ⓗ New station at Headbolt Lane	New station and third rail electrification extension from Kirkby to Headbolt Lane	Improves accessibility to the rail network	Third party	2
2008 - 09	Ⓘ Liverpool South parkway car park	Construction of new car park at the site of the former Garston station	Improved car parking	Third party	2
2009/10	Ⓙ Station access improvements (lifts)	Improved access at Formby, St Michaels and Wallasey Grove Road stations	Improved access	Third party	1
2008 - 09	Ⓚ Car park extension and improvement project	Improvements to car parking at Bebington, Bidston, Bromborough, Kirkby, Spital and Blundellsands and Crosby stations	Improved car parking facilities	Third party	1
2009 - 2014	Ⓜ Liverpool Central station upgrade	Improve platform environment along with access and circulation to enable Liverpool Central to handle more passengers	Improved train performance, increased passenger numbers	Periodic Review 2008	–
2009 -2014	Ⓝ James Street station	Improve access between street level and platform level at James Street Station	Improved train performance, increased passenger numbers	Periodic Review 2008	–

NRDF candidate schemes in CP4

Figure 16 Candidate NRDF schemes in CP4

Implementation date	Project	Project description	Output change	Funding	GRIP stage
2009 -2014	⌚ Moorfields station – alleviation of passenger crowding	Alleviate passenger crowding on the platforms at Moorfields Station	Improved passenger flows and increased safety	Periodic Review 2008	–
2009 - 2014	Merseyrail LSI	Targeted Line Speed improvements	Improved passenger journey time, increased passenger numbers	Network Rail Discretionary Fund	–

Maintenance and renewals activity

Figure 17 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 17 Summary of estimated maintenance & renewals costs and activity volumes

£m (2006/07 prices)	2009/10	2010/11	2011/12	2012/13	2013/14	Control Period Totals			
						CP4	CP5	CP6	CP7
Maintenance expenditure									
Track	3	3	3	3	2	13	12	11	12
Signalling	1	1	1	1	1	4	4	4	4
Electrification	0	0	0	0	0	2	2	2	2
Telecoms	1	1	1	1	1	3	2	2	2
Plant and Machinery	0	0	0	0	0	1	1	1	1
Other (overheads / indirect)	3	3	3	3	3	13	12	12	12
Total	8	7	7	7	7	37	33	31	32
Renewals									
Track	5	6	5	6	5	27	13	8	7
Signalling	1	1	1	1	1	4	9	8	3
Civils	4	4	3	4	3	19	12	12	12
Operational Property	5	5	5	5	5	25	23	23	23
Electrification	2	2	3	3	3	12	7	4	6
Telecoms	2	2	4	1	1	10	3	5	4
Plant and Machinery	2	1	1	1	1	6	6	6	6
Total	21	21	21	20	19	102	74	65	60
Renewals Volumes									
Rail (KM)	2	2	2	2	2	10	26	11	7
Sleepers (KM)	10	10	10	10	10	48	8	11	10
Ballast (KM)	10	10	10	10	10	48	8	11	10
S&C Units	0	4	0	5	3	12	15	10	9
SEUs commissioned	0	0	0	0	0	0	34	18	0

Appendix

Figure 18 Strategic route section

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	SRS
21.01	Merseyrail	HXS2, BEN, CRR1, CRR2, CWK1, CWK2, CWK3, HHJ, HXS1, HXS2, HXS3, MIR2, MIR2, SJO1, SJO2, WJK	Secondary	DfT	No	W6 (W8)	8 (7) (10)	60 (35)	DC	TCB	3 (2) (5)	2	Merseyrail

Capacity and operational constraints

- A Sandhills – Walton: flat junction
- B Liverpool Central: platform capacity
- C Hunts Cross West Junction: crossing moves

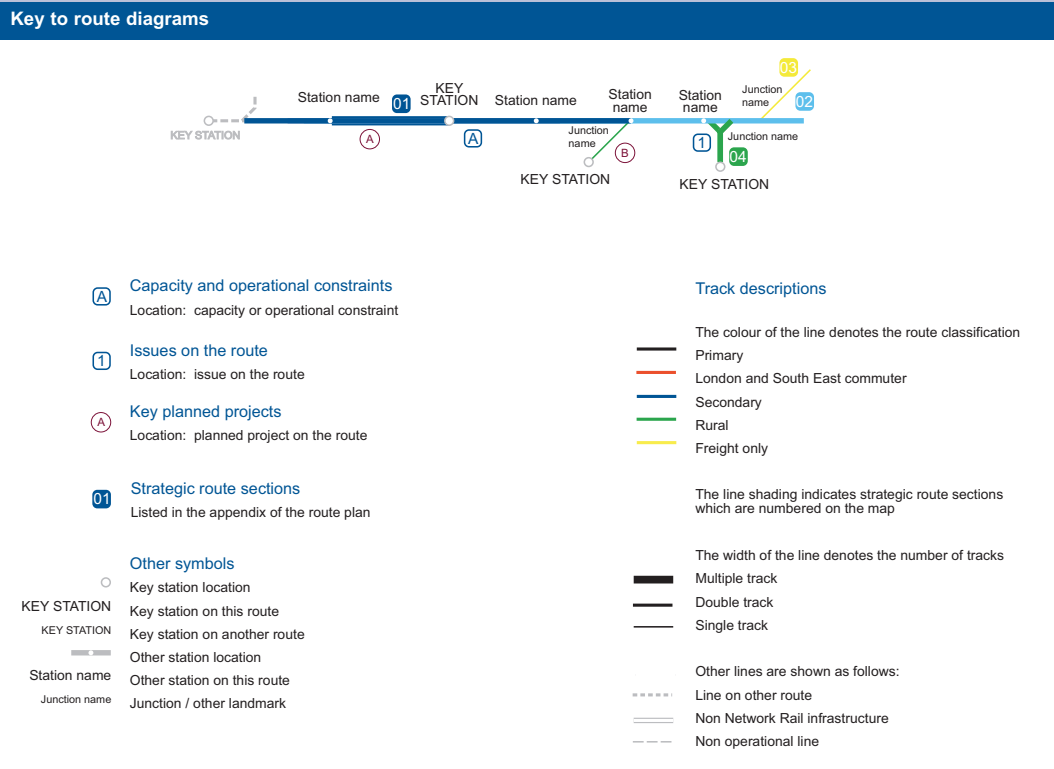
Other issues on the route

- 1 Birkenhead Docks branch: access for freight
- 2 Tight curvature in tunnel causing significant track deterioration

Note

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

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



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

**This Route Plan is part of a set.
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