
Liverpool City Region Combined Authority Long Term Rail Strategy



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Foreword

If the UK economy is to be rebalanced and the prosperity of our City Region increased, then transport, and specifically rail, has a vital role to play. Super-regions are securing the advantages of agglomeration to become the economic powerhouses of the modern world. Whether it is Dongguan in China, Randstad in the Netherlands, or closer to home in London, they all exhibit higher-than-average productivity because they are the places where business investment, skills and innovation come together in ever-greater concentrations, facilitated by effective transport networks.

This updated Long Term Rail Strategy takes forward the 2014 version to provide a route map for the rail infrastructure that can support the clustering effect we need to see. Increased connectivity, capacity and frequencies, together with reduced journey times and simplified ticketing across Liverpool City Region and the north of England generally, will enable people and freight to move more efficiently, catalysing economic growth.

This Strategy sets out a systematic and evidence-based approach to developing our rail network, building on the pioneering devolution of the Merseyrail Concession in 2003. The contract now in place for the replacement of the Merseyrail fleet is a key priority of this Strategy that is now in the delivery phase. The new City Region devolution arrangements have helped to create both greater funding flexibility and certainty. However, we nonetheless need to conduct hard-nosed assessments of the economic benefits of the schemes put forward, such as expanding stations, building new ones or extending our rail network.

Furthermore, central government continues to hold the purse strings for the majority of funding streams needed to support development of the rail infrastructure required.

This is especially so in terms of our ambitions to be directly linked into HS2 and 'Crossrail for the North' to give us west-east connectivity. That's why the government needs to give its total commitment to infrastructure investment and improving connectivity across the north of England. Without it, we will continue to have well beneath-par connectivity for a city region of our size and fail to realise our full economic potential.

Ambitions for major rail infrastructure improvements in our area are not simply about giving people access to the 21st century transport system they deserve. The economic reality is that the UK will continue to have a heavily imbalanced economy without it – and that would be a detriment to a post-Brexit UK economy.

This Strategy also addresses our more localised connectivity challenges and opportunities, the most significant of which in terms of passenger transport is capacity in Liverpool city centre. Central Station sits at the heart of our rail network and is already the busiest underground station outside the capital, with 15.6 million journeys starting or ending there each year. It is reaching capacity and yet we can anticipate demand continuing to rise as our population and economy grow. In order to keep the City Region moving, we therefore need to increase capacity at the heart of the system in central Liverpool.

In terms of freight, our biggest challenge, particularly in the context of our future outside the EU, is improving connectivity to our £400m post-Panamax port at Liverpool 2. Promoting modal shift to rail is likely to provide the most sustainable option for moving up to 13,500 TEUs (Twenty-foot Equivalent Unit) each vessel can carry. This Strategy therefore identifies the need to upgrade the Bootle Branch Line to connect in to enhanced west-east and north-south lines.

I am pleased to endorse the contents of this Strategy, which provides a key plan of delivering my vision for a better-connected and more prosperous City Region.

Steve Rotheram
Mayor of the Liverpool City Region



Background

- 1.1 The railway plays an important role in facilitating sustainable economic growth. Railways connect people with communities and link our major towns and cities. Rail travel also has environmental benefits, reducing congestion and pollution caused by road traffic. But the infrastructure is largely Victorian, and a recent Transport Select Committee Reportⁱ reported that our railways face a huge capacity challenge; the number of passenger journeys has more than doubled over the last two decades, while the size of the physical network has barely increased at all.
- 1.2 There is growing confidence in the Liverpool City Region economy, and recognition of its key role in realising the aspirations of the 'Northern Powerhouse' as a means of rebalance the whole UK economy. Liverpool City Region, for example, has the second-highest incidence of high-growth firms in the country, second only to London. But to fully maximise this potential, the City Region needs to be prepared for a significant increase in passengers and freight over the next 30 years; these increased transport needs will come from within the City Region, from its surrounding hinterland, and further afield. For these reasons, the Long Term Rail Strategy was developed in 2014 as a way of unlocking this potential through an enhanced rail offer in the City Region to build on the strength of its existing assets and to help facilitate the prioritised investment and growth envisioned. Four documents were produced as part of the process, including the Final Strategy Summary Reportⁱ.
- 1.3 It was intended from the outset that the Strategy would be subject to regular review to ensure it reflects changing economic circumstances and funding opportunities. This update should therefore be considered as the fifth document in the series, and while it is intended to complement the first four, it is in essence a standalone document.
- 1.4 This update reflects significant developments both nationally and locally, that will clearly have an impact on its delivery. In August 2014, for example, just after the Long Term Rail Strategy was published, the then Chancellor set out a vision to better connect the north and for it to become a Northern Powerhouse, acting together to drive economic outcomes greater than the sum of its parts.
- 1.5 The proposals include Northern Powerhouse Rail; a long-term ambition to link the economic centres of the north more closely together so that the north can compete both internationally and with the rest of the UK much more effectively. The government's proposals for High Speed 2 have also progressed since 2014; a high-speed link remains a priority for Liverpool City Region, and for it to be fully connected to not only Northern Powerhouse Rail, but also to the HS2 Network.
- 1.6 An independent economic review of the Northern Powerhouse was undertaken in 2015, and concluded that a step change in economic performance – significantly around "business-as-usual projections" – was possible with substantial improvements in transport connectivity, skills, innovation, and inward investment across the north. These revised economic projections have informed this updated Long Term Rail Strategy, providing a critical underpinning of the requirements of the rail network as population, GVA and employment growth increase demands for travel.
- 1.7 The Liverpool City Region vision, as articulated in the Growth Strategy Building our Future², is "to build on our core strengths and capacity for innovation to create a truly global and competitive City Region at the heart of the Northern Powerhouse". Quite simply, our rail network must be up to the challenge.

ⁱ The future of rail: Improving the rail passenger experience (October 2016)

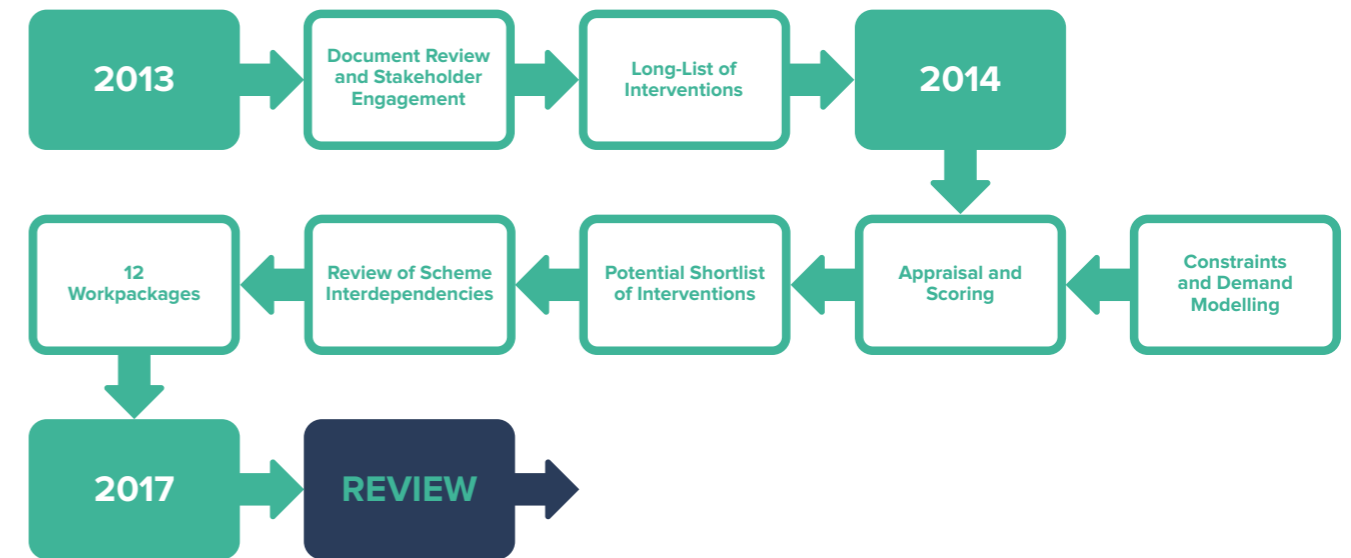
ⁱⁱ The June 2013 Spending Review saw the Government ask Local Enterprise Partnerships (LEPs) to develop multi-year local Strategic Economic Plans, which would then be used for negotiations on 'Growth Deals' with the Government. These deals would see LEPs awarded funding from the Local Growth Fund, created in the 2013 Spending Review.

Converting Strength to Lasting Economic Growth

- 2.1 The Long Term Rail Strategy has been developed with the aim of ensuring that the rail network meets Liverpool City Region’s needs over the next 30 years and beyond. Its aim is to present a clear vision for the development of the network and articulate the important role rail can play in the economic development of Liverpool City Region, and its hinterland, to maximise its contribution to the wider UK economy and act as a catalyst for growth.
- 2.2 The Liverpool City Region Combined Authority was established in 2014. In 2015, a Devolution Deal was agreed with government that saw new powers and responsibilities being devolved to the City Region. In 2017, Liverpool City Region directly elected its first Metro Mayor, who will exercise powers over a devolved and consolidated local transport budget. Since the Long Term Rail Strategy was developed to offer flexibility through regular review, acknowledging that economic circumstances evolve and the business case for interventions would fluctuate correspondingly, it is being updated in light of these developments.
- 2.3 These developments are discussed in greater detail in Sections 3.1 – 3.7, alongside consideration of the impact of Transport for the North (Sections 3.8 – 3.15), an organisation created in the second half of 2014 to transform the transport system across the north of England and to add strategic value by ensuring that funding and strategy decisions about transport in the north are informed by local knowledge and requirements. However, the vision for this Long Term Rail Strategy remains unchanged: that rail should play a key role in helping deliver the economic vision of Liverpool City Region.

- 2.4 In developing the Long Term Rail Strategy (Figure 1 – The Long Term Rail Strategy Process), a comprehensive review of previous studies, informed by stakeholder engagement and consultation, helped shape a long list of potential schemes. The full list of schemes included long-term infrastructure improvements, new routes, new stations, improvements to the operation of services and wider policy initiatives. The process was informed by the economic projections that had underpinned the City Region’s Growth Deal², which have been revisited as part of this periodic update (Section 4).
- 2.5 One of the outcomes of the developmental aspects of the Long Term Rail Strategy was the identification of existing and future constraints on the rail network. Based on available evidence and forecast future demand, it highlighted a number of significant issues in relation to capacity, connectivity, infrastructure, funding, and facilities and rolling stock that would need to be addressed to ensure they did not hinder the economic growth of the City Region. These constraints are revisited in terms of their ongoing relevance and significance (Sections 5.15).
- 2.6 Each of the identified schemes was initially considered against a number of criteria. Following the development of the potential project shortlist, the interdependencies of the projects were reviewed and 12 integrated packages of work established, the component parts of which were intended to work together in a complementary fashion to deliver maximum impact and be and scalable to adapt to variables over time. Section 6 considers the ongoing validity of these original packages and updates and refocuses the proposed interventions, regrouping them within three new categories, in line with the updated evidence base and new challenges.

Figure 1 – The Long Term Rail Strategy Process



- 2.7 Clearly, with a time horizon of 30+ years, the funding sources for many of these schemes remain undetermined. Some schemes (the reinstatement of the Halton Curve, a new station at Maghull North, and the development of Newton-le-Willows station as a strategic interchange) have already secured funding through the Growth Deal and are now being delivered. Furthermore, a key element of the Liverpool City Region Devolution Deal was the commitment to the establishment of a Single Investment Fund, aligning national and City Region funding, in order to give the Mayoral Combined Authority greater flexibility over local investment.

- 2.8 The Long Term Rail Strategy presents an ambitious vision of a network that meets future passenger needs and opens up economic opportunity. Where good service levels exist, the network is already a success story, but more must be done to spread these benefits to a wider travel-to-work geography and to provide the capacity and frequencies required to enable projected economic growth. While the scale of investment required is significant, it nevertheless presents a blueprint for **“converting strength to lasting long-term economic growth”**.

Responding to New Challenges

Devolution and Decentralisation

- 3.1 The Liverpool City Region Devolution Deal outlines a range of new funds, freedoms and responsibilities that have passed to the control of the Liverpool City Region Combined Authority, principally by means of the directly elected Metro Mayor. It focuses predominantly on economic development, transport, housing and planning, and employment and skills, and is intended to support additional jobs while improving the skills and employment prospects of the City Region's residents.
- 3.2 The recently published Transport Investment Strategy recognises government's reliance on such devolved decision making to allow communities to flourish and power our city economies. As such, the powers and freedoms that stem from the Devolution Deal ultimately mean Liverpool City Region has greater potential to support the planning, phasing and delivery of the local rail offer, ensure that it is joined up with plans for new housing and economic development, and help to improve integration between rail and other transport modes through the interventions set out within this Strategy.
- 3.3 The Deal commits to the establishment of a long-term Special Rail Grant settlement for the Merseyrail network, which has enabled Merseytravel and the Combined Authority to progress a locally funded procurement of new trains (Sections 5.12 – 5.14). The Deal also allows Liverpool City Region to consider bringing forward alternative proposals for the management of rail stations on the Merseyrail Electrics network initially, and potentially, other stations on other lines in due course. This will allow the City Region to determine its own investment priorities based on customer need, thereby supporting the Long Term Rail Strategy in providing an enhanced rail offer for the City Region and delivering economic growth.

- 3.4 In addition, there is a commitment within the Deal to develop a Single Statutory City Region Framework supporting the delivery of strategic employment and housing sites across the City Region. Through his manifesto, the Metro Mayor has pledged to use the Combined Authority's strategic planning and housing powers to encourage better use of brownfield land, while recognising that for this to be effective, we will need to radically improve the transport network and improve rail connectivity within the City Region.
- 3.5 A significant fiscal element of the Devolution Deal is the creation of a 'Single Investment Fund' that comprises allocations of the Local Growth Fund (LGF); consolidated, multi-year transport settlements and additional allocations of grant-based investment funds. The Single Investment Fund (SIF) is not ring-fenced, allowing the City Region freedom to allocate funds to locally identified priorities. A key guiding principle underpinning the SIF relates to 'Gain Share'; where possible, the SIF fund will be invested in projects that generate a return, so that resources can be recycled to achieve further growth. The implications of this change, along with a number of other funding issues, are covered in detail in Sections 5.16 – 5.25.
- 3.6 The SIF is a highly significant consideration in the development of the Long Term Rail Strategy. It provides the City Region with capital funding to support the delivery of core priorities, without the need necessarily to bid to government on a project-by-project basis. However, it introduces a degree of competition and complementarity across thematic areas, with conflicting local authority priorities and between different modes of transport. Scheme promoters must, therefore, clearly demonstrate that schemes have a clear strategic fit, deliver the best outcomes for the City Region, and generally offer high value for money.

- 3.7 In addition, as articulated in the Transport Investment Strategy, the government remains committed to supplementing devolved funding with specific investment on a competitive basis, both for larger projects across the country that are too big to fund locally and for projects that deliver national priorities, such as the local transport schemes within the National Productivity Investment Fund. As such, the Long Term Rail Strategy will clearly support the strategic case for scheme development (see Section 5.20) as part of any competitive bidding process.

An Engine for Growth

- 3.8 When the then Chancellor unveiled initial plans for the Northern Powerhouse, it was aimed at helping to improve the economic performance of the north, which has a 25% gap to the economic performance of the rest of the country. Central to these plans were better transport connections across the north, recognising its potential as a polycentric region to make a step change in performance, helping to rebalance the economy; this recognised that the current relatively slow and infrequent journey times across the north represented one of the barriers to transformational change, when compared with successful regions across Europe such as the Randstad and Rhine-Ruhr areas.
- 3.9 Transport for the North (TfN) was established to transform the transport system across the north of England, providing the infrastructure needed to drive economic growth. A significant partnership, with elected and business leaders from all areas of Northern England uniting to work with central Government and national transport bodies, TfN is expected to become a statutory Sub-national Transport Body before the end of 2017. It will not replace or replicate the work of existing local transport bodies such as Merseytravel, but has a pan-northern remit including elements such as Northern Powerhouse Rail, an ambitious plan for a rail network that will provide faster, more frequent and reliable links between the north's six biggest cities.

- 3.10 The Northern Powerhouse Independent Economic Review (NPIER)⁴, commissioned by TfN, identified that there were four industry sectors in the north, known as "prime capabilities", that could help to achieve this transformation growth: advanced manufacturing, energy, health innovation, and digital. These are underpinned by three "enabling capabilities": financial and professional services, logistics, and education. Uniquely across the north of England, the Liverpool to Manchester corridor boasts strong representation of all seven capabilities.
- 3.11 Importantly, the report also identified a number of prerequisites for this growth to take place, including:
- Enhanced pan-northern city centre to city centre rail links to enable agglomeration, integrated with local city region public transport. Rail is currently constrained by poor connections, low frequencies, slow journey times and complex fares
 - Enhanced public transport within city regions, including joined-up networks, cross-city operations and smart simplified ticketing
 - Improved global connectivity for both people and goods, ensuring improved access and capacity to the north's ports and airports
- 3.12 The Northern Powerhouse Rail concept helps with these strategic aims; more frequent fast services between the six core cities of the north, and Manchester Airport, will both enable agglomeration and, through the use of new links, offers the potential to release capacity on current infrastructure for more freight and local passenger services. Work is currently underway to identify the exact solutions that TfN will be taking forward for business case development, while the initial 'conditional outputs' formulated for the Northern Powerhouse are shown in Figure 2.

3.13 In addition, progress on High Speed 2 (HS2) continues, with the bill for construction of Phase 1 having received royal assent on 23 February 2017. This first phase will connect London with the West Midlands, and is due to open in 2026. The government has decided to speed up delivery of the West Midlands-to-Crewe section, Phase 2a, which is now expected to open in 2027, bringing benefits to Liverpool City Region six years earlier than planned. Phase 2b (West Midlands to Leeds and Crewe to Manchester) is projected to open in 2033.

3.14 These initial plans see Liverpool served by 'conventional compatible' trains, running on HS2 infrastructure as far as Crewe but then using the current congested route along the West Coast Main Line and Runcorn to reach Liverpool. Although Liverpool will see an increase in service frequency, it will not see as great a reduction in journey times as other cities. A comparison with Manchester, Wigan and Preston is shown in Figure 3.

An Engine for Growth

3.15 In November 2016, the Secretary of State for Transport confirmed that the HS2 Phase 2b construction plan could make provision to join up north-south HS2 rail infrastructure with west-east Northern Powerhouse Rail to Liverpool. Subsequently, the Chancellor of the Exchequer announced £300m of funding in September 2017 towards NPR 'touchpoints' with HS2. Two touchpoints are required on HS2 to enable both west-east and north-south connectivity for Liverpool City Region, and both would comprise small sections of additional line to provide junctions for NPR with minimal impact to HS2 operations. If a successful case can be made for the touchpoints and the wider Northern Powerhouse Rail network, they are expected to be included in the Hybrid Bill for Phase 2b. Accordingly, Liverpool City Region continues to lobby for a direct High Speed link to Liverpool, which will both enable the competitive journey times important for the City Region's economic growth and release capacity on the current infrastructure for more freight and improvements to other passenger services.

Network Rail

3.16 In October 2013, the ORRⁱⁱⁱ set out Network Rail's funding, and the outputs expected of it, for Control Period 5 (CP5)^{iv}. This included a planned £11.5bn for infrastructure upgrades, or 'enhancements', that were intended to deliver the government's strategic objectives for the railway. Network Rail was reclassified as a public company in September 2014. 3.17

3.17 On 25 June 2015, the Secretary of State for Transport announced that aspects of the enhancements were "costing more and taking longer" than forecast. Sir Peter Hendy, as the new Chairman of Network Rail, was commissioned to replan how this investment could be delivered. The Secretary of State also asked Dame Colette Bowe, a non-executive member of the Department for Transport (DfT) Board, to consider the lessons to be learned from the planning process and the practical steps that might be taken to ensure more effective future planning and delivery.

3.18 In July 2015, Nicola Shaw, chief executive of High Speed 1, was commissioned to advise the government on the longer-term future shape and financing of Network Rail. In November 2015, a scoping document was published, setting out a view of the railway as a vital national asset driving economic growth and increasing social and economic cohesiveness.

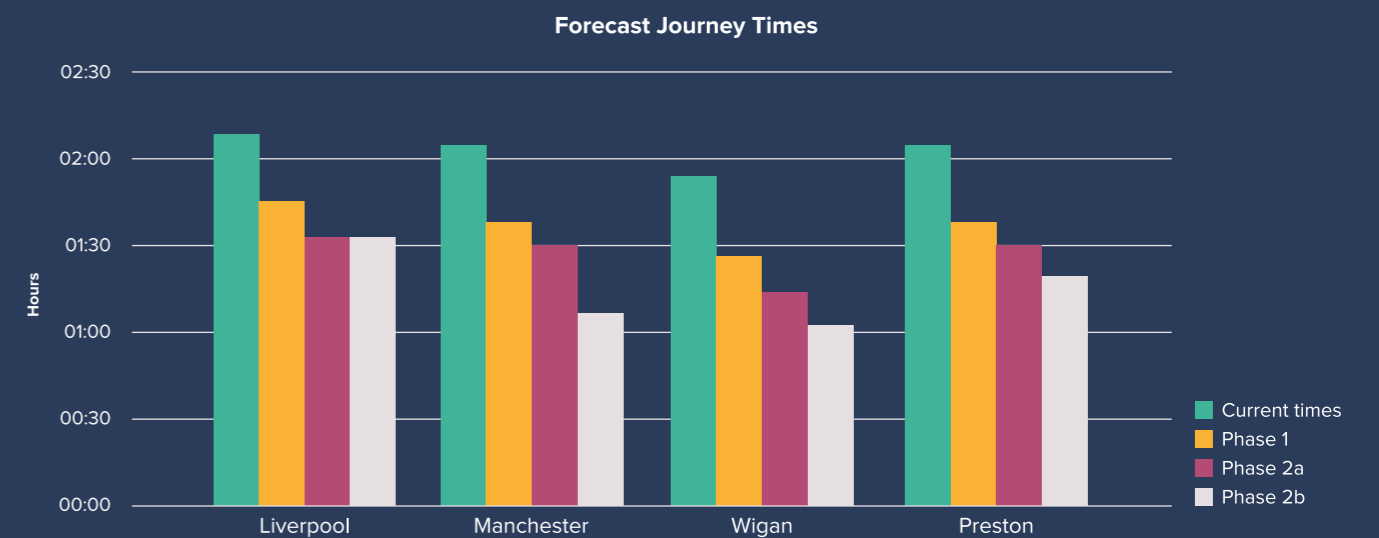
3.19 The Bowe and Hendy Reviews both reported in November 2015. Sir Peter Hendy's report examined every element of the enhancements programme, reviewing costs and timescales, in order to provide a plan that was efficient, deliverable and affordable. The plan proposed that all infrastructure schemes should be delivered, although a number of schemes would need reprofiling to take place in CP6 (2019 to 2024).

Figure 2 – Vision for Northern Powerhouse Rail frequencies and journey times



Source: TfN – The Northern Transport Strategy: Spring 2016 Report

Figure 3 – Projected HS2 journey times (to London Euston)



Source: HS2 Ltd

iii Then the Office for Rail Regulation, now the Office of Rail and Road
iv Control Period 5 (2014 – 2019); Network Rail Control Periods are the 5-year timespans into which Network Rail, the owner and operator of most of the rail infrastructure in Great Britain, works for financial and other planning purposes.

- 3.20 Dame Colette Bowe⁶ concluded that there was no single overarching cause for the cost escalation and delays, with a number of issues contributing. These included planning processes that had been thought to have worked successfully during CP4 but were inadequate in the face of the scale and complexity of the CP5 programme, and included proposed electrification works on a scale not attempted before in the UK. She added that the blurred lines of responsibility between the DfT, Network Rail and the ORR, inadequate internal programme and portfolio management, and the complexity of the portfolio of scheme, with poor scope definition, had led to cost increases.
- 3.21 Her recommendations called for the DfT to be significantly more active in prioritising strategic objectives, allocating funding for schemes in the early stages of development, and introducing greater flexibility to adjust the programme in response to emerging pressures. She concluded that complex route enhancement schemes should be subject to integrated governance frameworks and reflect the whole-system requirements of such upgrades (including greater involvement of operators), and that project, programme and portfolio management practices should be introduced throughout the process; noting in particular the key issues of assurance, integration, and risk management. In planning how schemes are delivered, and in focusing future investment, more consideration should be given to passenger and operator priorities in terms of both passenger and freight needs.
- 3.22 This was followed in March 2016 by the Shaw Review's recommendations⁷, which concluded that there should be a greater focus on the "needs of the customer" – train operators and passengers – with the railways lacking the "local flexibility and autonomy" required. The report also noted that one option was to introduce private sector capital through private financing.

- 3.23 However, there are a number of barriers to the involvement of third-party investment; some relate to process, and some concern the role and perceived behaviours of Network Rail towards third parties. To address these issues, Professor Peter Hansford was commissioned by Network Rail to chair an independent review of contestability in the UK rail market, with the aim of encouraging third-party investment and infrastructure delivery on the national railway.
- 3.24 The Hansford Review⁸ focuses on ways of unlocking new investment and reducing costs for rail projects. It recognises that a more contestable market for rail projects would lead to greater innovation, improve cost performance and deliver projects more competitively and predictably, therefore offering better value for money. In addition, it would provide more opportunities for third parties to fund and deliver projects. It is anticipated that this approach will streamline the process for third-party investment and thus make some of the longer-term projects more achievable.
- 3.25 The issues described above, while not impacting on the broad thrust of the Long Term Rail Strategy, do have an impact on the timing of the potential interventions on the rail network. With this in mind, a broader approach to the timescales for delivery being taken and a clear split between the development and the delivery of specific projects are required. While five-year time periods have been used to illustrate the likely programme, the government's move away from tying enhancements to specific Control Periods is understood, and projects will be taken forward once a robust business case has been developed.

Franchising

- 3.26 Most of the franchise services operating into Liverpool City Region, with the exception of Merseyrail Electrics, have either seen or are going through a period of change. This section looks at those changes and considers their potential impact on the City Region.
- 3.27 Management of the Merseyrail Concession was devolved from the DfT to Merseytravel in 2003, during which time it has been managed through a bespoke agreement. The Concession covers the operation rail services across the Northern and Wirral Lines that comprise the DC electrified network and have 75 miles of track and carry 34m passengers annually. Liverpool Central is the busiest station on the network and is the most heavily used underground station outside of London, with 15.6 million passengers a year starting or finishing their journey at Liverpool Central.
- 3.28 As the lead transport body for Liverpool City Region, Merseytravel is a member of the consortium of consortium of local transport authorities (LTAs) that comprise Rail North Limited, a company established in March 2015 to oversee the management of the TransPennine Express and Northern Rail franchises on behalf of the Secretary of State for Transport. Rail North has brought together the LTAs across the north of England into one cohesive and proactive body to represent the northern authorities' national, regional and local economic, transport and strategic objectives for the rail industry, and co-manages the franchises with the DfT, on a path towards full devolution from the DfT.
- 3.29 Since one of the drivers for the creation of TfN as a sub-national transport body was to create an organisation that could speak with one voice on all transport matters affecting the north of England, it has been proposed that TfN takes over ownership of Rail North and subsumes all of its functions directly into TfN. However the franchises are managed going forward, Liverpool City Region will continue to work with Rail North to develop the rail network and improve links across the north of England.

- 3.30 In addition, Merseytravel continues to press for improvements to services operating on the West Coast Main Line. The current franchise is expected to be extended through a direct award to Virgin Trains. An Invitation to Tender for the new franchise, West Coast Partnership is expected to commence in the second half of 2018 with the new franchise commencing in April 2019. In particular, Liverpool City Region will be pressing for an increase in services between Liverpool and London to two trains an hour a reinstatement of hourly stops at Milton Keynes; and one service an hour to call at Liverpool South Parkway.
- 3.31 The East Midlands Train franchise, under which services from East Anglia and the East Midlands operate into Lime Street, ended on 4 March 2018, with an option to extend it for a further year. The Secretary of State has decided to use the full extension period, taking the franchise to 3 March 2019, and intends to make a further interim agreement with East Midlands Trains, which will end in August 2019. The final three bidders for the new franchise have been identified and the Invitation to tender will be issued shortly. Merseytravel will press for improved links to the Midlands as part of the new franchise.
- 3.32 It must be noted, however, that Liverpool City Region's wider functional economic geography extends into Cheshire West and Chester, northeast Wales, west Lancashire, and Warrington, with important flows of goods, services and commuters in both directions across the national boundary; these are already substantial flows, and are forecast to grow even higher. For this reason, Liverpool City Region has actively engaged with partnerships such as the Mersey Dee Alliance over many years. Priorities include working together on common strategic interests to ensure a sustainable future for the area and facilitate a coherent approach to social, economic and environmental issues.

3.33 Transport and enhanced connectivity by rail has consistently been recognised as a key ingredient of sustaining growth, improving skills, supporting social inclusion and tackling transport emissions across local authority boundaries. High-quality and well-used rail connections already exist, including the Merseyrail service from Liverpool to Chester, which provides a quarter-hourly stopping service for much of the day. However, away from the Merseyrail network, the rail offer is considerably poorer.

3.34 The need to improve cross boundary rail links to support the major employment and economic opportunities on both sides of the border has resulted in the establishment of the North Wales & Mersey Dee Rail Task Force, which has set out its plans and aspirations under the banner of 'Growth Track 360'⁹.

3.35 A process is now underway by Transport for Wales^v to secure an operator and development partner to operate the Wales and Borders Rail franchise. The respecification of the franchise provides opportunities to enhance the reach, frequency and capacity of services operating to Liverpool City Region from across the border via the Halton Curve and the Borderlands Line (Bidston to Wrexham). The Invitation to Tender was issued in September 2017, and a new contract will be awarded in October 2018. Liverpool City Region will work closely with Transport for Wales and shortlisted bidders to seek to shape the franchise accordingly.



“ The increase in town and city centre employment in the knowledge-based ‘Prime’ and ‘Enabling’ capabilities cannot be accommodated through private (car) travel alone. It will require enhanced public transport connectivity within city regions: coherent, user-friendly, joined-up networks involving frequent rail services (including cross-city operations), light rail and bus, all supported by smart, multimodal ticketing with simplified fares.

Northern Powerhouse Independent Economic Review, Scenarios for Future Growth

^v Transport for Wales was established by Welsh Government in 2015 as a wholly owned, not-for-profit company to provide support and expertise to the Welsh Government in connection to transport projects.

Updating the Evidence Base

Liverpool City Region Growth

4.1 The Liverpool City Region Local Enterprise Partnership (LEP) commissions a series of forecasts of how the economy of the City Region will change over the forthcoming years. These provide a key narrative for growth in the transport network as increases in population, employment and GVA increase travel demand. The most recent set of forecasts was produced for the LEP by Oxford Economics in 2016, providing an up-to-date evidence base. There are two scenarios: one ('Baseline') considers growth prospects based on current levels of background growth, while the second ('Scenario') provides the likely growth prospects based on delivery of a number of large employment and housing investments across the City Region; these are what might be termed known investments, as opposed to investments that are at a more speculative stage. Figures 4a – 4c show both 'baseline' and 'scenario' for population, employment and GVA:

Figure 4a – Population

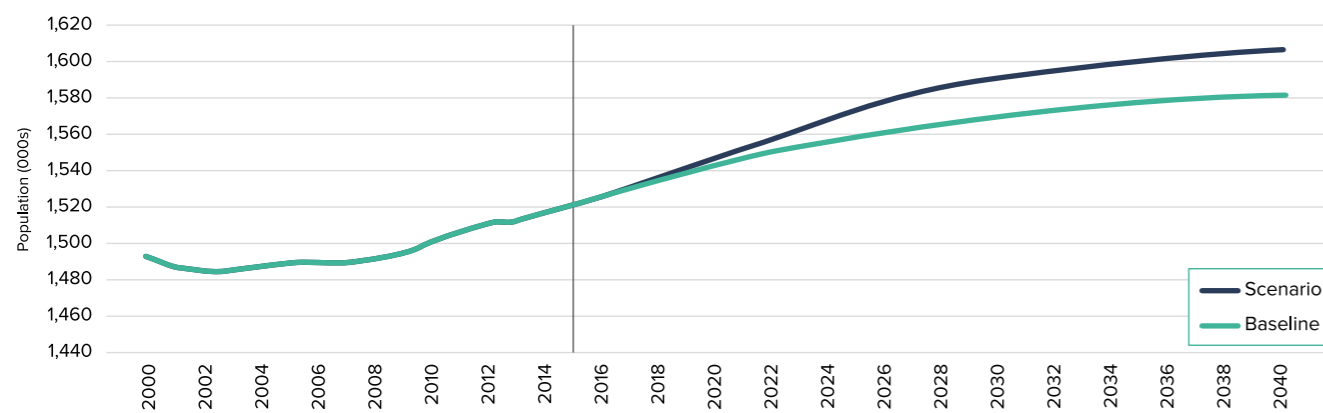


Figure 4b – Employment

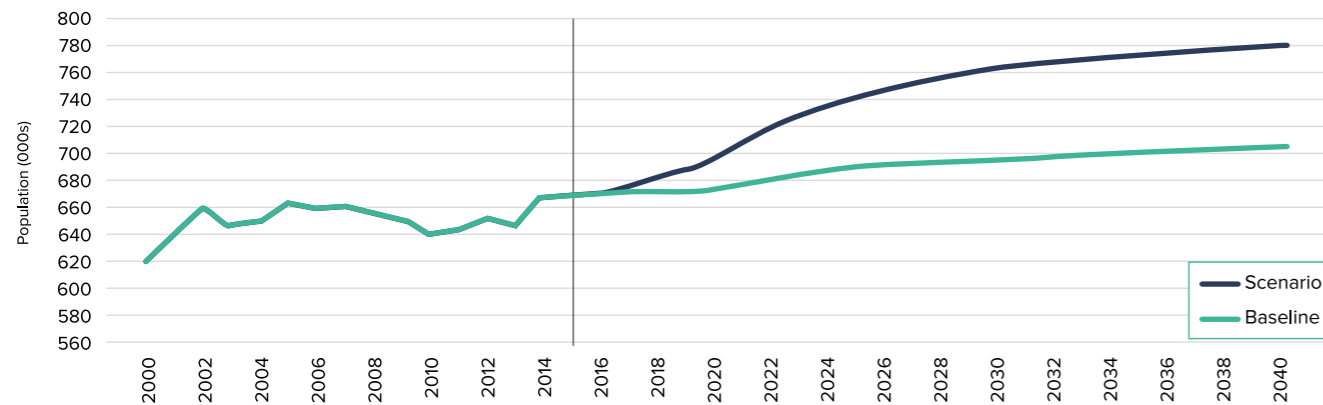
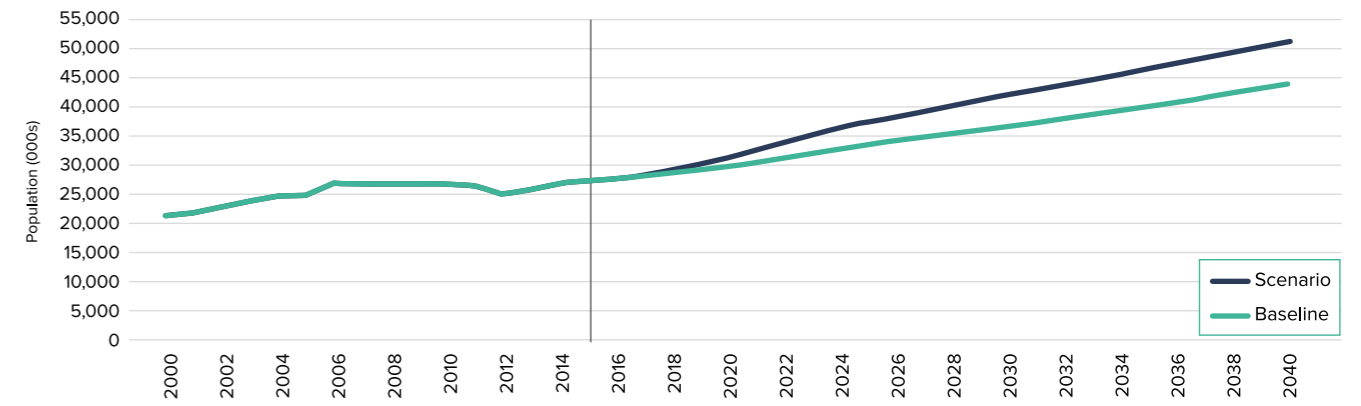


Figure 4c – GVA



Source: Liverpool City Region Forecasts (Liverpool LEP, Oxford Economics, 2016)

4.2 The current population of Liverpool City Region is 1.52m and the wider City Region economic area is 2.47m; by 2040 these will have grown to 1.61m and 2.63m respectively and there will be 113,000 more people in employment. This growth is not uniform; the highest levels of growth occur in Liverpool itself, which poses strong implications for the City Region's transport infrastructure and shows the importance of considering transport links not just within Liverpool City Region but also its wider area.

Figure 5 – Growth comparisons

Growth 2015–2040		
	Liverpool City Region	Liverpool District
Population	5.6%	8.5%
Employment	16.8%	25.4%

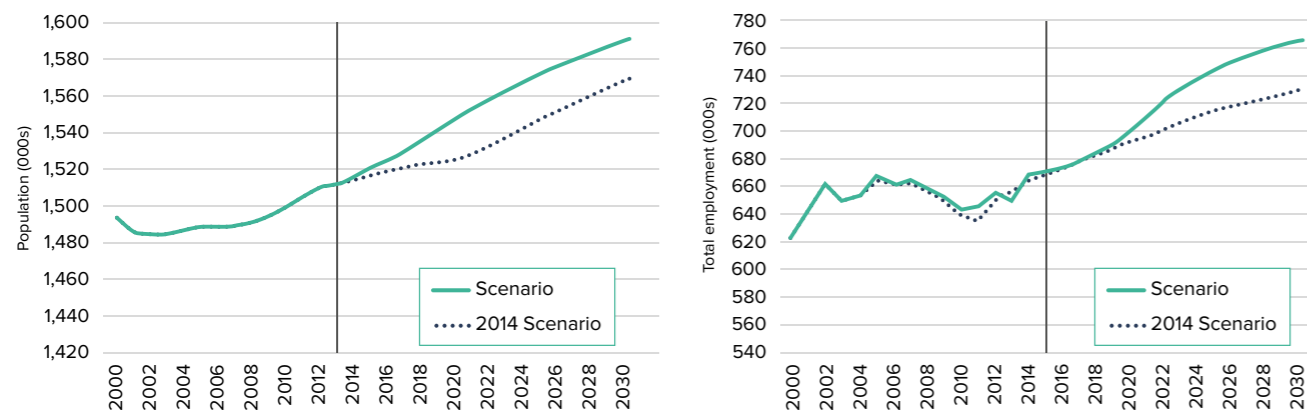
Source: Liverpool City Region Forecasts (Source: Liverpool LEP, Oxford Economics, 2016)

4.3 Furthermore, with employment overall forecast to increase at levels above population growth, there is a strong likelihood of increased inward commuting from those areas that form the City Region's hinterland. Some of this growth will be met by increasing the economically active population, but there remains a need to connect to other population centres, a growth that would not be sustainable if accessed by road. There is further external evidence to support this, with many of these findings mirrored by the data that underpins the NPIER.

4.4 We should not, however, consider changes in rail demand solely on the basis of changes in population and employment; part of the change in Liverpool City Region's economy owes much to the visitor economy that has been a lynchpin of growth over the past 10 years. In 2016, the City Region recorded almost 5m staying visitors and over 56m day visitors^{vi}; the LEP forecasts growth by 18% and 15% respectively over the next 10 years, placing specific demands and expectations on the transport network. These include the need for better long-distance connectivity, accessing the major international gateways, and enabling visitors to access specific locations of current or growing importance within the City Region.

4.5 This evidence base updates the original analysis that informed the Long Term Rail Strategy in 2014. These latest LEP forecasts, shown in Figure 6, suggest that both population and employment will grow faster than earlier envisaged. In the charts below, the dotted line indicates the previous forecasts and the solid line indicates the current forecasts. Sections 4.6 – 4.9 utilise the same Network Rail scenario of travel demand growth as in the 2014 Final Strategy Summary Report, but this does mean that the key messages are now of even more relevance.

Figure 6 – Original and updated scenarios for population and employment

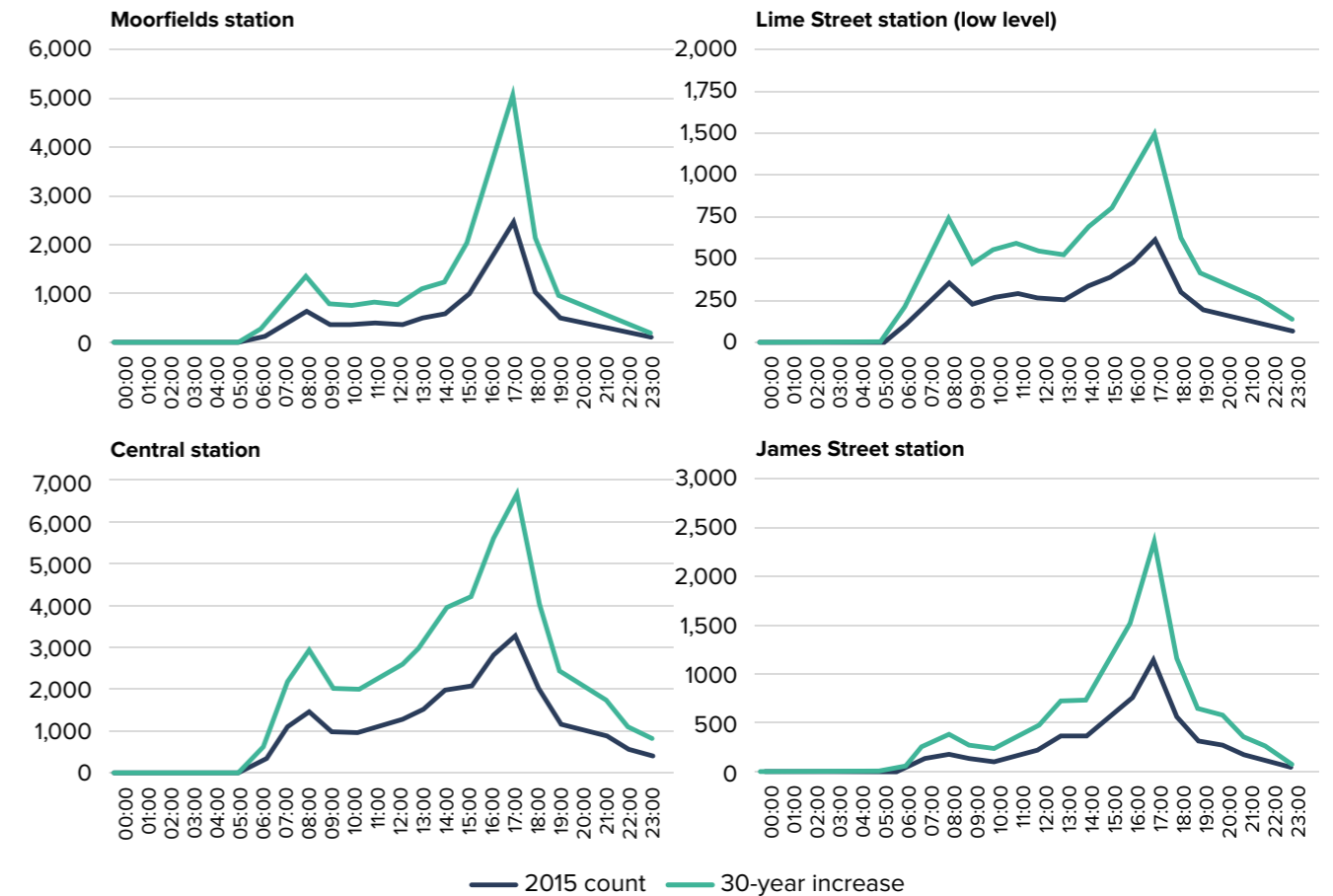


Source: Liverpool City Region Forecasts (Liverpool LEP, Oxford Economics, 2014 and 2016)

Growth in Travel

4.6 Using forecasts to see what passenger growth might occur can highlight particular constraints. This is amply illustrated by the work conducted by Network Rail, who produced a number of rail passenger growth scenarios in 2013^{vii}, projecting how the rail passenger market might change based on a range of different socioeconomic factors. The scenario that provides the closest alignment with the LEP forecasts is 'Prospering in Global Stability', which looked towards a 104% travel demand growth for Liverpool over a 30-year period. In Figure 7, this has first been overlaid on top of the latest city centre station counts, before next considering what this means for individual routes.

Figure 7 – Comparing current (2015) and projected (2045) patronage at city centre stations



Source: Merseyrail 2015 Station Counts overlaid by Network Rail's Prospering in Global Stability scenario

4.7 The analysis suggests that by 2045, a further 7,000 – 8,000 passengers could be boarding trains at the city centre stations during the 5pm-6pm evening peak. At a very rough level, without any measures to affect station use, this might mean 3,400 more passengers at Central, 2,600 more passengers at Moorfields, 1,200 more passengers at James Street and over 700 more passengers at Lime Street. With this in mind, consideration must be given as to what this could mean for station capacity. It is also worth considering the impact of HS2 and Northern Powerhouse Rail (NPR) on this, and it is likely that the growth in passenger numbers at Lime Street Low Level will accordingly be higher than that shown.

4.8 On a line-by-line basis, seated capacity on many lines into central Liverpool will be over-capacity in the next 30 years. The new Merseyrail rolling stock (Sections 5.12 – 5.14) will offer substantially more total on-board capacity for passengers (seated and standing), and analysis indicates that even with the 30-year growth rates this will be able to accommodate all passengers. Figure 8 shows the total capacity levels expected in 2045; this is based on counts conducted in 2015, the planned total capacity of the new Merseyrail rolling stock and the current refurbished electric City Line stock, elevated by Network Rail's 'Prospering in Global Stability' scenario for Liverpool.

Figure 8a – 2045 peak demand vs total capacity inbound (08:00 - 08:59)



Source: Train passenger counts, Network Rail 'prospering in Global Stability'

Figure 8b – 2045 peak demand vs total capacity inbound (17:00 - 17:59)



Source: Train passenger counts, Network Rail 'prospering in Global Stability'

4.9 In reality, the 104% growth scenario into Liverpool, forecast by Network Rail, is unlikely to be uniform; referring to the LEP forecasts and projected housing developments, at this stage there is the potential for a higher level of growth for:

- Journeys into the city centre from suburban Liverpool stations
- Journeys into the city centre from the St. Helens corridor
- Journeys into Liverpool City Region (not just the city centre) from its hinterland of northeast Wales, Cheshire West, Warrington, and West Lancashire

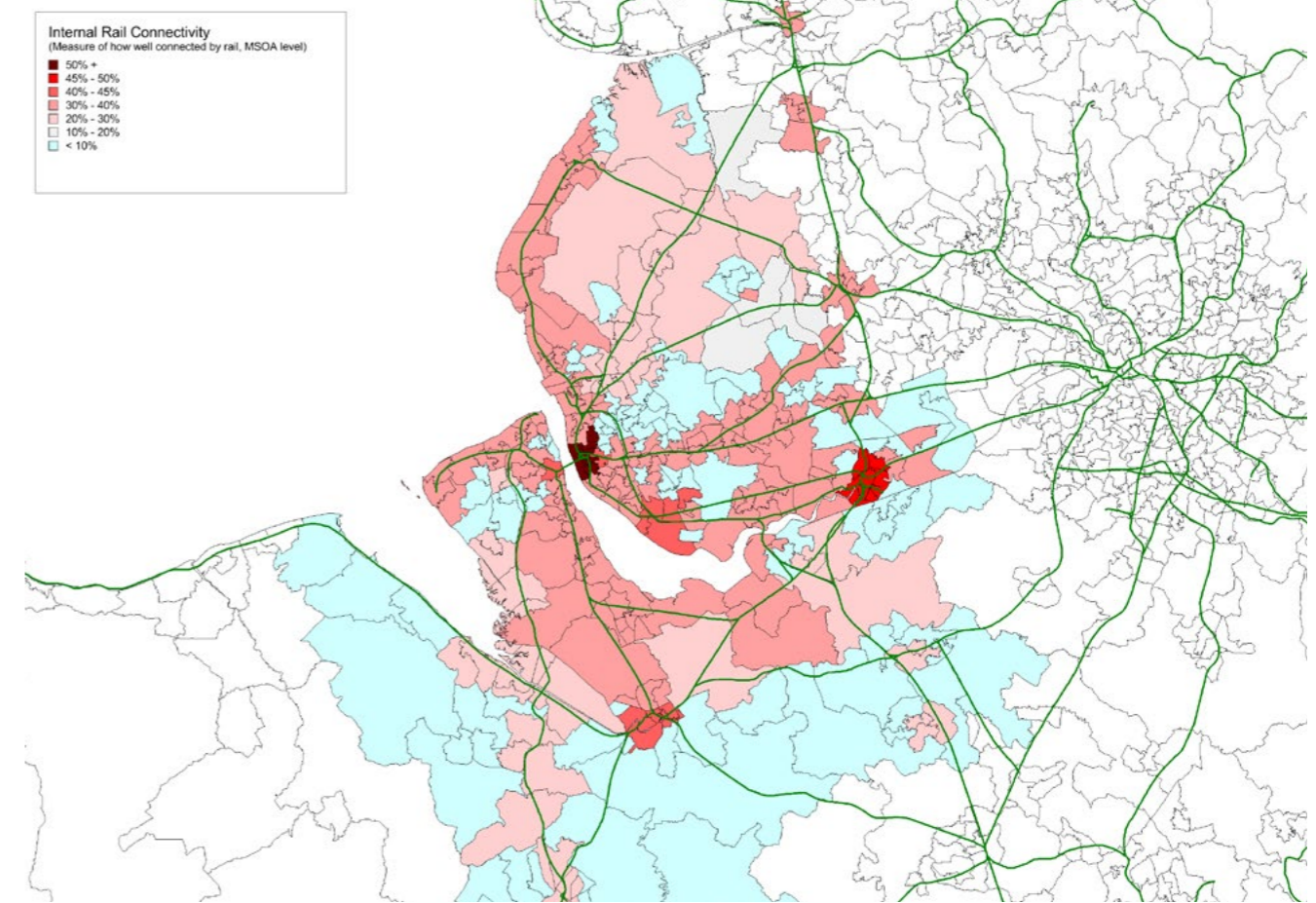
Connectivity

4.10 In addition to the potential constraints enforced by passenger growth, there are also connectivity constraints that, through limiting the ability to travel efficiently, may be making the City Region less attractive to inward investors, deterring the expansion of existing businesses, or limiting people's ability to access employment and training opportunities.

4.11 At a local level, Figure 9 shows how well connected Liverpool City Region and its wider functional area is within itself. Darker reds indicate better-connected areas, blue areas those that are less so. By and large, the city centre has a good level of connectivity, being connected at more than 50% of what would be possible in a theoretical ideal situation. Note that for some areas, especially those of a more rural nature, a lower level of connectivity might be expected. There are some points worth making:

- Certain corridors have a noticeably weaker connectivity than analysis suggests they deserve: this includes the Deeside area, Vale Royal, and the lines running northeast from Kirkdale towards Ormskirk and Kirkby
- Southport, Kirkby and St. Helens do not emerge as key centres (Figure 9) – something this type of analysis might be expected to show
- The lack of any current rail link to Skelmersdale makes for a particular area of weak connectivity
- No integration between the Northern, City and Wirral lines is a specific factor (among others) that weakens overall connectivity levels

Figure 9 – Internal connectivity of Liverpool City Region and its hinterland by rail



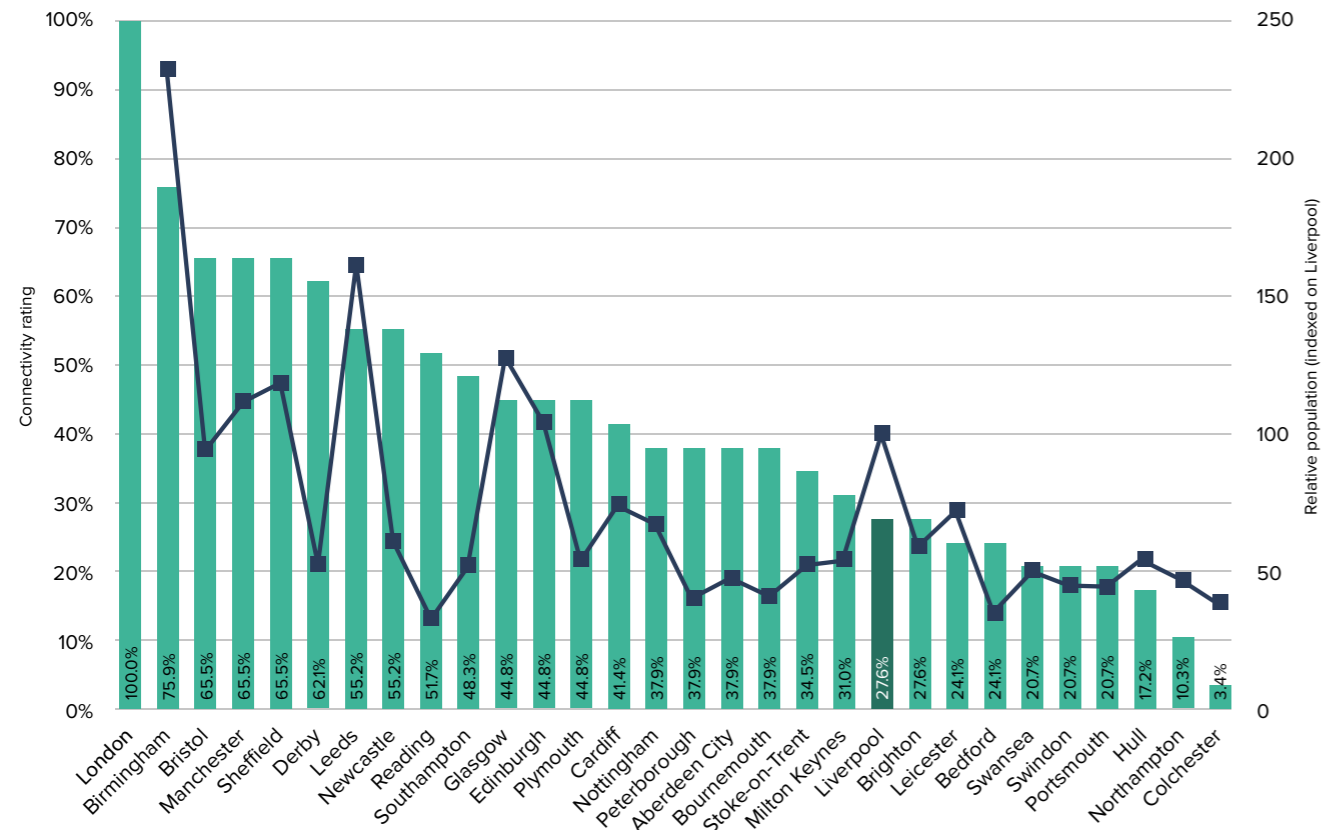
Source: Jan–May 2017 timetables at MSOA level

4.12 The above points should be considered against those areas highlighted previously as having the potential for a higher level of rail demand growth. Those areas that are particularly important to the growth of the City Region's economy, and that show signs of weak connectivity, might be considered of particular priority.

4.13 Looking at the wider picture, a key question is how well connected Liverpool is to other locations around Britain. Figure 10 demonstrates Liverpool's connectivity based on whether or not a direct service links the locations, with a comparator displaying population relative to Liverpool (shown in blue).



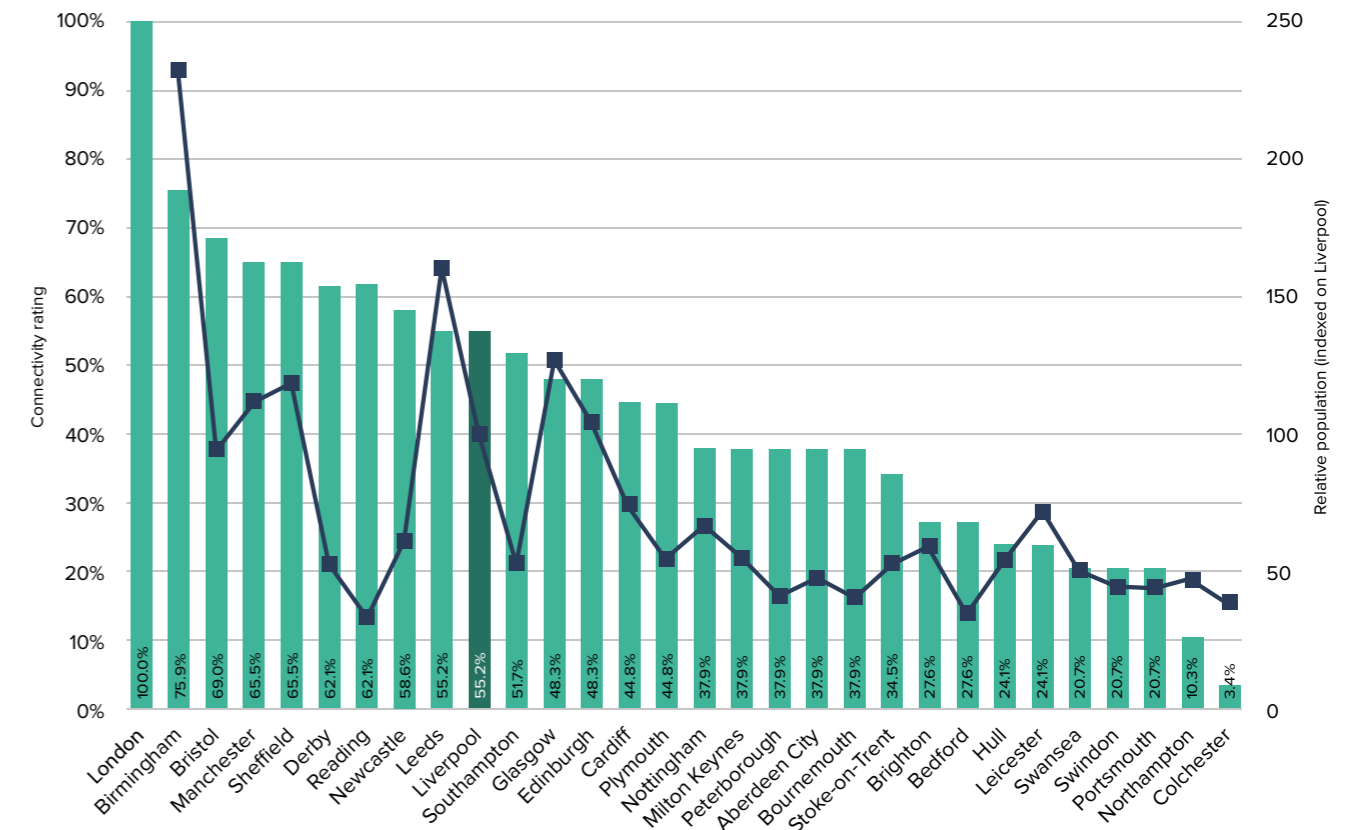
Figure 10 – Connectivity of key GB towns and cities



Source: Jan-May 2017 timetables

4.14 Liverpool is currently very poorly connected for a city of its size, being ranked 21st out of 30 locations with a connectivity rating of 27.6%. Committed franchise improvements by TransPennine Express to restore links to Scotland plus an expected call at Milton Keynes by the West Coast Partnership franchise would elevate this to 37%, but this is still not that competitive. Of the 20 cities with better connectivity, only seven have a larger population than Liverpool. Reading, for example, has almost double the level of connectivity but a third of the population, and Plymouth, with half the population, has over 50% better connectivity.

Figure 11 – Connectivity of key GB towns and cities with restoration of specific services to Liverpool

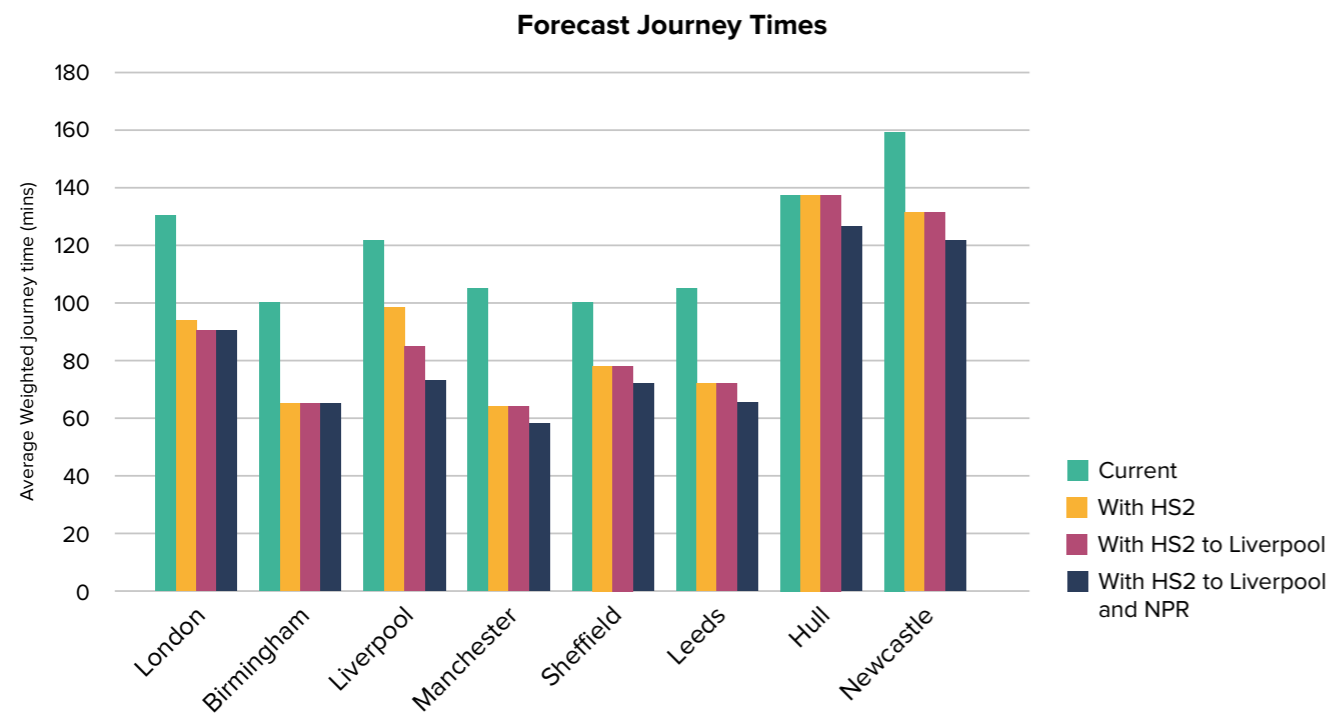


Source: Jan-May 2017 GBTT

4.15 Figure 11 shows what might be achieved by also restoring services from Liverpool to Bristol, Reading, Southampton and Cardiff. This would provide uplift in national connectivity, with substantial uplift in Liverpool, placing it on more of an equal footing with other core cities and so making the area more attractive to inward investors, tourists, etc. Indeed, when it comes to the visitor economy, the provision of direct rail services literally places a destination 'on the map' and is important for continued growth.

4.16 HS2 and NPR, if implemented as currently planned, would also impact on connectivity in terms of journey time to the six core cities of the north, as well as the important HS2 nodes of London and Birmingham. This can be understood by looking at the impact on average journey times between these cities; reduced journey times encourage greater agglomeration and make destinations more attractive to investors. Within this analysis, the reduction in the weighted average journey time for each city to all others is shown in Figure 12.

Figure 12 – Change in average journey times between core northern cities, Birmingham and London



Source: Calculated from GBTT, HS2 publications, TfN publications

4.17 There is a beneficial impact from HS2 for Liverpool City Region, although this is not to the same level of journey time reduction as seen by other cities. The impact of HS2 would, however, be substantially improved with the provision of a direct link to Liverpool, and the beneficial impact of a full, direct north-south HS2 and east-west NPR connection is shown in Figure 13.

Figure 13 – Beneficial impact of a High Speed 2 connectivity



Source: Economics Study: HS2, Northern Powerhouse Rail and the Liverpool City Region (Steer Davies Gleave, 2016)

4.18 There is a further enhancement in average journey times for the northern cities following the introduction of NPR. For Liverpool, and based on TfN's Conditional Outputs (Figure 2), gaining both a direct HS2 link and NPR could mean an improvement of its average journey time of 41%.



Challenges and Opportunities

Local Strategic Context

- 5.1 The Liverpool City Region Growth Strategy, 'Building our Future', articulates how transport supports economic growth and recognises the importance of a high-quality rail network in improving connectivity for investment and business needs and access to work, education and training. It focuses on three strategic growth pillars:

Figure 14 – Liverpool City Region Growth Strategy: growth pillars



Productivity

Supporting economic growth in the City Region by increasing employment, levels of productivity and investment through the better movement of goods and people.



People

Supporting access to opportunity by connecting those who wish to access employment, training, education and further learning opportunities; and supporting accessibility to fresh food, leisure and healthcare.



Place

Supporting place quality by drawing our energy from a range of low-carbon energy sources, with vehicles powered by alternatives to fossil fuels and with increased active travel opportunities.

- 5.2 These growth pillars will facilitate the focused allocation of investment, with partners across Liverpool City Region aligning their existing resources to support them. Clearly, for rail investment to have maximum impact, it is essential the work packages are aligned with these pillars.

- 5.3 Sitting below the Growth Strategy are the Merseyside and Halton local transport plans (LTPs), which provide the statutory framework under which policies and plans are taken forward to guide the future provision of transport. The Transport Plan for Growth brings the LTPs together and details how transport is an enabler of growth; it connects people and places and is crucial to the economic success of the City Region, providing a strategic direction for transport that supports growth, regeneration and carbon reduction, and is the overarching framework under which the Long Term Rail Strategy is being delivered.



- 5.4 Another important aspect of the Long Term Rail Strategy is consideration of the whole-journey approach; recognising that if a multimodal integrated journey is broken down into its constituent parts, encouraging active travel choices for the shorter elements (e.g. the journey to or from the station) will make a valuable contribution to delivering a low-carbon economy that supports economic growth. In addition, this will help to ensure focus is given to customer needs in the widest sense, such as enhanced information provision and an attractive fares and ticketing offer. While the Long Term Rail Strategy is focused primarily on infrastructure enhancements, these important workstreams will be progressed at a local level through delivery of the Transport Plan for Growth, and at sub-national level by Transport for the North.

- 5.5 This holistic approach is also a fundamental aspect of the Liverpool City Region Local Journeys Strategy (due for publication in 2018) that sets out a vision for safe, well-connected places and access to interchanges and centres, which encourage sustainable travel choices for local journeys. Structured around the three growth pillars, the Local Journeys Strategy will help us ensure that our planned improvements are continually focused on those areas that are most critical to delivering economic growth.

Freight

- 5.6 Since the Long Term Rail Strategy was first developed, work carried out by TfN has highlighted the importance of the freight sector to the northern economy¹⁰ and the role of rail in particular in capturing a greater market share for the northbound goods entering the country via the south-coast ports.
- 5.7 The Liverpool City Region Freight and Logistics Strategy (also due for publication in 2018) builds upon the recognition given to the Maritime and Logistics sector in the Growth Strategy and develops further the priorities set out by TfN. The majority of goods entering the UK do so from the south-coast ports, and while some travel to the north via rail, there is scope for much greater modal shift from road. Securing this shift requires additional capacity on the West Coast Main Line (WCML), and, although the northwest is already served by rail-linked distribution sites in Ditton and Trafford Park, an expansion in the number of strategic rail freight interchanges in the north is planned. Improving rail connections and logistics sites has particular benefit for Liverpool City Region, as its peripherality for national distribution means that it is only by utilising lower-cost forms of transport – including rail and water – that the region can secure additional market share.
- 5.8 In addition, the opening of the Liverpool2 deep-sea container terminal^{viii}, allied with the widening of the Panama Canal, has the potential to significantly alter the economic geography for freight in the UK, opening up the opportunity for an increasing amount of goods from North and South America, China and the Far East entering the country via Liverpool. The economics of freight transport means that many of these goods, destined for consumption in the north, will be transported via road. Some, particularly where the destination is in Scotland, on the east side of the Pennines or in the north midlands, could travel efficiently and sustainably by rail, but this would require an improvement to the rail terminal within the port, an increase in capacity on the Bootle Branch Line, and paths both north-south and east-west on the national rail network.

- 5.9 The Liverpool City Region Freight and Logistics Strategy highlights the impact the developments at the port are likely to have on the rail network, with the greatest increase in demand for paths expected on the Bootle Branch Line, the Chat Moss route and its connections northbound and southbound onto the WCML and eastbound beyond Earlestown to Manchester. In general terms, in addition to the existing hourly freight path from the Port of Liverpool, another hourly intermodal rail freight path would be required to Earlestown and then south down the WCML towards the Northampton area; this is likely to be required quite rapidly to allow the port to develop services that are associated with the Liverpool2 terminal. A further hourly path from the port across the Pennines would also be required.
- 5.10 One path per hour from Garston/Ditton to the WCML is likely to be sufficient, whereas an additional hourly path would be needed for traffic to/from the rail-linked distribution parks developed to the east of the WMCL. Finally, some new daily paths would be needed to accommodate some additional traffic from the Ellesmere Port and Knowsley areas as traffic develops.

5.11 The Liverpool City Region Freight and Logistics Strategy has identified the following key objectives:

- Network capacity optimisation in line with Network Rail's aspirations, including the use of 750-metre trains on intermodal routes and the move from five to six day-per week operation, as well as continued changes to maintenance regimes.
- Securing additional paths for freight trains on the WCML. The analysis of rail freight demand has indicated that there is a need to secure three paths per hour in each direction north of Wigan, six between Wigan and Crewe, and six south of Crewe. The development of HS2 may provide some additional capacity in the longer term on the WCML if it leads to a net reduction of passenger services on the existing tracks. A further effective local measure may be provided by NPR providing a new high-speed passenger link between Liverpool and Leeds, linking to HS2, which could further contribute to relieving the WCML north of Weaver Junction.
- Securing additional paths for freight trains crossing the Pennines. The analysis has also indicated a need for two paths in each direction along the Chat Moss route. Similar to the situation on the WCML, the delivery of NPR may provide some additional freight capacity in the longer term on trans-Pennine routes if it leads to a net reduction of passenger services on the existing tracks.
- Undertake further work with Network Rail to examine options for removing the key freight bottlenecks on the LCR rail network located at Bootle Branch Line, Earlestown West Junction, Winick Junction and Weaver Junction to enable greater opportunities for pathing and hence growth in freight.

Merseyrail Rolling Stock

5.12 The procurement of the rolling stock has been concluded, with Stadler identified as Merseytravel's long-term partner. Stadler will provide a new fleet of 52 four-car units, extensive modernisation of the network's depot facilities – including construction of a new maintenance building at Kirkdale – and undertake all rolling stock maintenance as a subcontractor to Merseyrail Electrics (following the transfer under TUPE regulations of its current engineering and cleaning workforce). The introduction of the new trains will:

- Provide 60% increased passenger-carrying capacity
- Enable journey times to be reduced by up to 10% through substantially improved acceleration and braking
- Fully address the findings of the Rail Accident Investigation Branch report^{ix} into the fatality at James Street in 2011
- Provide industry-leading accessibility for a Victorian railway by means of reduced floor height and intelligent sliding steps at each passenger doorway
- Offer much-improved passenger information
- Reduce energy consumption by over 20%
- Provide a fourfold increase in reliability
- Offer a considerable improvement in passengers' experiences, including allowing on-board staff to focus on passenger-facing duties

viii A £400 million in-river container terminal, which will allow post-Panamax vessels of up to 13,500 TEU to call at the Port of Liverpool

ix RAIB: Fatal accident at James Street station, Liverpool 22 October 2011 (Report 22/2012 – October 2012)

5.13 Merseytravel will be the owner of the new fleet, which will allow it to be customised to meet the specific needs of our passengers and the characteristics of the network. In addition to the works with Stadler, investment of around £90m is being undertaken with Network Rail to ensure that the railway's infrastructure is configured to maximise the benefit of the new rolling stock.

The key components of this works are:

- Tripling the capacity of the power supply system to address current weaknesses and enable the reduced journey times
- Regularising the relationship between the track and the platform to enable the improved accessibility
- Works to accommodate the slightly longer new rolling stock

5.14 The programme has been designed as an integral part of the Long Term Rail Strategy. The following features have been incorporated to achieve this:

- Ability to convert the rolling stock to dual voltage
- Ability to retrofit the European Rail Traffic Management System
- Options to procure up to an additional 60 units of rolling stock
- Depot capacity and ability to incorporate a short test track with 25kV electrification
- The potential for the deployment of alternative technologies

Network Constraints

5.15 In 2014, the Long Term Rail Strategy identified a number of constraints on the development of the rail network. Appendix 1 details these original constraints and highlights how they have since been addressed. The current identified constraints, as supported by the updated evidence base, are detailed below.

Capacity Constraints – *restricting the ability to run extended services to meet demand*

- 1 Merseyrail suffers from passenger capacity problems at certain times and locations, which will substantially constrain passenger growth at Liverpool Central Station due to limited platform space and the need to turn around services. (Figure 7; Section 4.7)
- 2 There is a limit to the number of trains per hour that can be used on busy sections of the Merseyrail Network. For example, the required maximum of 18-20 trains per hour on the Northern Line between Sandhills and Liverpool Central and the ability to provide additional cross-river services (for instance from Wrexham) cannot currently be readily accommodated.
- 3 Despite recent remodeling, and the further works planned for 2018, the throat on the approach into Liverpool Lime Street will continue to act as a constraint on the number of services per hour that can access the station. This is due to the limited number, and the current location, of cross over facilities on the Lime Street approach.
- 4 The West Coast Mainline between Weaver Junction and Crewe is heavily utilised at present, with a lack of available rail paths limiting the number of services per hour that can run between Crewe and Liverpool Lime Street.
- 5 Single-end termini create significant capacity issues on the Merseyrail network, as they create longer turnaround times and create conflicts between inbound and outbound services on single-track sections. Chester, Ormskirk, Kirkby and Hunts Cross are identified as particular constraints. (Figures 8a/8b; Section 4.8)
- 6 The combination of extra freight trains, plus a parallel growth in passenger services driven by the Northern Hub passenger service expansion (the completion date for which is not currently known due to elements of project being deferred, such as platform 15/16 at Manchester Piccadilly).



Connectivity Constraints – lack of geographical coverage of network

- 7 The network does not always link places where people live with employment sites, and does not always offer sufficient service frequencies to allow seamless commuting where it does. (Figure 9; Section 4.11) For example, there are no rail services between Skelmersdale and Liverpool.

- 8 There are no direct services between Liverpool and southwest England or south Wales.

- 9 There is a poor frequency of services to London (when compared with other cities of a similar size and population).

- 10 There are poor links between Liverpool and other key cities around the UK (when compared to other cities). (Figure 10, Section 4.13)

Infrastructure, Facilities and Rolling Stock Constraints

- 11 There are operational conflicts at Hunts Cross West Junction between Merseyrail services and Cheshire Lines Committee (CLC) services, at Wavertree junction due to the merging of routes, and at Sandhills due to the confluence of Northern lines. There are also line-speed constraints on the Chester line in the Bache area, which can perpetuate delays and limit the number of services per hour that can currently run through these areas.

- 12 The mix of semi-fast and stopping services on the CLC and Chat Moss lines constrains timetabling options and restricts some stations to a single service per hour.

- 13 There is a lack of Park and Ride capacity at a number of stations on both the Merseyrail and City Line networks. This could be suppressing demand, while impacting on local congestion and air quality.

- 14 A number of routes require substantial service improvements. For example, infrastructure constraints exist on some of the key diesel lines that serve peripheral parts of the City Region. Southport to Wigan, Preston to Ormskirk, and Wigan to Kirkby all have sections of single track, or otherwise constrained running, that limit the number of services that can effectively run on each route.

- 15 There is a significant capability gap for W10-gauge container freight between the Port of Liverpool and the wider rail network.

- 16 The current prevalence of split ticketing as a result of the availability of cheaper advance-purchase singles can lead to a significant skewing of demand data obtained via the Lennon database. This in turn can cause issues in planning effective services and meeting demand, e.g. in Preston, underrepresenting the flows between Liverpool and Scotland and impacting on Business Case development.

Funding Constraints

- 5.16 In 2014, it was considered that “with huge rail infrastructure schemes such as the proposed HS2 railway (with mooted Northern Connectivity components and early discussion of HS3), ongoing and wide spread electrification, large-scale expansion of the Metrolink network in Manchester, and many other current schemes, there is a strong precedent for Liverpool City Region to **seek significant investment** in its rail infrastructure. The scale of the proposals in this strategy is not out of proportion with the needs of a growing city region and comparable investment being made elsewhere”^x.
- 5.17 Central government remains a major source of funding for rail improvements on the network, with funding made available to cover both the maintenance and renewal of the current network through the publication of the High Level Output Statement (HLOS)^{xi}. The issues identified through the reviews of Network Rail’s performance in the delivery of enhancements (Sections 3.16 – 3.25), and the subsequent postponement of significant national enhancement programmes of work, is likely to influence the government’s view of national rail priorities, and hence the level of funding made available for enhancements in future Control Periods. This will have an impact on how and where funding is allocated, and whether the government prioritises enhancement of the rail network within Liverpool City Region over other nationally significant plans. It is expected that the HLOS will focus more on Network Rail’s objectives in respect of operating and maintaining the railway, including renewals with enhancements dealt with separately by Government, as projects are brought forward for consideration.

- 5.18 Furthermore, as highlighted in Sections 3.1 – 3.7, while devolution offers many freedoms, the Single Investment Fund (SIF) process puts limits on the level of local capital funding available, and is still in its infancy. As such, it remains uncertain how rail infrastructure will be able to secure funding in future years when considered in competition with other regional priorities, as well as the extent to which transport investment can enhance economic and regeneration proposals.
- 5.19 Another consideration is the complex, costly and protracted gestation of rail projects as a consequence of the rail industry structure, Network Rail’s processes and role as System Operator (SO), and the regulatory planning process, all of which are somewhat at odds with the short-term delivery timescales and the challenge for development funding. While recognising the validity of Network Rail’s processes for managing safety risk and cost escalation, it can take a number of years to reach project implementation, and the associated development costs in the early stages are in themselves not unsubstantial. Network Rail has indicated that its aim is to be more responsive to stakeholder requirements going forward, with greater devolution within routes, collaboration across routes and the move to continuous modular strategic planning within the SO function, for example. Merseytravel will therefore continue to work closely with Network Rail to streamline the delivery process.

^x Long term Rail Strategy – Final Strategy Summary Report (August 2014)

^{xi} The HLOS sets out what the Secretary of State for Transport wants to be achieved by railway activities during a given control period and the Statement of Funds Available outlines the Government’s view of how much funding it can provide to support these activities. The HLOS is a statutory requirement introduced by the Railways Act 2005.

5.20 This is in addition to the need to develop comprehensive business cases before investment can be approved, either locally by the Combined Authority or when applying for government funds. Business cases are developed in line with HM Treasury’s advice on evidence-based decision making and must use its best practice five case model approach. This approach shows whether schemes:

- are supported by a robust case for change that fits with wider public policy objectives – the **strategic** case;
- demonstrate value for money – the **economic** case;
- are commercially viable – the **commercial** case;
- are financially affordable – the **financial** case; and
- are achievable – the **management** case.

5.21 It is important to acknowledge that Network Rail is exploring new ways of financing schemes that support the growth in passengers and freight on the railway, the intention being to encourage innovation and speed up the delivery of improvements.

5.22 The role of TfN, and its establishment as a statutory body, is also likely to have a bearing on the prioritisation and funding of sub-national improvements on the rail network. At present, the extent to which TfN will hold delegated or devolved powers is yet to become clear.

5.23 In the Transport Investment Strategy, the government acknowledge that *“transport infrastructure comes at considerable cost, and must take place alongside other priorities. We cannot afford to tackle every problem, or seek to realise every potential, through investment. Our ambitions must be balanced against the need to maintain fiscal credibility. In this context, it is right to consider how we will keep future transport investments within budget; how we can find alternative and innovative sources of funding; and how we make sure we choose the best schemes which will have the greatest impact for transport users across the country.”*

5.24 The government also acknowledges the need to take account of the balance of spending between different regions, and assess investments on their contribution to creating a more balanced economy. As such, it is committing to develop a “rebalancing” assessment toolkit for use as part of the strategic assessment of future investment programmes, which will require programmes to be judged on how they contribute to creating a more balanced economy as part of the overall assessment of their strategic case.

5.25 In short, it is timely that we consider not only the revised economic projections and the updated network constraints, but are pragmatic in terms of what can realistically be achieved, even acknowledging the long-term nature of this Strategy.



Strategy Delivery

6.1 The process of developing the Long Term Rail Strategy (see Figure 1) originally identified 12 packages of schemes drawn from an initial pool of more than 150 individual projects. The schemes that formed each package and that are, in the main, retained here were shortlisted via an appraisal process (see Sections 2.4 – 2.6) that assessed each in terms of its fit with strategic aims and objectives, ability to engender mode shift, environmental benefits, and estimated level of deliverability including affordability.

6.2 The packages themselves addressed a number of network constraints, capacity issues and latent rail demand, and included service enhancements, the introduction of new rolling stock and extension of the Merseyrail network. The original packages are listed in Figure 15, with full details on each shown in Appendix 2.

Figure 15 – The original 12 work packages

- | | | | |
|---|------------------------------------------------------|----|------------------------------------------------------------------|
| 1 | Improving National Passenger and Freight Connections | 7 | Improved Connections from Chester and Ellesmere Port |
| 2 | Merseyrail Growth Enabling | 8 | Ormskirk – Preston Enhancements |
| 3 | Liverpool City Centre Passenger Capacity | 9 | Kirkby – Wigan Line Improvements |
| 4 | City Line Enhancements | 10 | Borderlands (Wrexham – Bidston) Line Enhancements |
| 5 | Cheshire Lines Committee Line | 11 | Conversion of Freight Lines to Mixed Passenger and Freight Usage |
| 6 | Halton Curve | 12 | Selected New Stations |

6.3 While specific constraints still exist, along with the latent demand for rail services, which specific projects aim to address, the issue of passenger capacity has largely been addressed – at least on the Merseyrail Northern and Wirral lines – through the planned introduction of the new fleet of vehicles that has a significantly greater capacity. While new trains will be able to transport increasing numbers of people, as demand grows there will be a need for those numbers of passengers to be accommodated within the existing rail network and, importantly, at stations.

6.4 This does bring into focus the issue of Liverpool Central which, through the work more recently undertaken as part of Network Rail’s Liverpool City Region Strategic Rail Study^{xii}, has reinforced earlier analysis that the station is increasingly close to capacity. At present, in excess of 60% of journeys start or finish in Liverpool, with Liverpool Central being the most used station, in addition to its function as a primary interchange. The LCR Strategic Rail Study stated that there would be a need for an expansion of the station in CP7 at the latest, and identified the high number of passengers using two platforms as an issue.

6.5 Given the potential impact of the station, and its ability to operate normally and accommodate passenger demand, it is appropriate to consider all of the other network constraints within the context of their impact upon Liverpool Central. Development work, which is already underway, will review the capacity required to deliver an effective service in the future. This work will take into account the expected demand for rail services as identified in the Liverpool City Region Strategic Rail Study, but with assessment of the impact of the potential interventions identified within the Long Term Rail Strategy upon that capability.

6.6 There have also been a significant number of developments since the Strategy was first developed. Merseytravel have initiated three Local Growth Fund Schemes (with funding secured as part of the 2014 Growth Deal) covering the improvements at Newton-le-Willows, a new station at Maghull North and the re-opening of the Halton Curve to regular passenger services. The High Speed Rail programme has been developed further and the North West electrification programme^{xiii}, insofar as it affects Liverpool City Region, is nearing completion.

6.7 The Bowe, Hendy and Shaw reports (Sections 3.16 – 3.25) have also had a significant impact on the delivery of rail projects. With the increasing cost of projects, and the increasing demand for improvements across the network such as the Northern Hub, TransPennine Route Upgrade and capacity challenges in general at London and southeastern stations, it is clear that proposed projects will not only need to have a very strong business case if they are to be taken forward, but also be affordable in the context of other national priorities.

6.8 With all this in mind, there is a need to review the overall programme of projects contained within the Long Term Rail Strategy, take stock of what has already been achieved, and to consider how the identified interventions might be prioritised within a more realistic timeframe. It is also an opportunity to incorporate a number of projects that were not included in the initial Strategy, including HS2 and NPR, and to ensure that the growing importance of cross-border transport demand is incorporated. The Long Term Rail Strategy now moves away from the package approach for the reasons outlined above and introduces three specific groupings:

1. Projects that have been delivered or are committed to delivery
2. Projects that are linked to Liverpool Central or require an upgrade at Liverpool Central to be delivered
3. Projects that can be delivered which have limited or no impact on Liverpool Central

xii Network Rail: Liverpool City Region Strategic Rail Study – Long Term Planning Process (October 2016)

xiii Over £1bn of rail service improvements to speed up journeys, create rail links and improve stations as part of the Great North Rail Project

Group 1: Projects that have been delivered or are committed.

Merseyrail Rolling Stock

6.9 The current Merseyrail rolling stock will be replaced with new units that will be able to both carry more passengers and reduce journey times on the network. The vehicles, which will be expected to commence delivery from 2020, will have passive provision for dual-voltage operation; the potential for battery operation will be investigated in the future. In addition, the train/platform interface will be improved, delivering a safer and more accessible railway. As part of the project, Network Rail is upgrading the power supply to meet the needs of the project. The project will also have a bespoke Depot Strategy that will ensure the long-term durability of the new trains.

Halton Curve Reinstatement

6.10 Halton Curve is a scheme that will deliver large benefits for Liverpool City Region, its wider travel-to-work area and north Wales. Funded predominantly through the Local Growth Fund, the £15m project the service will initially, provide a two-way operation between Chester through to Liverpool, stopping at Liverpool South Parkway for bus connections to Liverpool John Lennon Airport. Discussions are ongoing with Transport for Wales to extend this service beyond Chester. As originally envisaged, this work was combined with the resignalling of the Weaver-Wavertree Junction line section. Work has commenced and the new service is expected to be in place by December 2018.

6.11 Merseytravel will continue to work with Cheshire West and Chester, Rail North, the DfT, the Welsh government and the rail industry to identify and support capacity improvements that will allow for services to operator further afield, such as along the north Wales Coast and through to Cardiff.

Newton-le-Willows Refurbishment

6.12 Newton-le-Willows station is in the process of being completely revamped. It will be fully accessible with lifts to both platforms and a new underpass linking the north and south side. The car park will be expanded to over 400 spaces and the station will include a new ticket office and bus interchange.

Maghull North new station

6.13 A new station, situated between Maghull and Town Green on the Ormskirk Line, will be delivered by May 2018. The new station will serve a large community which currently does not have direct rail access, will be fully accessible and will have a 140-space car park.

New rail service between Chester and Leeds via Newton-le-Willows

6.14 As part of its franchise commitment Northern Rail will be operating a new service between Chester and Leeds, via Runcorn East and Newton-le-Willows, from May 2018. This will be a Northern Connect service with the intention of providing a more limited-stop interurban service.

Development of long-distance service connections

6.15 Merseytravel has worked with Rail North and TransPennine Express to provide a new direct link to Glasgow in December 2018 that will be followed by a new direct link to Edinburgh in December 2019.

Group 2: Projects which are linked to, or require an upgrade at, Liverpool Central

Introduction

6.16 Liverpool Central Station is close to capacity on the Northern Line platform and concourse area. As such, Liverpool Central is identified as a key priority for the City Region in taking forward any further improvements on the rail network. Merseytravel is currently undertaking a development review at Liverpool Central to fully understand the impact of the expected growth in rail demand, as identified in the Network Rail Liverpool City Region Strategic Rail Study 2017. The study will also consider the release of suppressed demand that will result from the introduction of the new rolling stock and the potential impact of other interventions on the network. Indeed, one of the conclusions of the Study was that the delivery of new rolling stock is the correct strategic solution for accommodating growth of the Merseyrail network.

6.17 This section considers the projects that could have a direct impact on the city centre, and particularly Liverpool Central. This incorporates not only direct interventions on the city centre stations but also includes potential extensions to the network. The majority of rail users on Merseyrail start or finish their journeys in Liverpool city centre.

Liverpool Central

6.18 Merseytravel is undertaking a development review that will address the capacity constraints at Liverpool Central. The study will consider the space required to deliver an effective solution at Central and is expected to assess a number of options and identify the preferred solution to be taken forward. The potential solutions include:

- New station required at an alternative location
- Expansion of the current station; this could be a widening of the current platform or the introduction of a new platform
- Expansion of the concourse area
- Interventions at Moorfields and James Street

Lime Street

6.19 Lime Street is currently undergoing a remodelling that will expand the number of platforms from nine to 10. This solution, while addressing the immediate issues through to 2026, does not address the longer-term issues. Merseytravel will undertake the necessary development work with Network Rail to identify the future requirement for a city centre station. This could include extending the platforms in the current location or relocating the station.

Wapping Tunnel Development

6.20 An initial feasibility study has been carried out to review the potential of bringing the Wapping Tunnel back into use for passenger services. This would build on the recent Network Rail electrification project and allow the operation of high-speed Merseyrail Electric services to operate on the City Line network. The study identified that there is potential to extend City Line services through to Liverpool Central as an alternative to Lime Street via the Wapping Tunnel. This would significantly improve connectivity between the Northern and City Line services while relieving the pressure on Lime Street. It would, however, increase the demand at Liverpool Central. As part of the development work the possibility of providing a new station, which would provide a direct link to the revitalised Knowledge Quarter, was identified.

Skelmersdale Extension

6.21 Merseytravel is currently working with Lancashire County Council and Network Rail to develop the Merseyrail network from Kirkby through to Skelmersdale. This work is expected to be completed in 2019. Further development work will be required before this project is implemented. While third-rail electrification is being considered currently, alternatives will be considered later in the development process. A new station at Headbolt Lane to serve the Northwood area of Kirkby is an integral part of this proposal. The potential to extend the network further through to Wigan will need to be developed separately.

Extending Merseyrail services through to Liverpool John Lennon Airport

- 6.22 The creation of a direct fixed link from the Merseyrail network through to Liverpool John Lennon Airport (LJLA) would enhance the connectivity of the region to the airport. While work was undertaken on this in the mid-1990s this work is now out of date and a new study, which could identify the feasibility of the project and the optimum route to deliver this, is required. LJLA has undertaken long-term business planning based on projections of future passenger demand and potential for cargo and other services to be developed. LJLA's forecasts of passenger growth indicate potential to accommodate 7.8m passengers per annum by 2030 and 11m by 2050. It is anticipated that this level of growth will be required in order to proactively support a robust business case.

Cheshire Lines Committee (CLC) Route Enhancements

- 6.23 The electrification of all or part of the CLC route, and the potential extension of Merseyrail Electric services from the Northern Line onto this route, would enhance the connectivity of the wider region. An initial feasibility study is required to identify the potential to deliver this intervention. Linked to this is the desire to provide improvements on the longer-distance services to Sheffield and beyond. This will be raised as part of the East Midlands Trains franchise consultation.

Electrification of the Chester-Shrewsbury and Chester-Warrington Lines

- 6.24 While predominantly outside of the City Region, this project would significantly increase connectivity of the wider travel to work area for Liverpool City Region. While supporting this, it must be recognised that current electrification proposals have been deferred, and that the government is looking for alternative methods of delivering the benefits electrification of the network would bring, such as the use of bi-mode vehicles.

Electrification of Ellesmere Port to Helsby Line

- 6.25 There is a reasonable business case for extending the Merseyrail service through to Helsby. However, this is likely to be best served by the use of Merseyrail battery powered- enabled services. This will be tested on the new units in 2020.

Ormskirk-Preston enhancements

- 6.26 This incorporates both electrification from Ormskirk through to Preston and the potential reintroduction of one or both of the Burscough Curves. In view of the deferral of electrification proposals, and the relative low ranking of the electrification proposal in the Northern Sparks report^{xiv}, it is unlikely that the electrification proposal is expected to be taken forward in the near future. In addition to this, the business case for extending electrification to Burscough, and the introduction of the southern Burscough Curve, is poor. The potential use of battery-powered Merseyrail units may improve the business case for both proposals. This will be reviewed after the Merseyrail units have been tested for battery operation in 2020.

Borderlands Development

- 6.27 While the aspiration is to fully electrify the line, and incorporate it into the Merseyrail network, this is very much a long-term aspiration. In the interim period, the aim is to develop the line through the introduction of an improved diesel service. Merseytravel will work closely with relevant cross-border organisations such as Growth Track 360 to bring this about. There are a number of new station proposals for the line, the principal being a new station close to the Deeside Industrial Park, which would improve the ability of the workforce to access the site via public transport.

Bootle Branch Electrification

- 6.28 A long-term proposal that will need to be considered alongside the developing freight strategy for the region and the expansion of the Port of Liverpool. The proposal envisages the introduction of passenger services that will operate from the Bootle Branch into Lime Street. An initial study is required to understand fully the freight requirements for the line and what the realistic potential for operating passenger services over the line is.

North Mersey Branch

- 6.29 A long-term proposal; this envisages a new service operating from Ormskirk via Bootle into Liverpool. It was reviewed as part of the Merseyrail Route Utilisation Strategy in 2009, which identified a poor business case.

New Stations

- 6.30 Liverpool City Region has developed a New Stations assessment tool that reviews the potential for 25 new station locations across the network, mostly identified in 2014 and predominantly within the City Region; some locations do fall just outside its boundaries but are considered important in serving the City Region rail network. An initial assessment clarified whether the proposals aligned with the Long Term Rail Strategy, they could be considered short-term projects that could be delivered on the current network or long-term projects that required further rail development work, such as new lines or connections.
- 6.31 The stations were then assessed using a normalised and weighted scoring metric to rate the extent to which they met eight main criteria of possible influential variables upon feasibility; demand impacts; operational impacts; wider economic impacts; strategic impacts, social impacts; environmental impacts; physical constraints and external support. The purpose of the assessment tool is to provide a consistent and objective comparative appraisal of the feasibility of a station within a portfolio, and is intended to provide information early to decision makers. The tool is very much a transport-led appraisal, with individual station locations capable of being assessed on their own merits, to consider emerging economic and regeneration opportunities, changes in demand and funding availability. Appendix 3 includes a summary of the results.

Group 3: Projects that have limited impact on Liverpool Central

Development of Liverpool – London services

- 6.32 Increasing the frequency of Liverpool to London services to two trains an hour will continue to be pressed for as part of the West Coast Partnership franchising process. The development of Liverpool South Parkway to allow longer trains to call will also be pursued through the same process.

Freight Proposals

- 6.33 The City Region is in the process of developing a comprehensive multimodal freight strategy that will have the development of rail freight at its heart. The Liverpool City Region Freight and Logistics Strategy considers these in more detail.

Development of Long-Distance Service Connections

- 6.34 Building on the improved links to Scotland, Merseytravel will continue to collate the necessary evidence to support the further development of other long-distance links. This must be balanced against the need to deliver a robust and resilient timetable, maximise the best use of the rail network and provide a reliable rail service for the public.

Project Timeline

- 6.35 An indicative timeline was produced in 2014, which included a series of other anticipated rail improvements such as the further development of HS2 as well as the 12 specific packages. Given the difficulties encountered in delivering rail projects in recent years, a revised, more pragmatic timeline has been developed (see Appendix 4), which identifies when projects could realistically be delivered, takes account of the government's decision to separate out enhancements from maintenance and renewals within the HLOS for future Control Periods, and is structured around three new time periods:
- Short-Term: 2017 – 2022
 - Medium-Term: 2022 – 2027
 - Long-term: 2027+

Conclusion

- 7.1 The Liverpool City Region Long Term Rail Strategy presents a bold vision to equip the City Region with a modern railway, providing a necessary step change in terms of quality, accessibility and speed. In acknowledging the huge asset to Liverpool City Region that the rail network already provides, the Strategy provides a pathway that ensures that projected levels of future demand are accommodated, and outlines how latent demand can be opened up to the railway by accessing untapped markets and reducing the overall impact of car travel on the region's roads while supporting economic growth.
- 7.2 The aspirations of our Long Term Rail Strategy can only be realised with a commitment from government to delivering long-term economic benefits to the north through transforming connectivity; rail infrastructure will play an important part in this commitment. Such investment will be vital to redressing the longstanding imbalances in transport funding between the southeast and the north, with transport expenditure in the northwest over the last 10 years being a fraction of that spent in London^{xv}, a disparity that can only hamper the economic growth of the UK. Indeed the former Chancellors 'Northern Powerhouse' speech was an acknowledgment of the role the north must play in the nation's prosperity "to end the imbalance in the UK economy so our success is not wholly dependent on the global city of London, so we have across the north of England individual cities that are better connected, have a better quality of life, and are able to create".
- 7.3 Opportunities for capital funding for enhancement schemes are often made available with relatively short periods of notification for bids to be considered, and are out of alignment with the prolonged and complex gestation period for rail projects, particularly from central government, and increasingly so as a consequence of the changing treatment of rail enhancement schemes within the regulatory framework. Generally, these opportunities generally will only consider schemes that have already been developed significantly, and for which a sustainable business case can be demonstrated. It is therefore imperative that development funding is made available at a local and regional level to allow prioritised schemes and those with a greater potential to support a business case at an early stage, so as to maximise the funding opportunities when they arise.
- 7.4 The Strategy will remain under regular review to ensure it stays relevant to the physical, policy and economic context of not only the City Region itself, but the wider north of England and the UK as a whole.

Appendix 1 – Network Constraints Identified in 2014

A summary of constraints originally included within the Long Term Rail Strategy and work undertaken to date to address them.

Capacity Constraints – restricting the ability to run extended services to meet demand

Constraint	How addressed
<p>1 Merseyrail suffers from passenger capacity problems at certain times and locations that will substantially constrain future passenger growth – especially at Liverpool Central station and on trains into central Liverpool – due to limited platform space and the need to turn around services.</p>	<p>The need for additional capacity on trains is addressed by the new rolling stock.</p> <p>The capacity at Liverpool Central is a key part of the Long Term Rail Strategy and options are being considered in conjunction with Network Rail.</p>
<p>2 Services into Liverpool Lime Street, particularly two and three-car configurations, are often overcapacity during peak periods.</p>	<p>In the short-term the issue has been addressed through the electrification undertaken by Network Rail and the introduction of Class 319 4-car sets on to the line. By the end of 2018 the approach and platform configurations at Liverpool Lime Street will allow 8 car 319 sets to be accommodated.</p>
<p>3 Constraints on the network limit the number of trains per hour that can be used on busy sections of the line; for instance, the required future maximum of 18-20 trains per hour on the Northern Line between Sandhills and Liverpool Central, and the ability to provide additional cross-river services (for instance from Wrexham) cannot currently be readily accommodated.</p>	<p>While the ability to operate an increased number of trains has not been addressed, the capacity of the units will be significantly increased with the introduction of new rolling stock. Current three-car sets have a capacity of 303; the equivalent new sets by 2020 will have a capacity of 437.</p> <p>The ability to incorporate the Borderlands Line serving Bidston-Wrexham into the Merseyrail network remains a LTRS aspiration.</p>
<p>4 Related to constraint 2, the throat on the approach into Liverpool Lime Street acts as a constraint on the number of services per hour that can access the station. This is due to the limited number and the current location of crossover facilities on the Lime Street approach.</p>	<p>By the end of 2018, the approach and platform configurations at Liverpool Lime Street will allow eight-car Class 319 sets to be accommodated.</p> <p>In the longer term, the service pattern could be altered via the delivery of high-speed services and the potential to reroute services via the Wapping Tunnel.</p>

Capacity Constraints – restricting the ability to run extended services to meet demand

Constraint	How addressed
<p>5 Platform lengths pose a significant capacity issue at several locations, particularly on the City Line, with six-car trains unable to call at a number of locations.</p>	<p>This issue has largely been superseded by the introduction of the four-car Class 319 trains on the City Line, which has raised significantly the capacity of services on the Liverpool to Manchester Victoria and Wigan/Preston services. The CLC (Liverpool-Warrington-Manchester Line) is still served by diesel trains; the issue of short platform lengths is resolved through selective door opening.</p> <p>This is not an issue on the Northern or Wirral Lines, which can accommodate six-car trains.</p>
<p>6 The West Coast Mainline between Weaver Junction and Crewe is heavily utilised at present with a lack of available rail paths. This limits the number of services per hour that can run between Crewe and Liverpool Lime Street.</p>	<p>This is an issue which still needs to be resolved. It is identified as a priority within the LCR Freight and Logistics Strategy and will be taken forward in conjunction with Transport for the North.</p>
<p>7 Single-end termini create significant capacity issues on the Merseyrail network, with Chester, Ormskirk, Kirkby and Hunts Cross identified as particular constraints. Single-end terminals create longer turnaround times and create conflicts between inbound and outbound services on single-track sections.</p>	<p>The single-line termini do create a constraint on the ability to operate an increased level of service and impact on the potential extensions of the network. For instance, the single line into Kirkby has a significant impact on how an extension of electrification through Headbolt Lane and on to Skelmersdale is achieved.</p> <p>These issues will be addressed as individual projects are taken forward.</p>
<p>8 The combination of extra freight trains plus a parallel growth in passenger services, driven by the Northern Hub passenger service expansion (service upgrade complete by 2018) and HS2 Phase 1 (opening in 2026), could prove difficult to accommodate on both the Chat Moss and West Coast Mainline routes.</p>	<p>This constraint remains and has been highlighted as a constraint within the developing Liverpool City Region Freight and Logistics Strategy. This will be taken forward in conjunction with Transport for the North.</p>

Connectivity Constraints – *lack of geographical coverage of network*

Constraint	How addressed
<p>9 The rail network does not always link places where people live to employment sites effectively, and does not always offer sufficient service frequencies to allow seamless commuting where it does.</p>	<p>The packages that aim to extend the network are aimed at increasing the attractiveness and availability of the rail network to improve accessibility to employment. For instance, the extension of the rail network through Headbolt Lane to Kirkby would open up the railway to a population that currently does not have access to the rail network.</p>
<p>10 There is evidence that transport networks either side of the England/Wales border are developed partially in isolation from each other, leading to gaps in service provision and difficulties in seamless cross border journeys. For example, there are no through-trains between Liverpool and north Wales Coast Line/Wrexham despite a desire to create a link between Liverpool John Lennon Airport and the area (i.e. through Liverpool South Parkway).</p>	<p>This is being partially addressed through the reintroduction of rail services on the Halton Curve branch, initially serving Chester but with options to connect to Wrexham and Bangor once sufficient rail capacity to these centres is addressed.</p> <p>Further work is required on the Borderlands Line to complement the Halton Curve work. A development Group has been set up to consider the options for improvements on this service and a number of organisations are pressing for improvements through the new Wales and Borders franchise.</p>
<p>11 There are no direct services between Liverpool and Scotland, Liverpool and southwest England, or Liverpool and south Wales.</p>	<p>Services will be operating between Liverpool and Scotland (Glasgow) from December 2018, operated by TPE, and from December 2019 to Edinburgh.</p> <p>The potential to provide direct services to south Wales is enhanced through the delivery of the Halton Curve, which, with other line improvements being delivered (Chester-Wrexham), allows the potential operation of services between Liverpool and south Wales.</p> <p>Liverpool City Region will lobby for other improvements to long-distance services to be picked up through the franchising process.</p>
<p>12 There is a poor frequency of services (when compared to other cities of a similar size and population) between London and Liverpool.</p>	<p>In the short term, Liverpool City Region is lobbying for the new WCP franchise to increase the service frequency for services to Liverpool from the current one train per hour. The HS2 service specification for Liverpool is for two trains per hour from 2026. It is likely that additional service enhancements will be required beyond this time to accommodate forecast demand, requiring additional services between Liverpool and London.</p>

Infrastructure, Facilities and Rolling Stock Constraints

Constraint	How addressed
<p>13 The existing Merseyrail Electrics fleet will become life expired before 2020, and could be replaced with new higher-capacity rolling stock. Further additional rolling stock is likely to be required prior to 2040 to cope with additional demand.</p>	<p>Merseytravel is in the process of procuring on behalf of the Combined Authority 52 new units that will replace the current Class 507/508 fleet. Delivery of the new units is expected to commence in 2019. The programme includes substantial improvement to the traction power supply for the Merseyrail network, as well as work to standardise the platform train interface and remodeling of the fleet depots at Kirkdale and Birkenhead North. The supply contract for the new trains will allow for additional units to be provided as required.</p>
<p>14 The lack of a coherent long-term rolling stock strategy for the north of England has created a significant rolling stock constraint on services, with many local services utilising older units with capacity and quality limitations. In addition, plans to increase services between northeast England and Wales are limited in number due to a shortage of available rolling stock.</p>	<p>Rail North is, in conjunction with the train operators, leading on the rolling stock strategy for Northern and TransPennine Express. Both Northern and TPE expect to have new trains deployed by 2019. Liverpool City Region will continue to press for new and refurbished stock to be provided on routes serving the City Region. The provision of refurbished Class 319 units on Northern services and the refurbishment of the Class 185 units for TransPennine services have seen significant improvement for passengers.</p>
<p>15 There are operational conflicts at Hunts Cross West Junction between Merseyrail services and Cheshire Lines services, at Wavertree junction due to the merging of routes, and at Sandhills due to the confluence of Northern lines; There are also line-speed constraints on the Chester line. This can perpetuate delay and limits the number of services per hour that can currently run through these areas.</p>	<p>These issues are still prevalent and have yet to be addressed. Merseytravel has raised these issues with Network Rail.</p>
<p>16 There is no connectivity provision for services from the Cheshire Lines Committee (CLC) rail line between Liverpool, Warrington and Manchester to use platforms 3 or 4 at Liverpool South Parkway, limiting flexibility in platform assignment.</p>	<p>This constraint still exists. Merseytravel is working with Transport for Greater Manchester (TfGM) to consider potential improvements to services on this line and calls at Liverpool South Parkway.</p>
<p>17 The mix of (semi-fast and stopping) services on the CLC constrains timetabling options and restricts some stations to a single service per hour. This is due to a lack of passing loops and constraints at the Manchester end of the railway.</p>	<p>A study is currently being undertaken with TfGM and Warrington Borough Council which is to look into potential options to improve the delivery of services on the CLC route.</p>
<p>18 There is a lack of Park and Ride capacity at a number of stations on both the Merseyrail and City Line networks. As an example, the car park at Liverpool South Parkway is full by 08:00 and this is suppressing demand.</p>	<p>Merseytravel is working with the wider city region district authorities to identify land that could be used to provide additional capacity for park and ride facilities. St. Helens Junction and Bromborough are currently being taken forward through the STEP process. Other sites, including Spital and St. Helens Central, are sites for further potential car park expansions.</p>

Appendix 2 – Original Work Packages

This lists the original 12 work packages, including their constituent components.

Infrastructure, Facilities and Rolling Stock Constraints

Constraint	How addressed
<p>19 A lack of electrification on key routes has led to inefficient operation of passenger services (relating to routes between Liverpool, Manchester and Wigan via St. Helens, and between Chester and Crewe, Warrington, north Wales and Wrexham). This will be partially addressed by the electrification of the Chat Moss and St. Helens routes later this year. However, it remains an issue on lines with no identified electrification programme, including the CLC.</p>	<p>This remains an issue that will be partially addressed by the delivery of specific projects across the network. Section 6 sets out the details of each project. The introduction of new bi-mode trains on the network may also reduce the need for electrification of lines.</p>
<p>20 Infrastructure constraints exist on some of the key diesel lines that serve parts of the City Region not associated with the city centre. Southport to Wigan, Preston to Ormskirk, and Wigan to Kirkby all have sections of single track or otherwise constrained running that limits the number of services that can effectively run on each route.</p>	<p>These constraints continue to exist and the potential to improve this situation on each line will be reviewed in the future.</p>
<p>21 There is a significant capability gap for W10-gauge container freight between the Port of Liverpool and the West Coast Mainline, limiting rail freight growth in light of SuperPort proposals.</p>	<p>The Chat Moss route has been W10 cleared since 2015.</p>

Funding Constraints

Constraint	How addressed
<p>22 Government funding is constrained at present due to the current austerity measures. This places a requirement on sound economic cases for investment in order to stimulate potential funding source opportunities. In some cases, this has hindered the progression of schemes with main benefits that are social or strategic rather than economic.</p>	<p>See Funding Constraints (Section 5.16 – 5.25).</p>
<p>23 The current prevalence of split ticketing as a result of the availability of cheaper advance-purchase singles can lead to a significant skewing of demand data obtained via the Lennon database. This in turn can cause issues in planning effective services and meeting demand.</p>	<p>This is still an issue that Merseytravel continues to raise within the rail industry when possible. The development of smart ticketing may address this issue.</p>

Improving National and Passenger Freight Connections (CP5–CP7)

- Increase inter-peak frequency of Liverpool – London services and extending the Crewe – London interurban services to operate to London
- Extend platforms 3 and 4 at Liverpool South Parkway to allow longer trains to call
- Resolve conflict between passenger and freight services, including grade-separated junctions between the Bootle Branch, West Coast Mainline and Chat Moss routes
- New direct routes between Liverpool and Glasgow Central/Edinburgh Waverley, Stoke/Derby/Leicester and Bristol/Cardiff

Merseyrail Growth Enabling (CP5–CP8).

- Replacing Merseyrail Rolling Stock with higher-capacity, high-quality heavy rail units with provision for dual-voltage units
- Future-proofing the power requirements of the Merseyrail network by undertaking a full power upgrade
- Reducing operational constraints at Liverpool Central by introducing a turnback facility at Liverpool South Parkway
- Increasing rail capacity across the network
- Increasing Merseyrail depot capacity with a new facility at Birkenhead Central
- Introducing operational efficiencies

Liverpool City Centre Capacity (CP6–CP8)

- Optimising passenger use at James Street and Moorfields stations
- Full implementation of the Liverpool Central Station passenger capacity enhancements scheme.
- Improving rail capacity at Lime Street Station (to accommodate additional services including HS2 proposals) as part of a wider multimodal interchange scheme for the station and a large-scale redevelopment of the area
- Assessing requirement for a new station in Liverpool city centre

City Line Enhancements (CP5–CP7)

- Re-use of Wapping Tunnel and new underground connections into burrowing junctions south of Central on the Northern Line to allow trains to run between Central and Edge Hill and beyond
- Increasing capacity at Wavertree Junction for services between Mossley Hill and Edge Hill
- Extending Merseyrail services between South Parkway and Airport/Speke/Runcorn
- Connecting the Wirral, Northern and City Lines via the Stock Interchange and Wapping tunnels
- Creating new stations serving the universities and Smithdown Road corridor
- Capitalising on the opportunities of substantially enhanced services between Liverpool, Manchester and Wigan as a result of Northern Hub and electrification investment

Cheshire Lines Committee Route Enhancements (CP5–CP8)

- Electrification and capacity enhancements on the CLC line to facilitate increased frequency
- Extension of Merseyrail services via the CLC to Warrington Central and beyond
- New connection between CLC and West Coast Mainline (Liverpool Branch) to provide capacity relief at Hunts Cross junction
- New stations at Tarbock Interchange (or Halewood South) and Warrington West

Halton Curve (CP5–CP7)

- Provision of Halton Curve in upcoming resignalling of Weaver-Wavertree Junction line section
- Reinstatement of two-way frequent running on Halton Curve
- New routes between Liverpool and Chester, Wrexham, north Wales and Cardiff/south Wales
- Provision of a new halt on the Halton Curve itself at Beechwood in Runcorn to serve a key area of growing employment

Improved Connections to Chester and Ellesmere Port (CP6–CP8)

- Electrification of Chester-Crewe and extension of Merseyrail services from Chester to Crewe
- New stations at Ledsham and potentially on Chester-Crewe Line
- Electrification of the north Wales Mainline providing the potential to run electric Pendelinos between London, Chester and north Wales
- Electrification of the Chester-Warrington line and Ellesmere Port-Helsby, line allowing regular electric services to run on these lines
- New route between Chester and Leeds via Newton-le-Willows
- Increased service frequencies

Ormskirk-Preston enhancements (CP6–CP7)

- Electrification of the Ormskirk-Preston line, with required remodelling, resignalling and line speed improvements, and extension of Merseyrail operations to Preston
- Reinstatement of the Burscough Curves between Ormskirk/Preston and Southport directions
- Creation of a two-level interchange station at Burscough Bridge, allowing connections between Ormskirk – Liverpool service and Southport – Wigan services

Kirkby – Wigan Line (CP6)

- Electrification of the line between Kirkby and Wigan Wallgate, including new electric spurs between Rainford and Skelmesdale and between Upholland and Skelmersdale
- New stations at Headbolt Lane (Kirkby) and Skelmersdale
- Increased service frequencies between Kirkby and Manchester Victoria – Rochdale line with potential through services to Liverpool

Borderlands (Wrexham – Bidston) Line Enhancements (CP5–CP7)

- Service enhancements on the Wrexham – Bidston Line
- Line electrification and direct connectivity and integration with the Merseyrail Wirral Line
- New stations at Beechwood (Wirral), Woodchurch and Deeside Industrial Park

Mixed Passenger and Freight Use on Current Freight-Only Lines (CP7–CP8)

- Upgrade of North Mersey Branch and Bootle Branch to passenger services
- New routes between Liverpool and Ormskirk via North Mersey Branch, and between Edge Hill and Bootle via Bootle Branch
- New stations at Anfield, Tuebrook and Edge Lane

Selected New Stations (CP5–CP7)

- New stations at Carr Mill, Ditton, Maghull North, St James, Vauxhall, Town Meadow and other locations (mentioned in the packages above)



Appendix 3 – New Stations

Liverpool City Region has developed a new stations assessment tool that reviews the potential for new station locations across the network, mostly identified in 2014 and predominantly within the City Region; some locations do fall just outside its boundaries but are considered important in serving the City Region rail network. An initial assessment clarified whether the proposals aligned with the Long Term Rail Strategy, whether they could be considered short-term projects that could be delivered on the current network or long-term projects that required further rail development work, such as new lines or connections.

Performance at this stage is to provide a comparison between possible stations. Further work is required to identify whether a business case exists for each of the possible stations listed.

	Short-Term Schemes	Long-Term Schemes
Performed well	St James Smithdown Road	Liverpool City Centre Liverpool John Lennon Airport University Vauxhall
Performed moderately well	Carr Mill Chinatown Deeside Industrial Park Ditton Ledsham	Skelmersdale/Headbolt Lane Beechwood (Runcorn) Estuary Commerce Park Speke Tarbock Interchange
Performed less well	Beechwood (Wirral) Halewood South Town Meadow Woodchurch	Anfield Burscough Interchange Edge Lane Tuebrook

Appendix 4 – Timeline

	2017-22	2022-27	2027+
Completed/Committed	Merseyrail Rolling Stock delivered		
	Maghull North delivered		
	Halton Curve delivered		
	Newton-le-Willows refurbishment delivered		
	Chester-Newton service delivered		
	Optimisation of Weaver Junction		
Service Development	NPR Enhancement	HS2 Phase 1	HS2 Phase 2
	Develop Improved Long Distance Links		
	Borderlands Service Enhancement		
	Other service development eg Chester-Crewe		
Infrastructure Development	Borderlands Infrastructure	Borderlands Infrastructure Upgrade	
	Liverpool Central Development	Liverpool Central Delivery	
	Lime Street Development	Lime Street Delivery	
	Wapping Tunnel Development		Wapping Tunnel Delivery
	Skelmersdale Link Development	Skelmersdale Link Delivery	
	Ormskirk-Preston Development	Ormskirk-Preston Delivery	
	CLC Development	CLC Delivery	
	Airport Link Development		Airport Link Delivery
Freight Development		Bootle Branch Development	Bootle Branch Delivery
		Earlestown Grade Separation	
		Secure adequate additional freight	
		Grade separation at Earlestown West	
		Grade separation at Winwick Junction	
		Upgrade loading gauge between Warrington and Wirral to W10	
		Bootle Branch/Chat Moss Grade Separation	

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Long Term Rail Strategy

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