



Blackburn to Manchester Rail Scheme

Major Scheme Business Case

April 2015

Blackburn with Darwen Borough Council

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Blackburn with Darwen Borough Council

Town Hall, King William Street, Blackburn, BB1 7DT

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1.1 Background

Blackburn with Darwen Borough Council and partners have campaigned over a number of years for an enhanced service frequency on the Ribble Valley line to improve connectivity between Pennine Lancashire and Manchester by rail.

Prioritised within three Local Transport Plans for the Borough, the former Multi Area Agreement for Pennine Lancashire, the Clitheroe Line Community Rail Partnership Action Plan and more recently the Lancashire Strategic Economic Plan the scheme now has full rail industry support and an allocation within the Lancashire Local Growth Fund to deliver the much needed inter peak service enhancement between Blackburn and Manchester.

In April 2014 Blackburn with Darwen Council's Executive Board approved Network Rails emerging cost contract to deliver GRIP stages 4 – 8. A timetable for detailed design and delivery has therefore been agreed with the rail industry. As a result, the necessary infrastructure works required to provide a half hourly frequency for stations between Blackburn and Manchester (apart from Entwistle) throughout the day on the Clitheroe line is set for completion by Autumn 2015 with service introduction planned as part of the December 2017 timetable change.

The Network Rail Grip 4-8 Implementation Agreement was signed by the Leader of Blackburn with Darwen Borough Council Cllr Kate Hollern, MP for Blackburn Jack Straw and MP for Darwen and Rossendale Jake Berry at a special ceremony in June 2014 at Blackburn Town Hall.

Subject to approval by the Lancashire LEP, funding to deliver this scheme will be released in April 2015.

1.2 The Scheme and Its Benefits

In order to bring about the service frequency enhancements on the line, to facilitate expected passenger growth, and to attract a higher proportion of the travelling public to use the link as a result, a package of infrastructure measures have been identified. These represent the culmination of several years of optioneering and feasibility studies which afford the Council the confidence to pursue the scheme as the most appropriate solution to the existing problem.

In order to deliver a robust half hourly service throughout the day between Blackburn and Manchester Victoria, an extension to the passing loop (double track) at Darwen is required. The project, as identified by Network Rail, is to extend the double track section known as the Darwen loop to run from approximately 19 miles 440 yards to approximately 21 miles 440 yards on the Bolton to Blackburn Line, with associated works at structures along that part of the route.

In addition, the scheme includes enhancement works at selected stations on the line (including stations north of Blackburn), in order to enhance the waiting environment, weather resistance and access to information at these facilities. The stations to be enhanced are Clitheroe, Whalley, Langho, Ramsgrave and Wilpshire, Entwistle, and Darwen stations.

As is reported in Section 5, the total cost of the scheme is estimated to be £13,679,000 of which **£12,400,000** is requested from the Lancashire Enterprise Partnership via the Local Growth Fund.

The scheme is considered to have high value for money and its Benefit to Cost Ratio has been found to be **4.63** as is reported in Section 4.

1.3 Purpose of Document

This document represents the Major Scheme Business Case for **the Blackburn to Manchester Rail scheme**.

It has been developed in line with the structure now mandated by the Department for Transport's (DfT) Transport Business Case guidance to establish whether the specified scheme is:

- *Supported by a robust case for change that fits with wider policy objectives (**the Strategic Case**);*
- *Demonstrates value for money (**the Economic Case**);*
- *Financially affordable (**the Financial Case** – accounting analysis);*
- *Commercially viable (**the Commercial Case** – procurement issues); and*
- *Achievable (**the Management Case** – deliverability assessment).*

1.4 Document Structure

The remainder of the document is structured as follows:

- *Chapter 2: Scheme History and Scheme Description*
- *Chapter 3: The Strategic Case*
- *Chapter 4: The Economic Case*
- *Chapter 5: The Financial Case*
- *Chapter 6: The Commercial Case*
- *Chapter 7: The Management Case*
- *Chapter 8: Summary and Conclusions*

2 Scheme History & Scheme Description

The scheme to improve the Blackburn to Manchester rail corridor has been developed over a number of years and through a variety of stages. Feasibility studies to improve the line began in 2002 to address recognised limitations such as service frequency and journey times.

The progression over time of these documents is shown on the following diagram:

Year	Work Undertaken	Undertaken by
2002	East Lancashire Rail Infrastructure Feasibility Study	Posford Ltd
	↓	
2003	Timetabling Study - 1	VST York Ltd
	↓	
2004	Appraisal of Service Enhancement Options Study	Eden Business Analysis
	↓	
2007	Initial Business Case Work	Faber Maunsell
	↓	
2009	Timetabling Study - 2	Arup
	↓	
2010	Blackburn to Bolton Rail Scheme GRIP 2 Study	Network Rail
	↓	
2013	Blackburn to Bolton Rail Scheme GRIP 3 Study	Network Rail
	↓	
2014	Clitheroe Line Improvement Study Business Case Report	Mott MacDonald
	↓	
2014	Blackburn to Manchester Rail Scheme Outline Business Case	Mott MacDonald

Figure 2.1 Background Study Progression

There is clearly, therefore, a large body of evidence that stands behind the proposals presented in this document, providing confidence that the proposals

contained herein truly represent the most effective and highest value-for-money option of those considered.

Subject to approval by the Lancashire LEP, funding to deliver this scheme will be released in April 2015.

2.1 Options development

Over the past decade or so, a number of options have been considered to improve connectivity between Pennine Lancashire and Manchester. The development has been broken down into three stages, outlined below:

2.1.1 Stage 1

During stage 1 of the options development process, a multi-modal approach was taken to assess viable options to improve connectivity. Three options for improved connectivity were considered; the delivery of a rapid transport system, improvements to bus services and highways and improvements to the rail service. It was concluded that improvements to the rail service would provide the best improvements to connectivity in the area, particularly encouraging multi-modal interchanges between bus and rail.

2.1.2 Stage 2

During the second stage of the options development process, a focus was placed on options to improve the rail connection between Pennine Lancashire and Manchester. Two options were considered to improve the current service; increasing the length of double track sections between Bolton and Blackburn and improving linespeeds. It was concluded that increasing the length of double track sections along the line would provide the greatest service improvements, allowing trains to overtake one another and therefore increasing the number of services that can operate.

2.1.3 Stage 3

During stage 3 of the options development process, options to extend the double track sections of the Blackburn to Bolton rail line were considered. Four locations were identified where double track rail lines could be provided; Darwen Loop, Bromley Cross to Darwen Station, Bromley Cross to Slough Tunnel and Darwen to Blackburn Bolton Junction. It was concluded that extending the double track along the Darwen Loop would provide the best service enhancements, reducing the delay by 5.4% per train.

2.2 Our Proposed Solution

The Blackburn to Manchester Rail Corridor Improvements Scheme will deliver a half-hourly service between Blackburn and Manchester throughout the day through the addition of 7 journeys between these stations each day Monday – Saturday. This increased service level will cater for the current demand and improve the economic relationship between East Lancashire and Greater Manchester.

In order to deliver a robust half hourly service throughout the day an extension to the passing loop (double track) at Darwen is required. The project, as identified by Network Rail, is to extend the double track section known as the Darwen loop to run

from approximately 19 miles 440 yards to approximately 21 miles 440 yards on the Bolton to Blackburn Line, with associated works at structures along that part of the route. The full scope of works is as follows:

- 3200m of new track and formation work
- 2 new turnouts
- Signalling works
- Widen UB 42 (Turncroft)
- Re-deck UB 47 (Cotton Hall St.)

In addition, the scheme includes enhancement works at selected stations on the line (including stations north of Blackburn). This work includes the following:

- **Clitheroe:**
 - Fencing repair and repaint;
 - New waiting shelters;
- **Whalley:**
 - New waiting shelters;
 - Fencing repair and repaint;
- **Langho:**
 - Customer Information Screens;
 - Fencing paint;
 - Anti-vandal shelter;
 - Shelter repair;
 - New sign;
- **Ramsgreave and Wilpshire:**
 - Fencing paint;
 - Anti-vandal shelter;
- **Entwistle:**
 - Fencing repair and repaint;
- **Darwen:**
 - Additional shelters

2.3 Support for scheme

The proposed improvements to the Blackburn with Darwen rail line support national, regional and local policy; in particular:

- The scheme supports National Government policy objectives to invest in transport to support economic growth and prosperity through the delivery of an improved rail service between East Lancashire and the economic centre of Manchester
- The scheme supports Regional policy objectives to stimulate the economy of the North West and increase access to employment opportunities through the provision of a more frequent rail service that will encourage people to travel further for employment

- The scheme supports Local policy objectives to support growth in the local economy and ensure a sufficient supply of labour to meet demand through increased rail connectivity between the economies of Lancashire and Manchester providing new economic and employment opportunities.

The scheme is also supported by a number of groups including local MPs, local transport plans, the rail industry and the public. In particular the scheme has received the following support:

- Local MPs from Blackburn and Darwen & Rossendale (Jack Straw and Jake Berry) have campaigned for improvements to the scheme noting the huge growth in passenger numbers in recent years, despite the poor service, and the potential for economic growth in Lancashire if residents could access better paid jobs in Manchester
- Improvements to the Blackburn to Manchester rail corridor have been prioritised in Blackburn with Darwen Borough Council's Local Transport Plans since 2001, recognising the importance of the service in improving connectivity within and between the North West city regions
- From the very beginning of option development, the scheme has been supported by the rail industry and undergone full rail industry consultation in addition to gaining support from the DfT and train operating companies
- The scheme has undergone considerable consultation with the public which has helped to guide the development of the scheme and will continue throughout the scheme delivery; and
- The scheme is further supported by Ribble Valley MP Nigel Evans.

3 The Strategic Case

3.1 Introduction

This section presents the strategic case for the Blackburn to Manchester Rail Scheme, demonstrating the case for change and presenting a clear rationale for investment. It shows that the scheme furthers the aims and objectives of the Lancashire Enterprise Partnership in the following ways:

- The scheme provides an efficient modern public transport service which meets the needs of the people living in the region;
- The scheme provides a catalyst to stimulate the economic regeneration of Blackburn with Darwen Borough and the rest of Pennine Lancashire through improved access to work, education, training, health and leisure facilities;
- The scheme helps to facilitate a move towards a sustainable alternative to the car, particularly for travel on the local network and the M61 and M66 corridors, reduces carbon emissions and promotes social inclusion.

It is found that the scheme has the following benefits:

- **Operational Benefits**
 - Improved inter-peak service;
 - Reduction in number of vehicles on the local highway network;
 - Improved road safety;
- **Social Benefits:**
 - Enhanced access to employment and education opportunities;
 - Increased travel horizons;
- **Economic Benefits:**
 - Increased attractiveness of Pennine Lancashire as a place to do business and to live and work;
 - Modal shift to rail;
 - Growth in rail use;
- **Environmental Benefits:**
 - Reductions in pollution, noise, accidents and road congestion;
 - Increased energy efficiency and reduced greenhouse gas emissions.

3.2 Vision for Blackburn with Darwen and the Lancashire Enterprise Partnership Area

Blackburn with Darwen is a Unitary Authority, sitting within the Lancashire Local Enterprise Partnership (LEP) area. The borough forms a critical part of the Lancashire LEP and is therefore crucial in its efforts to raise economic growth and drive job creation. This section will provide a discussion on Lancashire's aspirations for economic growth and outline how these goals relate to Blackburn with Darwen.

3.2.1 Maximising our economic potential

Lancashire is one of the largest economies in the North of England, valued at over £23 billion. It is home to over 40,000 businesses, employing in excess of 600,000 people, and has a population of over 1.4m. The county boasts a rich industrial tradition, set within a network of densely populated urban centres which are themselves surrounded by idyllic countryside and coastal fringes.

Lancashire has experienced sustained growth during the last decade, particularly in its economic 'hotspots' such as Preston and Lancaster. However, the area's economic performance still consistently lags behind that of the UK and neighbouring city regions. Lancashire has nationally significant strengths on which it can build, particularly its innovation, skills and transport assets. These sectors have the potential to deliver opportunities which maximise jobs and growth to provide benefits that can be accessed across the country. If Lancashire is to reclaim its position as an economic leader, it will need to fully exploit the potential of these sectors.

Transport in Blackburn with Darwen, the Pennine Lancashire sub-region and the wider Lancashire area will clearly play an important role in helping to meet economic objectives. If the region is to meet its key growth goals, it will need to build on its unique strengths and ensure that the right transport infrastructure is in place to capitalise on them.

3.2.2 Building on our strengths

Lancashire is the birthplace of the manufacturing revolution and is at the heart of high-tech engineering and aerospace technology. However, it is also one of the most celebrated areas of countryside in which people enjoy a high quality of life with a prosperous future. Lancashire's continuing focus is on strengthening its industrial base by targeting the innovation, skills and supply chain solutions required to ensure Lancashire remains globally competitive and attractive to international investors. Three sectors have therefore been identified as having the potential to sustain the existing economic base, underpin new growth and secure re-shoring opportunities from overseas; aerospace, automotive and energy.

(a) Aerospace

Lancashire has been at the forefront of developments in the aerospace industry for over a century. Its regional cluster of aerospace capability is the fourth largest in the world and employs over 20,000 people. Major employers include BAE Systems, Rolls-Royce and Safran-Airbus which support strong supply chains in design, testing, manufacturing, and repair and maintenance. Lancashire's Enterprise Zone (EZ) will provide a world class development opportunity, which will enable companies to build upon the Zone's direct adjacency to BAE Systems by being at the heart of the county's nationally significant aerospace supply chain.

Growth within this sector is expected at 5% per year for the next 30 years. However, the extent to which UK and Lancashire based companies remain beneficiaries of this growth will ultimately be determined by their ability to respond to emerging market challenges, including pressures to reduce production costs and simplify supply chains.

It is therefore imperative that the local transport network is ready to support growth in the aerospace industry with an effective and efficient transport system that meets market demand.

(b) Automotive

The automotive sector has an important base in Lancashire, employing over 3,500 people. Key companies include PACCAR (Leyland Trucks) Piolax, Sanko-Gosei, Erlson, Futaba-Tenneco and TRW Automotive. The supply chain is important to this sector with the majority of business activity focussed on the supply of high value parts to UK and European Original Equipment Manufacturers (OEMs) - a key Lancashire capability which the UK as a whole is seeking to grow.

Lancashire also has a significant cluster of innovative design and development companies, including Torotrak, Clean Air Power and Scorpion Automotive, on which to build.

The local transport network in Lancashire can play a key role in helping the LEP area to meet its aspirations in this area, by helping to connect industries with workforce and lines of supply.

(c) Energy

The power generation sector in Lancashire employs over 37,000 people and is supported by Lancaster University and UCLan, both of whom have internationally recognised centres of excellence in energy and environmental studies. National companies operating in the sector include Springfield Fuels, EDF, AMEC PLC, SITA, Assystem and Westinghouse-Toshiba. Green technologies are also recognised as being of importance to Lancashire.

Heysham 1 and 2, in Lancaster, represent one of the largest concentrations of power generation in the UK. Nuclear decommissioning is anticipated to commence at Heysham 1 in 2019, with Heysham 2 soon after. Lancashire's close proximity to a number of Nuclear Decommissioning Authority sites makes it an ideal central location from which to serve the industry.

Other energy sectors are emerging in Lancashire including off-shore natural gas, offshore wind power and shale gas. These sectors may play an important economic role in Lancashire in the future and may be important in establishing the sector both locally and nationally.

It is vital that the local transport network in Blackburn with Darwen and the wider Lancashire area is ready to assist with the development of new energy sectors which will bring new opportunities for employment and business growth to the area.

3.3 Vision for travel in Pennine Lancashire

In this section, we will discuss the sub-region's vision for travel in terms of providing a wide choice of modes in a safer travel environment and the role that travel will play in supporting businesses and people.

3.3.1 A choice of travel

A key objective for travel in Lancashire is to deliver good, reliable connections for people, goods and services while offering a choice in mode of travel. Therefore, local authorities must facilitate travel on foot, by cycle, bus and rail as well as by car and goods vehicle. The provision of a choice of travel mode will benefit all communities, particularly the most disadvantaged who may not have access to a car. It will also benefit vulnerable road users such as pedestrians, cyclists and children who will be able to travel more easily without the fear of cars. A particular focus will be placed on widening sustainable forms of travel. The encouragement to get out of the car and participate in more active ways of travel, will improve quality of life for those using or experiencing the effects of transport.

3.3.2 Safer travel

The provision of safer travel is another basic objective for travel in Lancashire. It is imperative that safety and quality improvements are made to the public realm that link homes to local services and employment, including bus and rail services. Creating a more attractive environment will enable life choices to be made by individuals regarding walking, cycling and the use of public transport that may enhance their quality of life. In doing so, public realm improvements will make walking and cycling more safe, convenient and attractive, particularly in the most disadvantaged areas of Lancashire. It will also be important to address antisocial behaviour and the fear of crime in some public places and on public transport, particularly at night, to enable safer travel.

3.3.3 Supporting businesses

It has been noted that businesses will only grow and invest in Lancashire if they know their people and goods have access to an efficient, fully integrated transport network. The travel network in Lancashire therefore needs to ensure that people can travel to employment sites and goods can be transported. In order to support businesses and help to secure a strong economic future, transport and travel into and between major economic centres in the North West need to be more effective and efficient while links to neighbouring areas need to be improved.

3.3.4 Supporting people

The transport network in Lancashire needs to provide better access to education and employment in line with national priorities for economic growth. The transport network needs to serve Lancashire's main centres for employment and education with attractive, reliable, profitable, accessible and well used bus and rail services, which will enable users to travel safely, affordably and in good time to get to work and education. Travel options need to be improved to provide all sections of the community with safe and convenient access to the services, jobs, health, leisure and educational opportunities that they need to contribute to the development of strong and cohesive communities. In order to achieve this, there is a need to provide viable alternatives to the car to offer cost-effective alternatives for those who have no access to a car by reason of age or income.

3.4 What role does rail play in the vision?

Rail will play an important role in achieving the sub-region's vision for travel. As this section outlines, it will support economic growth, provide a viable alternative to the car and support the prosperity of local communities.

3.4.1 Supporting economic growth

The potential of rail has been identified as key to supporting economic growth in Lancashire. The overall goal of improving railways in the North is for them to be recognised as being a positive feature of living and working in the North. Railways can therefore be seen as having a central role in supporting the growth and regeneration of the North West. The West Coast Main Line places many areas of Lancashire within a three-hour train journey of London, enabling Lancashire's residents to capitalise on economic opportunities in the south-east. Rail therefore has the potential to support economic growth in Lancashire by providing an efficient and effective method of travel which can connect people to employment and business to customers.

3.4.2 A viable alternative to the car

Across the North, rail use is growing – much more strongly than other transport modes. Between 2003/04 and 2012/13, station footfall in Blackburn alone rose by around 57%, with growth continuing despite the recession. Rail is seen as a viable alternative to the car which enables people to travel both long and short distances, time and cost effectively. However, it has been noted that a focus needs to be placed on broadening the appeal of rail to address a wider set of people, particularly the most disadvantaged groups in communities. At locations where there is evidence for potential growth in the use of rail, investments should be made to provide more frequent services, greater capacity and improved quality of stations and trains.

3.4.3 Supporting local communities

A key focus for rail is the development of local services to connect communities with education, employment and other key facilities. Over the coming years, the development of rail in the north will ensure that Lancashire's main centres will be served by attractive, reliable, profitable, accessible and well used bus and rail services. In order to achieve this, a coherent public transport system is required that improves access to jobs, training and education opportunities to benefit local communities. Where there is a proven economic or regeneration benefit, new bus routes, stations and services with a greater capacity will be provided.

3.5 Aims and objectives for Blackburn with Darwen

Here we discuss Blackburn with Darwen as a centre of regional importance and its role in encouraging business growth and a prosperous local community.

3.5.1 Centre of regional importance

By 2026, Blackburn with Darwen aims to have consolidated its role as a centre of regional importance. It will have a growing economy, based on a highly skilled workforce, set within a unique and high quality urban and rural environment. The roles of the main settlements in the borough will be in place; Blackburn as a sub-regional centre; Darwen as a market town with a distinct identity. This will ensure a coherent approach to development in the borough.

3.5.2 Business growth

Blackburn with Darwen aims to create a more competitive business base by maximising its skills and capabilities. The borough seeks to create conditions allowing a change in emphasis to a higher-wage, higher-skill economy and in doing

so retain and attract skilled and qualified people to live in the Borough. Blackburn with Darwen aims to connect itself to major employment areas beyond its boundaries, which will provide some of the highest-skilled and highest value jobs in the area.

3.5.3 Thriving local community

A key aim of Blackburn with Darwen is to create a thriving community that benefits from economic growth. In order to achieve this, the borough must provide sustainable access to services and facilities to ensure that everyone, wherever they live, will find it easier to travel without having to use a car.

3.6 Blackburn with Darwen Context

Blackburn with Darwen, surrounded by some of the most beautiful countryside in Britain, is a key geographical and cultural gateway to Pennine Lancashire. It is a unitary authority, serving Blackburn, Darwen and the surrounding countryside. Located on the border of Central Lancashire City Region and Manchester City Region and close to the border of the Liverpool City Region, the area would appear to benefit from strong links across the North West.

The borough covers an area of 13,700 hectares and has a population of 141,200 people in approximately 55,000 households. Blackburn – the largest town in east Lancashire – is a key destination for employment and leisure and has seen major investment in recent years. Darwen – the second largest settlement in the borough – is a market town with small scale retail developments and community services.

In terms of the local transport network, the A666 connects the borough north-south while the M65 runs east-west. The M65 provides a link to the M61 to Manchester and the M6 north and southbound. Rail lines run north-south, between Manchester and Clitheroe, and east-west between Blackpool, Colne, and Leeds. The borough is in close proximity to the regional centres of Liverpool and Manchester which both have airports serving domestic and international destinations.

However many of the transport links that pass through and serve the borough are currently aging, and at (or approaching) capacity or a combination of these. The M65 motorway linking Blackburn with Preston to the west and Burnley / Colne to the east is significantly overcapacity at certain times of the day, as are the M6 and M61 links nearby. Rail infrastructure in the area is consistently cited as a key constraint to movement with service frequency between Manchester and Blackburn, and poor quality rolling stock some of the most frequent complaints.

3.6.1 Importance of rail for local communities

Rail provides a service for communities in Blackburn with Darwen and Bolton that is not available through other modes of travel. The local rail service allows these relatively rural communities to access nearby towns and villages and travel further to access economic opportunities in Manchester and beyond.

(a) Road

The M65 is a key inter-urban route whose principal function is to link the main population and employment centres of Preston, Blackburn, Burnley and Colne with routes of strategic national and regional importance. The M65 provides a direct link

to the regional and national motorway network such as the M61 which offers a direct route into Manchester. However, recent studies have shown that the M65 motorway is operating at capacity at peak times. Analysis has identified that even without predicted growth of traffic on the M65 the motorway will be at capacity by 2015, with particular strain on the stretch between Junctions 5 and 6 (south of Blackburn). The build out of employment sites and housing sites in proximity to the corridor, and upward trends in car ownership and usage, would see capacity exceeded.

(b) Bus

The number of buses serving Blackburn town centre has declined considerably since 2002. Pennine Reach, a new rapid bus transport scheme, is aimed at improving public transport along the Accrington – Blackburn – Darwen corridors linking in with the strategic east-west and north-south railway lines. However, given the rural location of many towns and villages in East Lancashire; bus services are often infrequent with long journey time in comparison to rail.

(c) Cycling

Cycling numbers in Blackburn with Darwen have increased over the past decade, reflecting the significant efforts which have been made in recent years to promote cycling. Cycling is useful for local residents to travel short distances, but is limited for longer journeys. An important step in increasing cycling levels in the borough will be to encourage multi-modal journeys e.g. cycling to bus stops or rail stations.

(d) Rail

Rail travel is the preferred mode of travel for a large proportion of residents in Blackburn with Darwen. Rail patronage in the borough increased by a third between 2006/07 and 2011/12 and continues to rise each year. 85% of journeys on the line between Bolton and Blackburn are internal, but the line also offers longer distance journeys to Greater Manchester. Rail is the method of choice for many residents, particular those of a higher income who travel further to reach employment.

Given the current baseline transport conditions described by mode above, the following section provides a description of the stations along the line in question – the Blackburn to Bolton line. This line is used by services travelling between Manchester and Blackburn / Clitheroe.

3.7 Strategic Fit - The communities on the rail line

3.7.1 Stations served by the rail line

The diagram below shows the 6 stations which are served by the Bolton to Blackburn rail line.

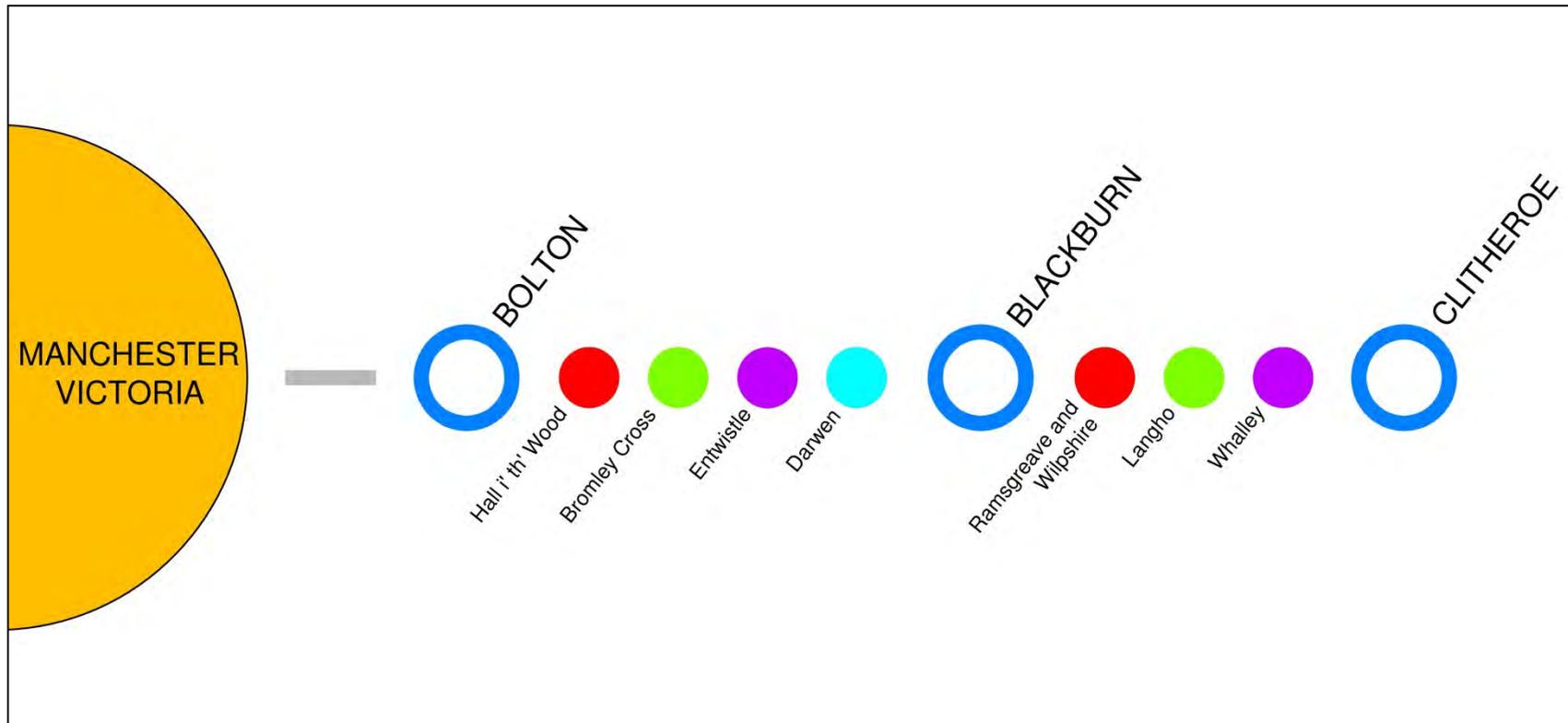


Figure 3.1: Rail stations on the Bolton to Blackburn line

Figure 3.2 shows the location of these stations in the regional context.

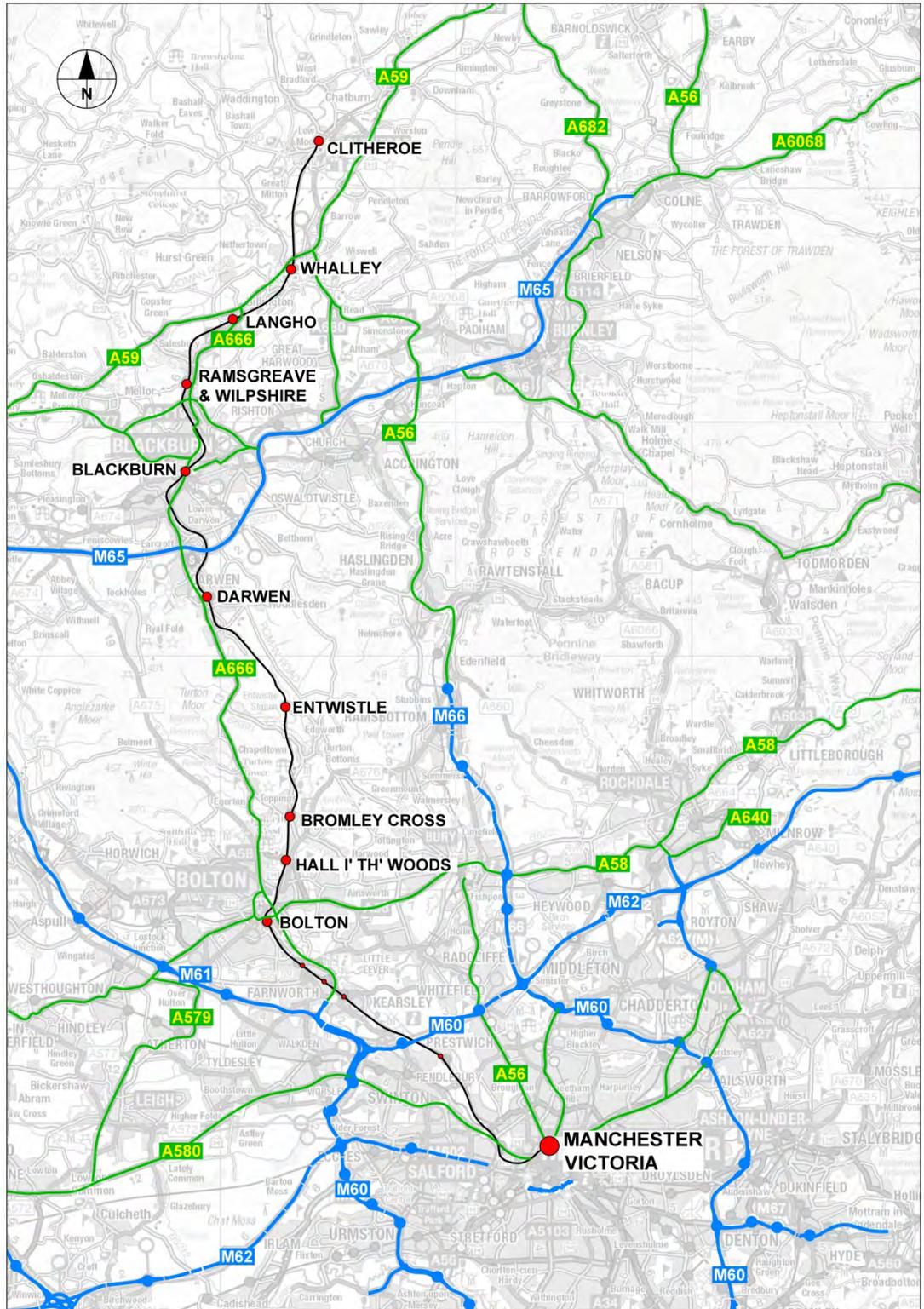


Figure 3.2: The Blackburn to Bolton rail line

3.7.2 The Communities

(a) Bolton

Bolton is one of ten metropolitan districts in Greater Manchester, characterised by its mix of rural and urban land. It is bounded to the north by the Lancashire districts of Chorley and Blackburn with Darwen, and on the remaining sides by the districts of Wigan, Bury and Salford. It has a population of over 280,000 people which is expected to increase by 28% during the next 25 years. Unemployment in the borough increased during the recession and is still above the national average. 74.8% of the borough's population are economically active, compared to 77.5% in Great Britain while 2.7% of the population in Bolton claim JSA benefits compared to 2.1% in Great Britain. Bolton also suffers from high levels of inequality, compromising the ability of the borough to meet its economic and social targets. Deprivation is concentrated in the inner areas of Bolton and Farnworth, while the more prosperous areas are located in the north and west of the borough. One of the main aims of the Sustainable Community Strategy is to narrow the gap between the most and least well off. Many of the issues in the inner areas are associated with trying to improve existing physical, economic and social conditions.

(b) Hall i' th' Wood

Hall i' th' Wood is a small village in the Metropolitan Borough of Bolton, taking its name from the local 16th-century manor house. Hall i' th' Wood railway station is the last stop before Bolton on the line between Blackburn and Bolton. The station is located in the middle of a housing estate in the village and forms an unofficial footpath between the two sides.

(c) Bromley Cross

Bromley Cross is a residential area in the Metropolitan Borough of Bolton. It has a population of over 1300 people and covers an area of 716 hectares. Bromley Cross's population density is equivalent to Bolton, and is much larger than England & Wales. In September 2011 it was noted that the area of Bromley Cross was rated the fifth best place in Britain to raise a family, taking into account the rates of crime, schooling, amenities and affordable homes.

(d) Entwistle

Entwistle is a village in the Blackburn with Darwen Unitary Authority. Entwistle railway station, situated between Darwen and Bromley Cross, on the line between Blackburn and Bolton is a request stop. The village is about 1000 ft. above sea level and covers 1668 acres.

(e) Darwen

Darwen is a market town located in the Blackburn with Darwen Unitary Authority. The town has a population of over 27,000 people in 12,770 houses which represents 19% of the borough's population. The town is located on the River Darwen, which flows from south to north. As a small market town, Darwen offers small-scale retail developments and community services, serving the local town and rural community.

(f) Blackburn

Blackburn is a large, economically active town in Lancashire located in the borough of Blackburn with Darwen. The town has a population of over 102,000 people in 35,000 houses which represents 72% of the borough's population.

Within Blackburn there are sharp contrasts between high quality environments, for example and within a comparatively short distance, areas of great deprivation. The northern and western parts of the town have a better quality environment than the eastern areas. These contain areas of larger housing and open spaces and are close to generally pleasant countryside. Blackburn Town Centre is a sub-regional centre for shopping and tertiary education, and acts as a focus for cultural, social, business and community life in the borough and Pennine Lancashire.

3.7.3 Socio-economics

(a) Population

The borough of Blackburn with Darwen has a population of over 140,000 which is characterised as being young, diverse and growing. There is a much younger population than the average for England and Wales, therefore fewer people of pensionable age. 1 in 7 (13.5%) of the population are aged 65 or over compared to 17% in the region and nationally. The workday population of the borough is almost 3% higher than the usual resident population, highlighting the importance of the borough as a destination for employment. 63.1% of the borough's population is of working age which is similar to the regional (63.6%) and national level (63.8%).

The population of the borough is also considered relatively diverse in comparison to similar areas. The proportion of Muslim population (27%) is the third highest among all local authorities in the United Kingdom and the highest outside London. Non-white ethnic groups in the borough have a much younger age profile with a high proportion of children.

The number of households in Blackburn with Darwen (with at least 1 resident) grew by 7.5% between 2001 and 2011, compared to 7% in the North West and 7.9% nationally. The population of the borough is expected to grow by between 3% and 6% during the period 2010-2021. Additional population growth in the borough will create additional demand in the area, particularly for the already over-capacity road and rail services.

(b) Unemployment & Deprivation

Despite having a strong working age population and being a destination for employment in Lancashire, unemployment levels in Blackburn with Darwen are high. The number of economically active residents in the borough is only 67.8%, compared to 74.8% in the North West and 77.5% nationally. As such, the JSA claimant rate stands at 2.8%, compared to 2.2% regionally and 2.1% nationally. East Lancashire is an area of localised labour markets, narrow travel horizons and limited interaction within the adjacent economies of Manchester, Leeds and Central Lancashire. Residents do not have the means of travel or personal skills to access sites of employment outside of the borough.

Gross weekly pay for full time workers is also behind regional and national levels. Average weekly pay in Blackburn with Darwen is £454.10, compared to £484.60 in

the North West and £520.80 in Great Britain. Lower wages combined with poor employment opportunities compounds economic and social deprivation in Blackburn with Darwen. Deprivation is a key issue throughout the north-west and an indicator of potential for regeneration.

(c) Local Economy

Lancashire's economic performance still consistently lags behind that of the UK and neighbouring city regions. Between 2007 and 2011, Lancashire's economy grew by 4.4% compared to 6.5% nationally and 4.9% regionally. Lancashire's GVA is only 77% of the UK average. Today, the economic performance of Lancashire is more than 20% behind the national average, in terms of GVA per resident.

In Blackburn with Darwen, the economic situation is a little brighter. The borough's GVA grew by 3.3% in 2012, higher than the regional (2.2%) and national (1.6%) averages. The economy of the borough is also diversifying to ensure it is robust. In 1997, 38.1% of GVA in Blackburn with Darwen was generated from manufacturing, with 20.2% from the public sector. By 2012, the public sector (26.9%) contributed more to GVA than manufacturing (20.6%), GVA from business services and finance increased from 5% in 1996 to 7.7% in 2012 and for distribution; transport, accommodation and food from 16.3% to 20.7%. However, overall GVA per head is still behind the national level.

(d) Future economic situation

Lancashire's economy is predicted to grow by 27% over the next ten years. This is significantly behind the rest of the UK whose average growth is forecast to be 33%. Even so, the scale of growth in Lancashire is expected to increase flows from north-to-south as people try to access employment.

In Blackburn with Darwen, the Local Enterprise Partnership (LEP) has been set up to drive economic growth and job creation. It seeks to create up to 50,000 jobs over the next 10 years and to draw investment into Lancashire. One of the key priorities for the LEP has been the establishment of the Lancashire Enterprise Zone (EZ). Focusing on the advanced engineering and manufacturing sector, the EZ aims to boost industrial activity and is expected to generate up to 6,000 high value jobs, many of which are likely to be taken up by people living in Blackburn with Darwen.

The LEP is also central to the delivery of more specific projects within Blackburn with Darwen such as connectivity improvements to the Clitheroe / Blackburn / Manchester rail route and Junction 5 of the M65; and funding support for the Cathedral Quarter development.

(e) Levels of Deprivation

In terms of deprivation, a number of areas in Lancashire lie within the top 20% of deprived populations in England and Wales as per the 2010 Index of Multiple Deprivation data. These areas are concentrated within the major towns within Lancashire such as Preston, Lancaster, Burnley and Blackburn (see figure 3.3).

In Blackburn, a cluster of SOAs lie within the highest 3% of deprived areas nationally. A number of SOAs in the most deprived 20% are also concentrated in inner city Blackburn. These pockets of high deprivation lie close to the rail line (see figure 3.4).

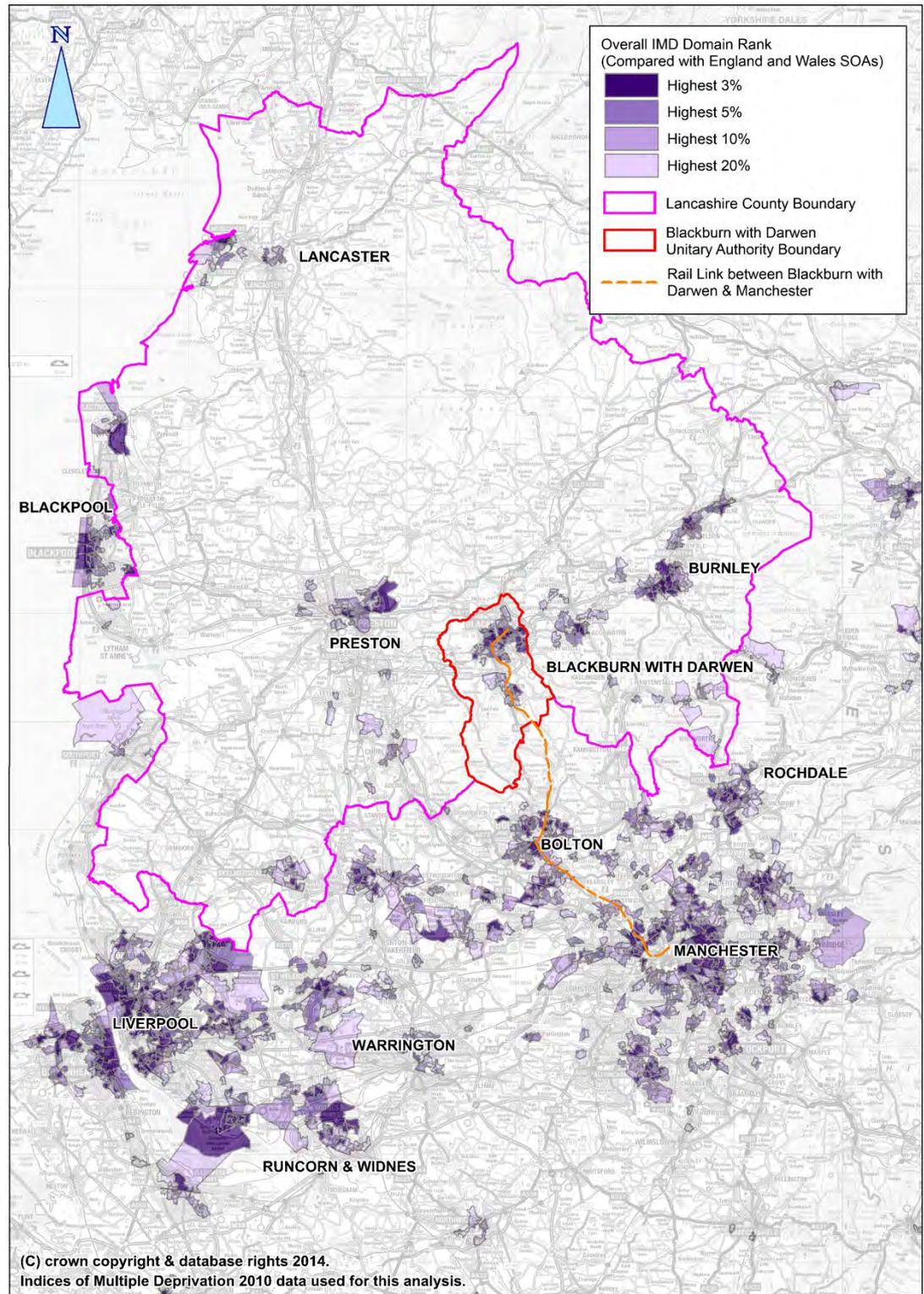


Figure 3.3: Index of Multiple Deprivation for Lancashire, 2010

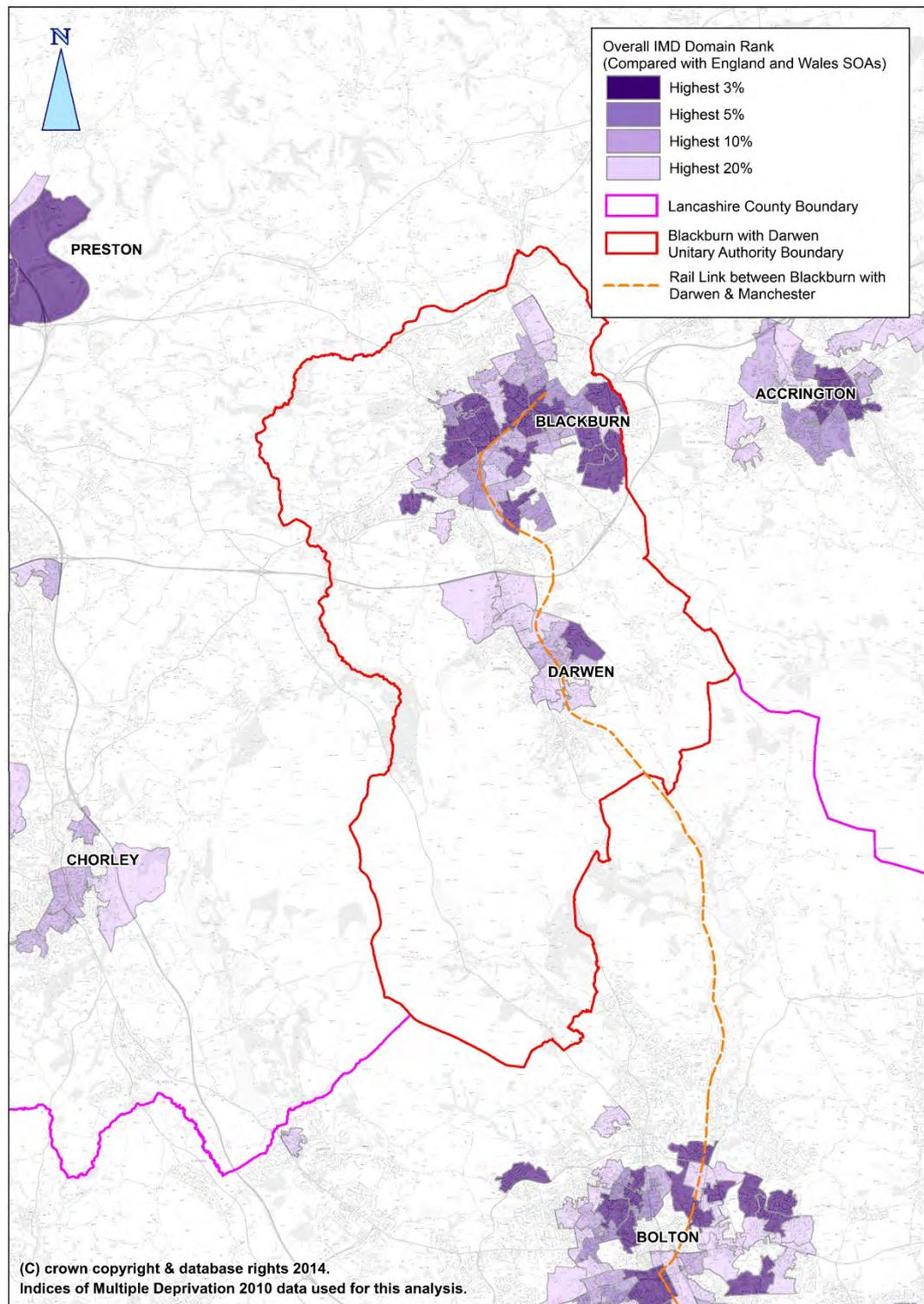


Figure 3.4: Index of Multiple Deprivation for Blackburn with Darwen, 2010

3.8 Employment and Life Quality Impacts

As mentioned in Blackburn with Darwen's summarising strategic document called Plan for Prosperity (2014), improvements to rail connectivity are one of the most important contributions to the growing infrastructure requirements of the area. The Infrastructure Delivery Plan (2014) underpins the development of employment sites, housing growth, successful school provision and attractiveness of leisure time facilities.

The proposed Blackburn to Manchester rail scheme provides direct (primary) and indirect (secondary) benefits in terms of access to employment and other development:

- The primary benefits are anticipated for inter-peak short-distance journeys travelling between Blackburn and Manchester. The trains added between 10 am and 5 pm will support access to facilities, which are usually visited within the opening hours overlapping the period of improved train frequency. For this reason, the shopping opportunities, leisure time centres, education and health facilities are expected to be affected directly.
- The secondary benefits of improved train services will impact the peak periods, dominated by employment bound commuting. Although the train frequency remains unchanged, the service reliability and station quality will be higher. As a result, aspirations for new employment and housing sites as well as current regeneration areas will be supported indirectly.

It should be noted that 85% of total passenger journeys on the route are internal. Journey purpose during the time-band of operation of the new services is taken as being 10% on employers business, 30.5% commuting to work or education, and 59.5% for other (leisure) purposes. This indicates the high importance of the scheme for the local economy and confirms that the primary benefits are expected for non-work journey destinations.

3.8.1 Housing Development

The Strategic Housing Market Assessment (2014) has identified an objectively assessed need for 9,030 new houses in the Blackburn with Darwen Borough between 2011 and 2026:

- 2011 – 2016: 421 / year net additional dwellings;
- 2016 – 2021: 602 / year net additional dwellings;
- 2021 – 2026: 783 / year net additional dwellings.

This should fill in the deficit of relatively high-value stock on the market, since currently many people have moved outside of the area at a certain point in their careers. Although the day-to-day railway commuting to work will be affected only indirectly, the access to other non-work facilities will be improved significantly (as mentioned above). When considering the overall quality of residential life, both aspects are of a similar importance.

Each of the districts neighbouring the Ribble Valley Growth Corridor have produced, or are in the process of producing, development plan documents governing their spatial planning strategy. A summary of the targets for housing is shown in the table overleaf.

Local Authority	Plan Period	Total Number of dwellings	Dwelling Completions (since commencement of plan period)	Residual Dwellings (until end of plan period)
Blackburn with Darwen	2011 – 2026	9,030	199	8,831
Burnley	2016 – 2030	840 – 2,100	N/A	N/A
Hyndburn	2011 – 2026	3,200	Unknown	Unknown
Pendle	2011 – 2030	5,662	Unknown	Unknown
Ribble Valley	2008 – 2028	5,600	735	4,865
South Ribble	2010 – 2026	6,225	Unknown	Unknown

Table 3.1: Summary of Development Plan Document Targets for Housing

3.8.2 Employment Sites

In order to facilitate growth, there is a clear need to ensure that the right range of sites is available to encourage investment in the sectors to be supported. The Borough's employment land requirements to 2026 have been projected, and suitable sites identified in the Employment Land Review (2013).

Section 4 of the study identified a total employment land requirement of 66 ha. Section 5 of the study ascertained that 632 ha of land has been identified as currently being in use for employment purposes, and that an additional 44 ha is available within existing sites to contribute towards future supply.

Policy 13. Employment Land Allocations		
<p>Between 2011 and 2026, the following sites are allocated to contribute towards a requirement of at least 66 hectares of employment land coming forward for development (Use Classes B1, B2 and B8).</p>		
Ref	Site	Area (ha)
13/1	Lower Philips Road, Blackburn	6.1
13/2	Blakewater Road, Blackburn	2.0
13/3	Gorse Street, Blackburn	4.2
13/4	Freckleton Street, Blackburn	3.3
13/5	The Wrangling, Blackburn	1.6
13/6	Evolution Park, Shadsworth Road, Blackburn	3.8
13/7	Plot C, Shadsworth Business Park, Blackburn	1.9
13/8	Haslingden Road, Blackburn	6.3
13/9	Premier Way, Walker Park, Blackburn	2.6
13/10	Commercial Way, Blackburn	3.4
13/11	Hollins Grove, Darwen	1.3
13/12	Chapels Park, Darwen	7.0

Figure 3.5: Summary of potential employment sites (Blackburn with Darwen Local Plan Part 2, 2014)

The remaining area of 22 ha is provided by the new employment sites, predominantly by the Whitebirk Strategic Employment Site located between Hyndburn and Blackburn with Darwen. This site includes more than 1 million sq ft of buildings. The landmark scheme will include manufacturing, industrial and warehouse space, offices, a hotel, food outlets and leisure facilities, covering the total area of 89 acres. The planning application is expected to be made in the spring of 2015. The commercial property investor Praxis estimates that the local economy should benefit from the creation of up to 2,000 jobs.

Moreover, Blackburn with Darwen's labour and employment markets are not confined to its Borough boundary. The Lancashire Enterprise Zone will form a centre of excellence for high technology manufacturing. It is being developed at two locations – BAE Systems' sites at Salmesbury and Warton (west of Blackburn). Up to 6,000 highly skilled jobs will be created directly, plus a further 5,000 to 7,000 in the local supply chain. A number of potential occupiers have expressed an interest about coming on board at either the 72-hectare Samlesbury site or the 75-hectare Warton location, the first of which are moving in during 2015.

On the southern end of the Blackburn to Manchester railway catchment area is the largest distribution, logistics and employment site in Greater Manchester. Logistics North offers design and build opportunities ranging in size from 20,000 sq. ft to 1 million sq. ft. Planning approval was granted for the 250 acre scheme in December 2013 and works have started on site to deliver nearly 400,000 sq. m (over 4 million sq. ft) of bespoke design and build opportunities.

Another important scheme near Bolton is the 74 hectare (183 acre) mixed-use residential and employment site of the former Horwich Locomotive Works. This will feature 35,225 m² (379,000 sq. ft.) of employment/mixed use commercial development, the creation of 1,700 new homes and over 50 acres of open space including pedestrian and cycle routes. A new access road will link the site with Horwich Parkway rail station.

3.8.3 Beneficiary Shopping, Education and Leisure Time Facilities

The centralised location of Blackburn, Darwen and Bolton railway stations within their respective towns will bring direct benefit for current facilities as well as new developments situated within walking distance of these transport hubs. The Borough's town centres face competition from out-of-town shopping centres and competing nearby town centres, therefore there is a need to improve the quality and the range of shops and attractions, particularly quality leisure and family friendly attractions which are key markets for the success of these towns. The improved public transport accessibility underpins these targets.

The development projects identified in the 2010 Blackburn Town Centre Strategy include (inter alia):

- Cathedral Quarter – a transformational project across the 17 hectare site to provide new public and private open spaces in and around the Cathedral and in front of the main railway station and bus interchange. A series of new office, retail and hotel buildings will be constructed. In addition to this a new bus interchange will be provided fronting the entrance to the railway station. Phase 1 will be completed in September 2015 with 35,000 sq ft of office space, a 60 room Premier Inn Hotel and 6,000 sq ft of retail.
- Blackburn College – the expansion of Blackburn College's town centre campus is set to create places for an extra 600 degree students (current status: commenced);
- The Mall: a £66 million refurbishment and 200,000 sq ft extension of the main shopping hub (current status: completed);
- New health centre: a new improved health centre at Alma Street (current status: completed).

In addition to these, the neighbouring Freckleton Street Area is undergoing a radical transformation to become a major new mixed use quarter for Blackburn. The area will provide a focus for community facilities and public services in the mix of enterprises. New residential development will provide in-town living at appropriate locations.

With a borough-wide importance, the new Sports and Leisure Centre opened in Feilden Street, Blackburn, in March 2015. The new centre combines the best of sports and leisure facilities. It has been built as a result of a partnership between Blackburn with Darwen Council and Blackburn College.

Similarly, Bolton town centre is undergoing significant regeneration through the following developments in the proximity of railway station:

- Transport Interchange – a £48m development will co-locate the main bus station with Bolton train station with two connected by a pedestrian skylink bridge. Complementary to this is a new £6.5 million, 35,000 sq ft Grade A office block fronting Great Moor Street that is the subject of a planning application. These developments will act as a catalyst for regenerating the wider town centre area.
- The Market Place – a £15million refurbishment includes the building of a nine screen cinema with a capacity for 1,200 seats and the development of 30,000 sq ft of new restaurant space, creating seven to eight restaurants by opening up the vaulted basement of the old market.
- Bolton Market – a £4.5 million refurbishment provides a refreshed layout with new stalls, a new roof with solar panels and a bespoke outdoor market. The project builds on the uniqueness of the market, providing a mix of traditional market and modern retail trading.

3.9 Rail travel in Blackburn with Darwen – The Issues

The diagram below outlines the five issues that have been identified on the Bolton to Blackburn rail line.



Figure 3.6: Issues on the Bolton to Blackburn rail line

(a) Service frequency

The service between Manchester and Blackburn is anomalously low, with an hourly service operating at all times other than the morning and evening peak. This increase to a half hour service is geared towards commuters into Manchester and Bolton. However, as 85% of total passenger journeys on the line are internal, the inter-peak hourly service does not meet customer demand.

In contrast Hebden Bridge, which has a population under 5,000, has three trains an hour to Manchester, some taking just over half an hour. Similarly Preston, which has a similar population level to Blackburn with Darwen, has four trains per hour with journey times from 36 minutes. The borough's level of rail service therefore appears particularly limited for an area with a population of over 140,000.

The potential to increase the frequency of this service is prevented by the existence of a predominantly single line track between Bolton and Blackburn. The physical infrastructure of the line could not support an increase in service level, despite the clear demand.

(b) Train capacity

As of December 2011, the Bolton corridor was understood to be the most crowded route in Greater Manchester, with 45% of 0800-0859 peak services exceeding total capacity. The Ribble Valley Line (from Manchester to Clitheroe) is used by over 1.9m passengers per annum which is considerably heavy relative to service provision.

Passenger demand for the service has grown steadily over recent years, to such an extent that peak services into Manchester on mornings and out of Manchester during the evenings have become very overcrowded. Since 2007/08 growth on the line has increased by 24%. Considerable growth was noted in 2011/12, 14%, which was nearly double the national UK rail demand growth (see table 3.1).

Year	Journeys per annum	Annual growth
2007/08		
2008/09		1%
2009/10		-2%
2010/11		5%
2011/12		14%
2012/13		2%
2013/14		2%

Table 3.2: Passenger growth on the line

Growth has continued at a more stable level since 2011/12 but if this growth is sustained, journeys on the route exceeding 2 million per annum can be expected by 2014/15. Growth is expected to continue on the line to the extent that by 2024, 78% of the 0800-0859 peak services will exceed capacity.

The most obvious method to increase capacity on the line is to increase the number of services per hour. However as previously discussed, the physical infrastructure of the route is not sufficient to cater for an increase in service level.

(c) Service performance

The service between Blackburn and Manchester is one of Northern Rail's most popular; however it is also one the worst performing. The single line sections of the track contribute to reactionary delays, while trains await access to the single line. The annual delay attributed to this problem is 1,000 train minutes on this route alone. In 2010 it was noted by Network Rail that the Clitheroe to Manchester Victoria service was in the bottom half of the performance league table for Northern Rail.

The poor quality rolling stock of the line also contributes to daily delays and disruption. The ageing rolling stock struggles with accelerating on hilly inclines giving slow journey times. It typically takes 50 minutes to cover the 24.5 miles from Manchester Victoria to Blackburn at an average speed of less than 30mph. This unreliable service reduces the attractiveness of rail as a viable form of travel between Lancashire and Manchester. Not only are these trains inefficient, they are also disliked by passengers for their uncomfortable ride, poor internal fitting and general image.

(d) Station facilities

Many of the stations along the line are of poor quality and create a negative image of rail in the borough. Very few of the stations have customer information screens or adequate waiting areas creating a poor quality environment for customers. Darwen and Blackburn stations have benefited from recent investment, but the other stations along this line are run down with a poor public realm.

The key issue here is around 'image' and ensuring that rail infrastructure is attractive to potential users. At present, rail is not necessarily seen as an attractive mode of travel, but the only viable method of travel for many. To encourage rail growth and encourage people to switch from car use to more sustainable methods of travel, it is important that station infrastructure is improved.

(e) Rail growth

Rail growth across the North West is expected over the coming years to support economic growth and prosperity in line with The Long Term Rail Strategy for the North of England (2014). However, a growth in rail passenger numbers in East Lancashire is constrained by the insufficient service to Manchester. The barrier to rail growth is both in terms of the physical capabilities of the service and the mentality of residents. The current rail service does not have the capacity to sustain an increase in rail travel but also the poor image of the service does not encourage potential users to switch to rail. Improvements to the service frequency, train capacities, service performance and station facilities are therefore required to ensure that rail growth can be realised in Lancashire.

3.10 What issues is this causing?

Issues on the Bolton to Blackburn rail line is causing a number of issues which can be categorised as either economic or social.

(a) Economic

The long journey time and frequent delays on the line between Blackburn and Manchester act as a barrier to residents accessing employment opportunities in Greater Manchester. Despite many jobs in Manchester being of a higher wage with better prospects, many residents in Lancashire are unwilling or unable to travel such a distance given the poor travel options available. This issue is exacerbated by an excess of labour in Blackburn with Darwen compared to a surplus of employment opportunities in Greater Manchester. However if the necessary transport infrastructure is not in place, people cannot access these sites of opportunity and a high level of unemployment will continue in the borough.

It is not only rail routes into Manchester that are congested, key roads into the city also operate over capacity at peak times. There is an increased demand for travel into Manchester which is not being met by either the road or rail network. This compounds the ability of people to access this regional centre. Therefore the economic benefits that could be gained from East Lancashire residents working in Manchester but spending their income in Lancashire are not being realised.

(b) Social

As previously discussed, Blackburn with Darwen suffers from a higher concentration of deprivation than the national average and high levels of inequality. 43% of households in Blackburn with Darwen do not own a car which increases to 52% in some of the most deprived wards. These households are dependent of public transport for their travel needs, limiting the distance that they can travel. Despite the current poor service, rail is still preferred over bus travel. However, the current rail service limits people's travel horizons, demonstrated by 85% of rail passengers using the rail line for internal travel.

The current rail service cannot support the increase in population and associated housing growth in the borough over the coming years. An increase in usage due to population increase will place further pressure on the service and deliver an even poorer service. This will create even worse connectivity for local residents and compound high deprivation levels.

3.11 Solutions to this issue

Over the past decade or so, a number of options have been considered to improve connectivity between Pennine Lancashire and Manchester. Figure 3.6 outlines the development of these options from stage 1 which took a multi-modal approach, stage 2 which focussed on options to improve rail links to stage 3 which looked at physical improvements to the Blackburn to Bolton rail line.

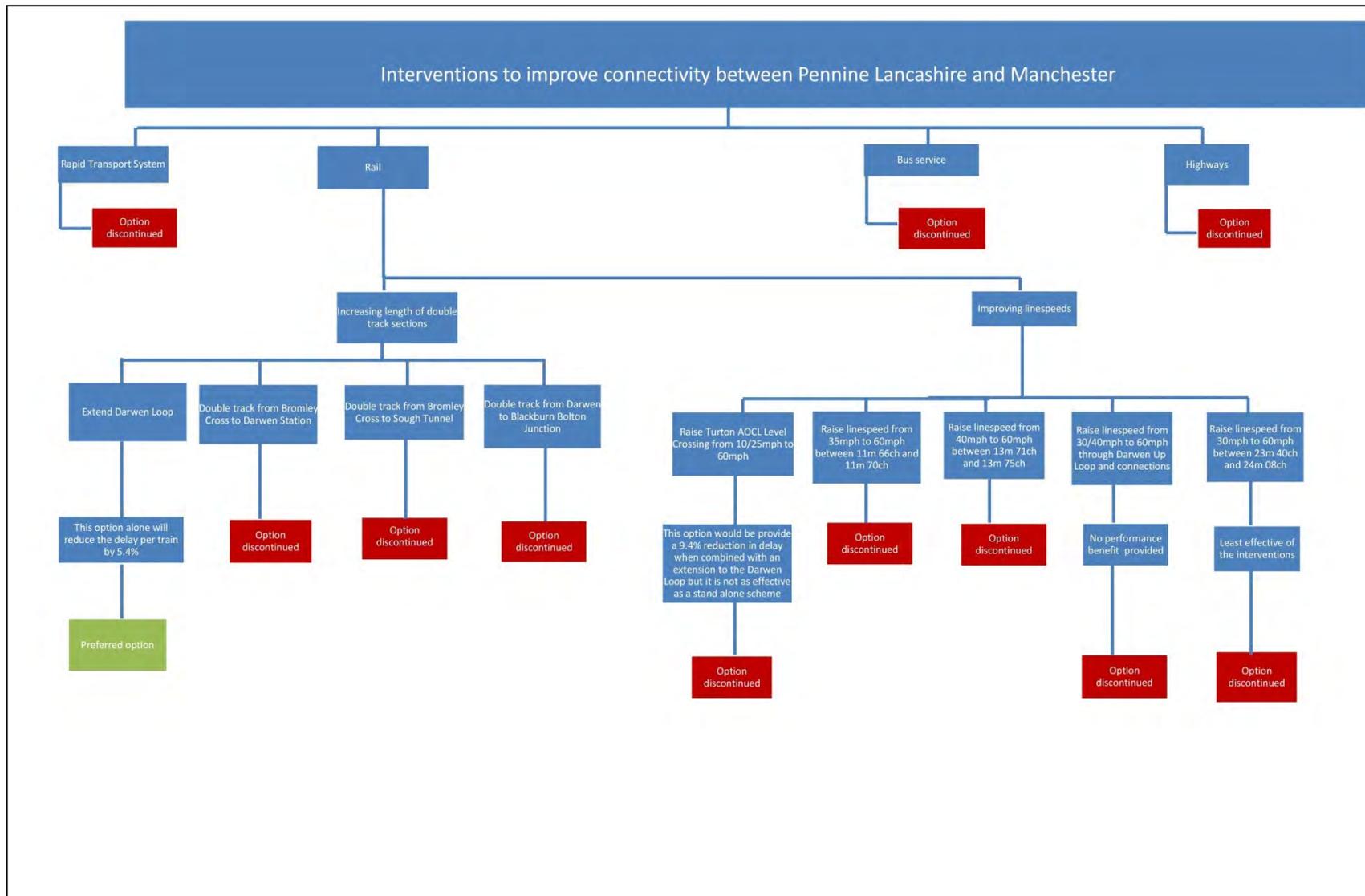


Figure 3.7: Proposed interventions to improve connectivity between Pennine Lancashire and Manchester

3.11.1 Stage 1

During stage 1 of the options development process, a multi-modal approach was taken to assess viable options to improve connectivity.

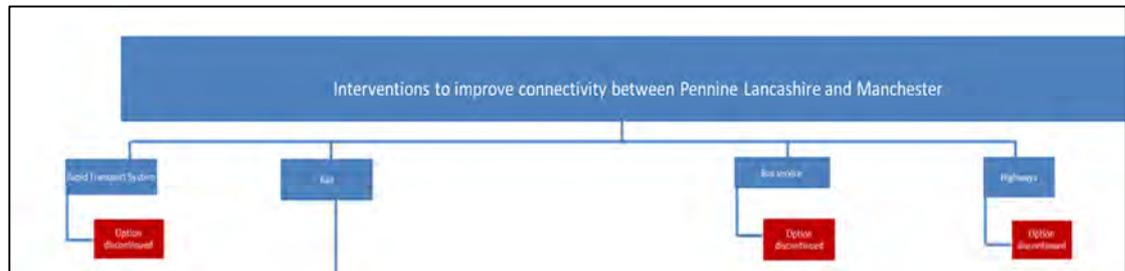


Figure 3.8: Stage 1

(a) Rapid Transport System

In 1999 Sinclair Knight Merz (SKM) were commissioned by the East Lancashire Partnership to carry out a pre-feasibility study of the opportunities for the development of a rapid transit system for East Lancashire. Despite its proximity to the international cities of Manchester, Liverpool, and Leeds, East Lancashire was noted in some ways as an isolated area, with unique problems and opportunities. The study brief aimed to increase mobility and develop networked communities, while reducing the use of private transport. A rapid transit system was seen as a possible way of achieving these goals.

Whilst the aim of the study was to examine the viability of a Rapid Transit System linking the main towns of East Lancashire and evaluation proved a core scheme to be broadly viable there was recognition that heavy rail improvements within East Lancashire were also required.

(b) Bus/highways

The work from SKM eventually led to the successful funding application to the DfT for the Pennine Reach Rapid bus transit scheme which is now being delivered across Hyndburn and Blackburn and Darwen.

Pennine Reach is a £40m major transport scheme which will see significant investment in the local highway and public transport infrastructure between Accrington, Blackburn and Darwen.

Through a mix of highway improvements, new technology and high quality buses operating along improved routes with greater ticketing choices, Pennine Reach is designed to make public transport more attractive and a real alternative to the private car.

(c) Rail

The SKM report noted that the development of an enhanced public transport network for the region also required investment in the local heavy rail network with improved service frequencies to Manchester and Leeds identified as a priority.

Pennine Reach fully recognises the importance of interchange between bus and rail for greater connectivity East and West and North and South and has therefore been

delivered to support future development of the service pattern and quality of the heavy rail system.

Ultimately, in parallel to the development of the local bus network since 2002, a number of studies have and continue to investigate the options for enhancing rail connectivity from East Lancashire. An immediate focus was improving connectivity to Greater Manchester with particular reference to improving service frequency along the Ribble Valley line.

3.11.2 Stage 2

During the second stage of the options development process, a focus was placed on options to improve the rail connection between Pennine Lancashire and Manchester.

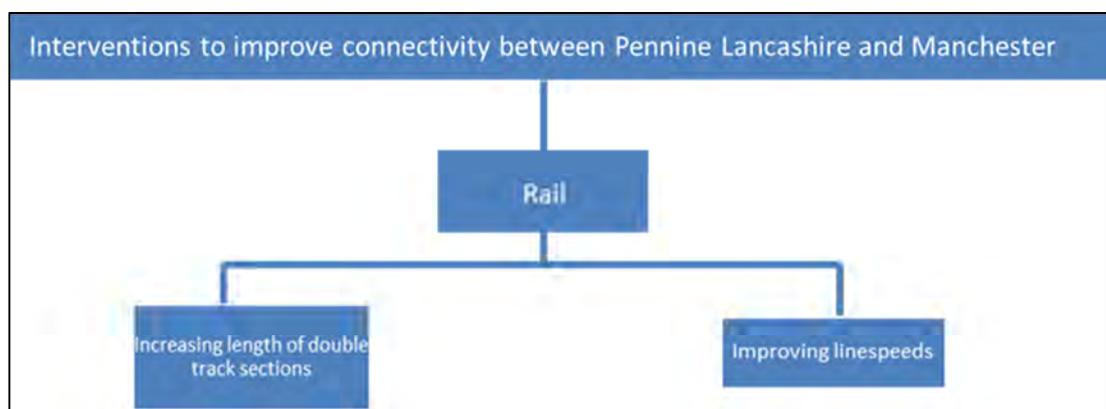


Figure 3.9: Stage 2

Over the past decade a series of feasibility studies have been commissioned examining the potential for improvements on the rail line between East Lancashire and Manchester.

(a) Posford Rail Ltd 2002

In 2002 Posford Rail Ltd conducted the East Lancashire Rail Infrastructure Feasibility Study. This comprised capacity modelling, service options and engineering feasibility across the East Lancashire Network. The study identified that whilst all day half hourly service would be possible within existing infrastructure constraints, it would not be operationally robust and therefore subject to extensive reliability problems.

Conclusion:

- Double tracking required in order to achieve required levels of operational robustness
- In addition, a section of restricted line speed identified for improvement in order to contribute towards robustness of service and small journey time saving

(b) VST York Ltd 2003

Following on from the Posford Study, in 2003 VST York Ltd were commissioned to undertake a timetabling study specifically focussing on service enhancements on the Clitheroe – Manchester line.

Conclusion:

- The findings from this work were that technically a half-hourly service could operate on the line but that infrastructure constraints, in particular the extent of single track formation, meant that service reliability would be significantly compromised.

(c) Eden Business Analysis 2004

Eden Business Analysis built on these studies in 2004 with an examination and appraisal of options for service enhancement. This work had a backdrop of increasing passenger demand and consequent crowding on peak services between Blackburn and Manchester. As such it considered service frequency and train lengthening enhancements including a desk top analysis of enabling infrastructure interventions. The analysis included forecasts of passenger demand and revenue, cost estimates and benefits evaluation which were used in the production of a high level business case.

Conclusion:

- In each case none of the options had benefits greater than costs (BCR less than 1)
- The best BCR was only 0.66 (option 3: half hourly service interval Man-Clitheroe with no peak lengthening)
- There appeared to be little scope to achieve a BCR of 1.0, let alone the aspiration to achieve 2.0 to have qualified for consideration for SRA funding
- The high level of initial outlay was the main reason for the poor Net Present Value

(d) Faber Maunsell 2007

Within the 2007 Faber Maunsell report a number of options were tested:

1. Half hourly service in the inter-peak between Blackburn & Bolton
2. Half hourly service in the inter-peak between Blackburn & Manchester
3. All day half hourly service between Clitheroe & Manchester Victoria
4. Peak service train lengthening
5. Combination of options 2 & 4.

The appraisal demonstrated that a positive economic business case is achievable for some of the options being considered. The evidence from the analysis appeared to suggest that the following are critical to ensuring that the business case is positive:

- That the additional rail services must provide direct links to/from Manchester;
- That the initial capital costs must be kept to a minimum (i.e: no 'gold-plating');
- That the additional interpeak services are operated by marginal use of existing rolling stock;
- That extension of additional services to Clitheroe will not generate enough benefits to outweigh the increase in costs; and
- Peak train lengthening generates a positive return.

Conclusion:

The report noted that all the options were rated relatively low in terms of both the BCRs and affordability, confirming the importance of minimisation of costs. Whilst the report's recommendations were fed into the North West RUS undertaken by

Network Rail in 2007 it was acknowledged that further investigation works were required given that their own examination revealed capital costs to be in the region of £20m:

“The appraisal of this option results in a BCR of 0.9. A sensitivity test was undertaken to examine the impact of assuming no additional staff would be required to operate this service during the off-peak. Under this assumption the BCR rises to 1.5. However neither of these quantifications includes the likely requirement for infrastructure enhancement north of Bolton, which is anticipated to cost over £20 million”.

(e) Arup 2009

A further timetabling study was conducted by Arup in 2009 with the specific objective to illustrate the viability of implementing the half hourly service frequency enhancement. Arup were commissioned by BwDBC to undertake a desktop timetable study for the Manchester to Blackburn/Clitheroe rail corridor. The key objective was to demonstrate the viability of implementing a half-hourly, off peak rail service between Manchester and Blackburn.

The study was based on graphical methods and was not verified by a full operational analysis using industry standard software such as RailSys.

Conclusion:

- Assuming the current timetable (Dec 2008 timetable and current ROTP) a half hourly off peak train service cannot be run reliably
- A compliant solution can be achieved by extending Darwen loop approximately 1 mile in each direction, but this creates significant performance risk at Darwen and possibly Astley Bridge Junction, due to the tight margins for trains leaving and entering the single line sections.
- Converting Turton level crossing to full MCB-CCTV spec would save 1 min on Blackburn to Bolton journey times, which could be used to improve service reliability
- Total number of train sets required to run the service will increase from the current 3 to 5 if a half hourly service were to be introduced (assuming it ran just to Blackburn)
- The overall costs for Darwen redoubling and Turton level crossing line speed increments assuming a MCB-CCTV upgrade, at +/- 50% estimating accuracy, would be between £13.5m to £14m (assumes a 0% optimism bias for Turton level crossing).

(f) Network Rail 2010 – present

In March 2010 Blackburn with Darwen Borough Council signed a standard fast track agreement with Network Rail to deliver Grip stages 1 -3. The outputs from the Arup timetable study formed the background for a Network Rail GRIP 1 - 2 Option Appraisal study (undertaken by Mott MacDonald on behalf of Network Rail) which considered a range of infrastructure interventions that would enable the proposed frequency improvement to be implemented without causing deterioration of service reliability.

Conclusion GRIP 2:

- 9 possible interventions were identified to improve the capacity of the line between Bolton and Blackburn, one of which had 3 sub options
- These were assessed in relation to their affordability and the scale of the benefit that they were anticipated to provide
- 5 of the interventions were considered worthy of further investigation within GRIP 3

Grip 3 concluded that the extension of the Darwen Loop, was found to be both realistic and affordable, whilst providing an acceptable level of additional robustness to train operations between Bolton and Blackburn.

A revised estimate for GRIP stages 4 -8 of £13.816m was provided.

In 2014 the scheme was taken to Approval in Principle (AIP) stage following further refinement of design and a full QCRA undertaken in Feb 2014.

Conclusion GRIP 3:

- The scope of works identified and priced by Network Rail were an extension of the passing loop (double track section) at Darwen station by 1410 metres south and 1310 metres north of the existing loop along with associated signalling and structures work
- In total 5 km of new track, 5 km of track tamping, 1.3km of track sluing, 7 new signals and 5 recoveries plus associated modifications at local signal boxes, 2 full bridge re decks, 3 retaining wall modifications and telecoms upgrades will be required
- An emerging cost contract for Grip stages 4 – 8 was identified as £13,680,000 – a figure which included for a package of investment at local stations to improve the waiting environment and passenger information

(g) Mott MacDonald 2012 – present

In June 2012 consultants Mott Mac Donald were appointed to refresh the business case for the investment in the local rail infrastructure required to deliver the half hourly service frequency and to assess the wider economic impacts.

A refreshed business case was developed in November 2014 taking account of changes to WebTAG guidance in 2014 and following the publication of Network Rails GRIP3 report and the further refinement of the scheme to the advanced Approve in Principle stage.

Conclusion:

- The core benefit to cost ratio for the scheme accounting for Wider Economic Benefits and optimism bias adjustments is 2.55.
- The BCR however rises to 2.84 when optimism bias is excluded as is considered justified and discussed in more detail in Sections 4 and 5.
- The scheme will result in significant increases in the use of rail on the corridor, with total flow journey increases forecast of 5% across all journeys (ranging up to 16% for local journeys) and proportionately greater increases at the particular times of day when the new services are running.

3.11.3 Stage 3

During stage 3 of the options development process, options to extend the double track sections of the Blackburn to Bolton rail line were considered.

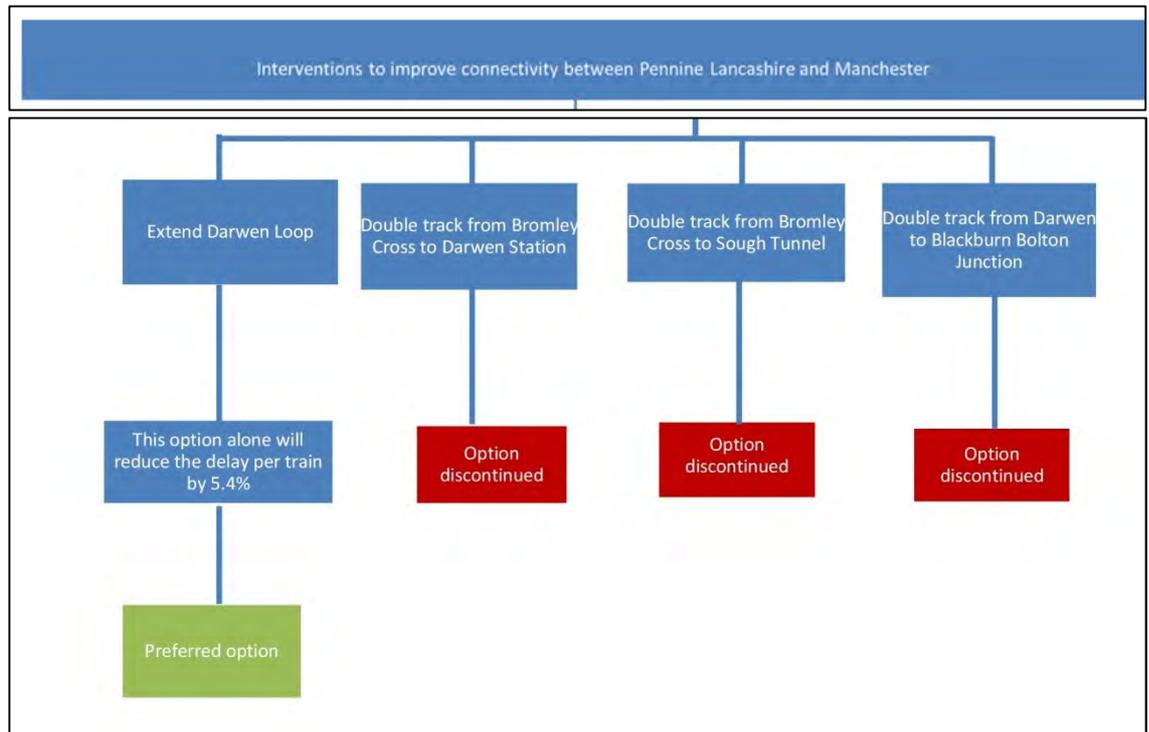


Figure 3.10: Stage 3

During the third stage of options assessment (GRIP 3), a number of potential interventions were examined which were identified in the GRIP 2 report. These options were narrowed down based on their affordability and scale of benefits.

The GRIP 3 report is included in **Appendix O**.

The GRIP 2 report identified 9 possible interventions to improve the capacity of the line between Bolton and Blackburn, one of which has 3 sub-options. These were assessed in relation to their affordability and the scale of benefit that they were anticipated to provide. 5 of these options were considered worthy of further investigation.

Further development works were undertaken in two phases. Phase 1 comprised performance modelling to ascertain the impact of each intervention to determine more accurately the benefit that each would provide. From this, 2 interventions were taken forward for further development.

The table below outlines the results of this assessment.

Intervention	Pros	Cons
Intervention 1: Extend Darwen Loop	<ul style="list-style-type: none"> Reduce the delay per train by 5.4% 	
Intervention 5: Raise Turton AOCL Level Crossing from 10/25mph to 60mph		<ul style="list-style-type: none"> Cost significantly greater than assumed at GRIP 2
Intervention 8: Raise linespeed from 30/40mph to 60mph through Darwen Up Loop and connections		<ul style="list-style-type: none"> No performance benefit provided Not good value for money
Intervention 9: Raise linespeed from 30mph to 60mph between 23m 40ch and 24m 08ch (Blackburn Bolton Junction)	<ul style="list-style-type: none"> Small reduction in delays 	<ul style="list-style-type: none"> Least effective compared of the interventions (excluding intervention 8) Not good value for money
Combine Intervention 1 and Intervention 5	<ul style="list-style-type: none"> Reduce the delay per train by 9.4% Effective mitigation to the performance impact of the introduction of additional services 	

Table 3.3: Advantages and disadvantages of the proposed interventions

3.12 Objectives

3.12.1 Scheme Objectives

The objectives of the Blackburn to Manchester Rail Corridor Improvements Scheme are as follows:

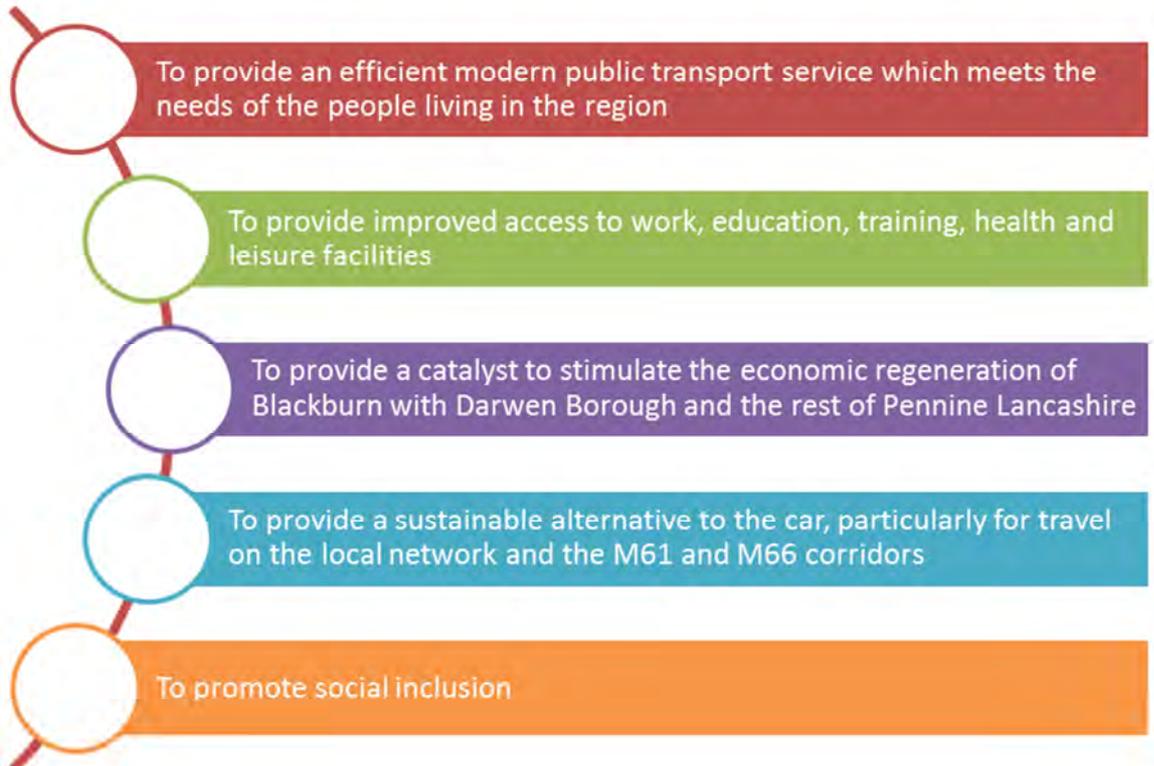


Figure 3.11: Scheme Objectives

3.12.2 Objectives fit

The scheme objectives have been derived following the development of the three Local Transport Plans dating back to 2001 and the development of the Community Rail Partnership Action Plan for the Clitheroe line dating back to 2006/07.

The following table indicates the strategic fit between the objectives and relevant planning policies.

Objective	Fit with identified issue	Fit with local and regional policies
To provide an efficient modern public transport service which meets the needs of the people living in the region	Demand for a more frequent and upgraded rail service	Improve access into areas of economic growth and regeneration (Lancashire Local Transport Plan 2011-2021)
To provide a catalyst to stimulate the economic regeneration of Blackburn with Darwen Borough and the rest of Pennine Lancashire through improved access to work, education, training, health and leisure facilities	Surplus of labour Poor travel horizons Economy behind the regional and national level Demand to access employment opportunities in Manchester	Provide better access to education and employment (Lancashire Local Transport Plan 2011-2021) Support the economic development of East Lancashire and of the county as a whole (East Lancashire Highways and Transport Masterplan 2013) Deliver opportunities which maximise jobs and growth (Lancashire Strategic Economic Plan 2014)
To provide a sustainable alternative to the car, particularly for travel on the local network and the M61 and M66 corridors, reduce carbon emissions and promote social inclusion	Low levels of car ownership High levels of congestion on roads into Manchester High levels of deprivation in close proximity to the rail line High levels of inequality	Provide safe, reliable, convenient and affordable transport alternatives to the car (Lancashire Local Transport Plan 2011-2021) Ensure that local people benefit from economic growth and have sustainable access to services and facilities (Blackburn with Darwen Core Strategy (2011))

Table 3.4: Objectives fit

The scheme and the objectives are wholly consistent with plans for regional network improvements and economic development prepared by stakeholders across the length of the route, contributing to prosperity both by the enhancement of accessibility in Blackburn with Darwen and Bolton local authority areas, and by enhancing the catchment for labour and for retail, entertainment, health and educational establishments available to the core of the Greater Manchester conurbation.

3.13 The proposed scheme

Following an assessment of the proposed options at stage 3, a preferred option was identified. This option will extend the double track line along the Darwen Loop to reduce train delays and allow more services to operate efficiently.

In addition, a series of station upgrades to stops on the line (including several north of Blackburn) are proposed to encourage greater use of rail by improving the waiting environment, weather resilience and information accessibility of key stations.

3.13.1 Description

The Blackburn to Manchester Rail Corridor Improvements Scheme will deliver a half-hourly service between Blackburn and Manchester throughout the day through the addition of 7 journeys between these stations each day Monday – Saturday. This increased service level will cater for the current demand and improve the economic relationship between East Lancashire and Greater Manchester.

The additional services will primarily impact the stations who are not currently served by a half-hourly service in the inter-peak, namely; Hall’l’t’h’Wood, Bromley Cross, Entwistle, Darwen and Blackburn.

In order to deliver a robust half hourly service throughout the day an extension to the passing loop (double track) at Darwen is required. The project as identified by Network Rail is to extend the double track section known as the Darwen loop to run from approximately 19 miles 440 yards to approximately 21 miles 440 yards on the Bolton to Blackburn Line, with associated works at structures along that part of the route. The full scope of works is as follows:

- 3200m of new track and formation work
- 2 new turnouts
- Signalling works
- Widen underbridge 42 (Turncroft)
- Re-deck underbridge 47 (Cotton Hall St.)

In addition, the scheme includes enhancement works at selected stations on the line (including stations north of Blackburn). This work includes the following:

- **Clitheroe:**
 - Fencing repair and repaint;
 - New waiting shelters;
- **Whalley:**
 - New waiting shelters;
 - Fencing repair and repaint;
- **Langho:**
 - Customer Information Screens;
 - Fencing paint;
 - Anti-vandal shelter;
 - Shelter repair;
 - New sign;

- **Ramsgreave and Wilpshire:**
 - Fencing paint;
 - Anti-vandal shelter;
- **Entwistle:**
 - Fencing repair and repaint;
- **Darwen:**
 - Additional shelters

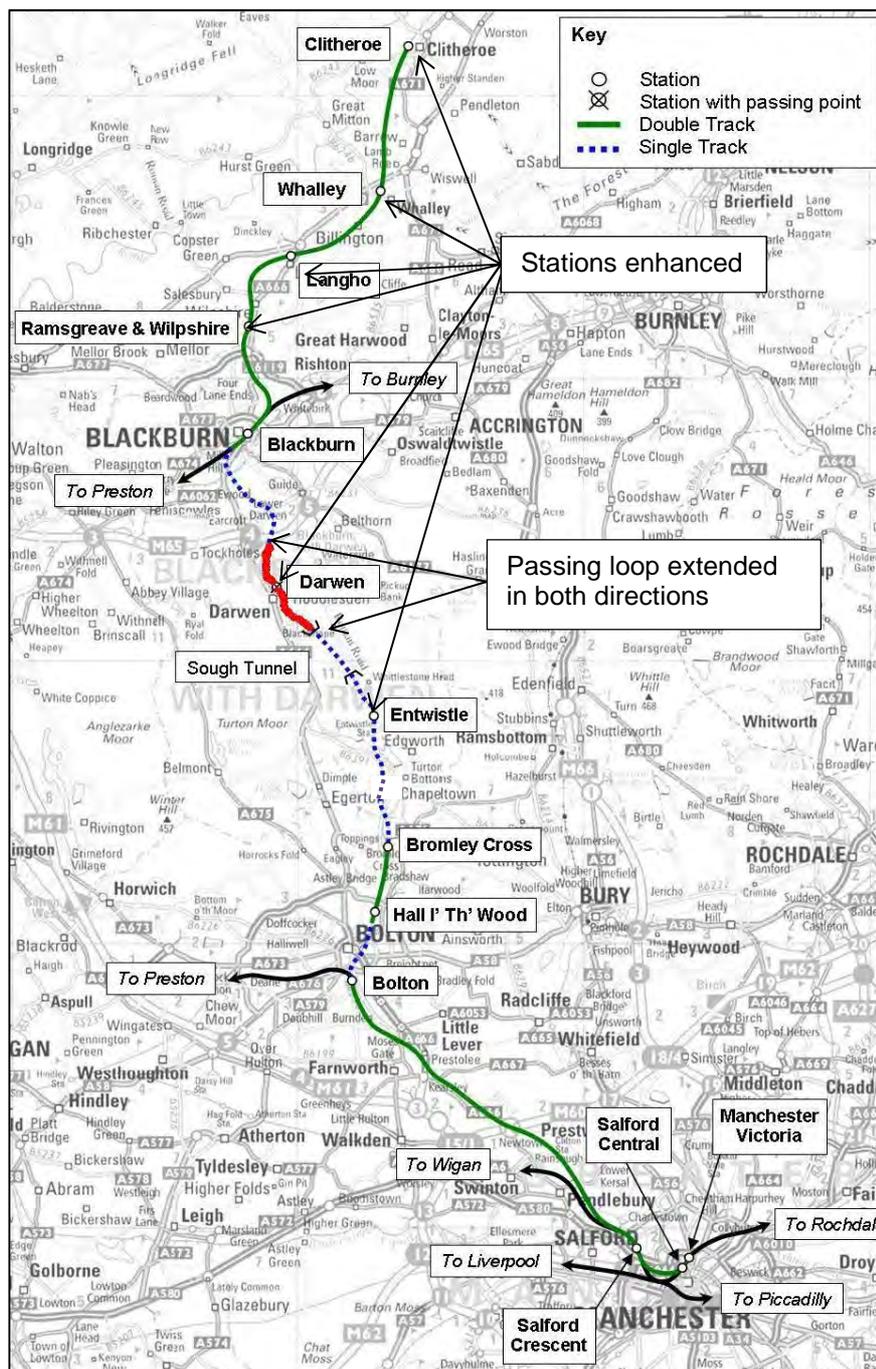


Figure 3.12: Overview of Proposed Enhancements

3.13.2 Benefits

Improvements to The Blackburn to Bolton Rail line will provide a wide range of operational and strategic benefits, as identified in Figure 3.13.

Operational benefits:

- The additional 7 services per direction will double the train frequency in the inter-peak period from 10 am till 5 pm;
- The incremental number of inter-peak rail users will contribute to the reduction of 460,000 vehicle km per year (2035);
- The avoided car kilometres will result in the lower number of accidents on the highway network.

Social benefits:

- Improved rail access will support primarily the non-work facilities in the proximity of railway stations (shopping and leisure time centres, health and education facilities), but the secondary effect will impact on the housing and employment issues as well;
- The enhanced inter-peak frequency will be beneficial for those connecting into other services at Bolton, Manchester or Blackburn, with the key destinations such as Stockport, Manchester Airport, Warrington, Wigan, Preston and Leeds;

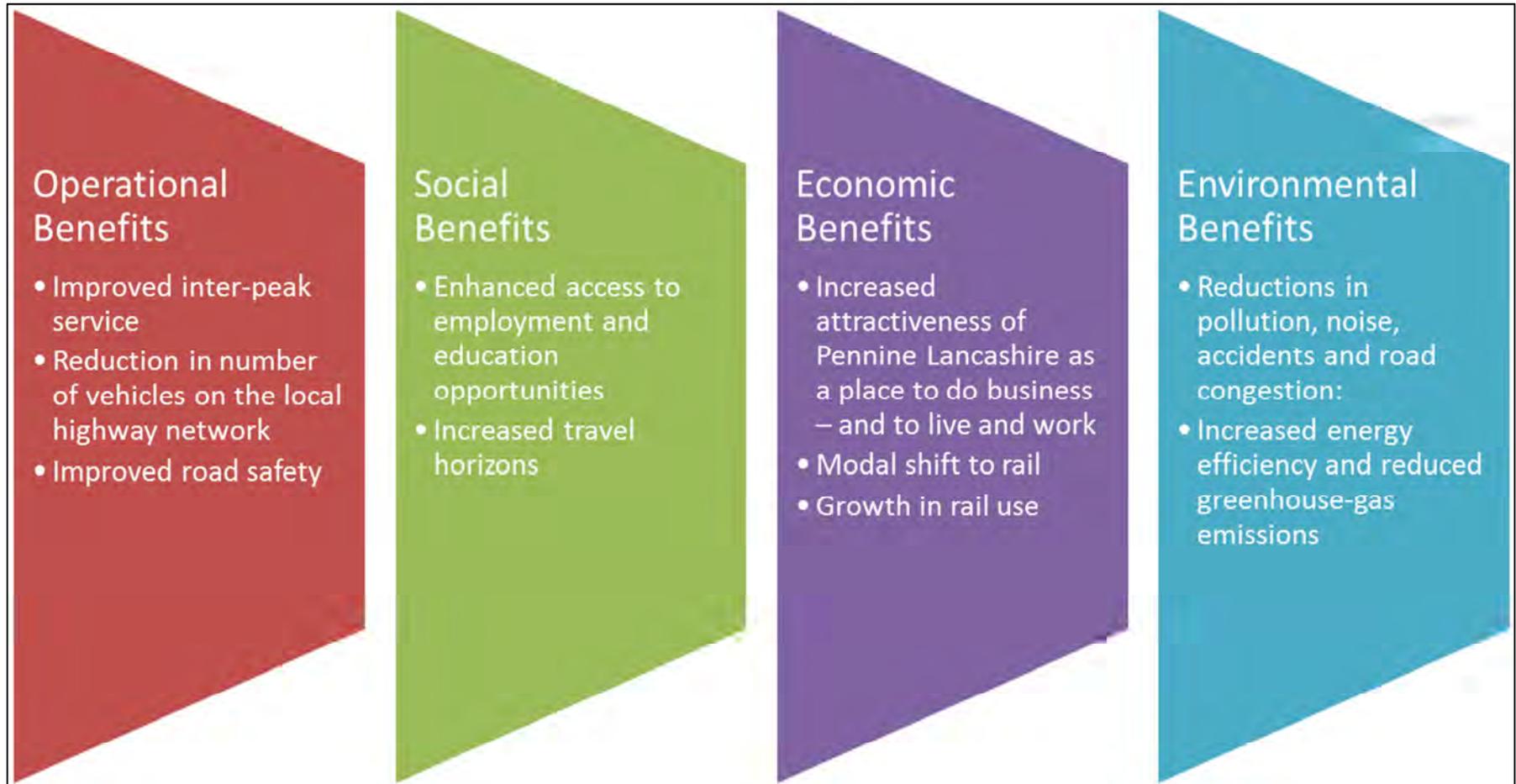
Economic benefits:

- Improvements to rail connectivity contribute to the Blackburn with Darwen's Infrastructure Delivery Plan (2014) and underpin the development of employment sites, housing growth, successful school provision and attractiveness of leisure time facilities.
- According to the passenger demand forecast, 81,500 rail users will be attracted in addition to the general demand estimations due to increased inter-peak train frequency (year 2035).

Environmental benefits:

- As a result of the scheme almost 460,000 vehicle kilometres annually are forecast to be removed from the highway network in 2035 and onwards. This results in benefits being provided particularly around road decongestion and safety, together with associated carbon benefits; each of which are key objectives of local and national policy.

Figure 3.13: Operational and strategic benefits



3.14 The impacts of non-delivery

The Do-Minimum (non-delivery) assumption is that the line's train timetable will remain unchanged from its current pattern, excepting that under the 'Northern Hub' scheme an additional hourly train service will be provided throughout the inter-peak between Manchester Victoria and Bolton, but not further north between Blackburn and Bolton. Also the infrastructure improvements to the railway track and stations would not be delivered.

The range of impacts covers the areas as explained in the subchapters below:

- Operational performance and reliability;
- Passenger patronage;
- Modal shift to cars.

3.14.1 Operational performance and reliability

Without the proposed scheme, the service between Blackburn and Manchester will remain one of the worst performing of Northern Rail's network. The single line sections will contribute to reactionary delays, while trains await access to the single line. The annual delay attributed to this problem is almost 2,000 train minutes on this route alone. The implementation of the scheme will reduce the figure to less than 1,200 train minutes.

The issue of service reliability will impact the full day timetable, not only the inter-peak period where the new services will be added.

As of December 2011, the Bolton corridor was understood to be the most crowded route in Greater Manchester, with 45% of 0800-0859 peak services exceeding total capacity. Growth is expected to continue on the line to the extent that by 2024, 78% of the 0800-0859 peak services will exceed capacity. These problems could be tackled by adding more carriages to the peak trains, but with low levels of reliability, the overall improvement outcome would be limited.

It should be noted that the non-delivery scenario will not have any direct impact on scheduled train times and speeds on the section from Blackburn to Bolton, with the persistent occasional delays which cannot be predicted in the regular timetable (as explained above).

3.14.2 Passenger patronage

The non-delivery option would preclude the incremental passenger patronage growth as calculated in the forecasting model based on MOIRA flow matrix demand data (details of this can be found in the chapter 4).

If the ramp-up factors reflecting the gradual impact of additional train services on passenger demand are excluded, the base forecast year (2016) figures show that the scheme will result in significant increases in the use of rail on the corridor, with total flow journey increases forecast at 5% across all day journeys (ranging up to 16% for local Blackburn to Darwen journeys).

The Do-Minimum scenario therefore clearly reduces the passenger demand on the Blackburn to Bolton section of the railway by 5% compared with the Do Something.

Journey type	Current journeys	Incremental journeys	Change
Local direct (BBN-DWN)			16%
Other direct			4%
Other indirect			5%
Total			5%

Table 3.5: MOIRA Annual passenger forecast for Blackburn to Bolton rail journeys (base year 2016)

Taking into account the future mobility growth as well as the demand ramp-up factors (until 2020), the development of the additional service impact can be seen within Section 4.3.4. This shows that the additional inter-peak services are expected to contribute [REDACTED] journeys in the cap year 2035. These incremental journeys would not be realised in the case of non-delivery.

3.14.3 Modal shift to cars

The diverted car-km, per rail passenger km, has been informed by Table 1 of TAG unit A 5.4, which indicates that 26% of rail passenger km replace highway km undertaken as a car driver. The remainder is accounted for by multiple occupancy of cars, by rail usage being also derived from bus users or non-travellers, and from making longer journeys (WebTAG Unit 5.4, sect 2.2.3).

Year	* 2016	** 2035
Annual change in rail journeys		
Annual change in rail passenger km		
% Abstraction from car	26%	26%
Annual change in highway km		

Table 3.6: Diverted car-km as a result of the additional services on Blackburn to Bolton railway
(*... for calculation purposes only, the scheme won't be in operation until 2017)
(**... cap year for demand forecast)

Table 3. shows how many vehicle kilometres can be avoided if the Do-Something scenario is implemented. In the case of non-delivery, almost 460 thousand car km will be loaded onto the highway network in the cap year 2035. It should be noted that the 2016 figure excludes the ramp-up factors and has been inserted to show the direct connection with the MOIRA annual passenger forecast.

3.14.4 Reduced Economic Growth

The sub-sections above highlight how non-delivery of the proposed Blackburn to Manchester Rail Scheme reduce the potential for Blackburn with Darwen and surrounding areas to achieve their potential for economic growth. The constrained nature of the existing rail provision, and the limited services that currently operate serve to suppress rail demand to such an extent that road use is oversubscribed and roads are consequently overcapacity. In the event of non-progression of the project, this situation would continue to deteriorate until no further traffic can be accommodated on the network, effectively limiting growth in the region.

At the same time, the suppression of passenger numbers on the railway will continue with a projected 5% potential increase in passengers negated. This will further constrain the ability for the area to grow economically with potential travellers effectively prevented from travelling to access employment or other opportunities.

As such, it is clear that non-implementation has a significant economic detriment to the borough and the communities along the rail line when compared with the implementation scenario.

3.14.5 Conclusion

For these reasons it is considered critical that the scheme progresses as envisaged since to do otherwise would allow operational performance and reliability on the Blackburn to Manchester route to continue to deteriorate, the benefits of increasing patronage and farebox revenue to be lost, and the addition of hundreds of thousands of additional vehicle journeys onto overloaded highways in and around Blackburn with Darwen and East Lancashire.

3.15 Support for scheme

The proposed improvements to the Blackburn with Darwen rail line support national, regional and local policy. The scheme is also supported by a number of groups including local MPs, local transport plans, the rail industry and the public. This section outlines support for the scheme in addition to how the scheme supports wider policies.

3.15.1 Policy

In the political context, the scheme fits with national, regional and local policies as outlined in this section.

(a) Contribution to National Government Objectives

During recent years, National Government policy has had a strong focus on the importance of transport investment for economic growth and the crucial role that transport plays in everything that we do. A high-performing transport network which works as a connected whole has been identified as imperative for the UK to compete in the global market.

The following table summarises the national view from relevant documents:

Policy Name	Comments	Strategic Fit
The National Transport Strategy 'Transport: An Engine for Growth' (2013)	The strategy notes that transport investments should support jobs, strengthen the supply chain and help position the UK as a global leader for transport and innovation. The Government's Plan for Growth (2011) identifies a key objective to 'achieve strong, sustainable and balanced growth that is more evenly shared across the country and between industries.' An improvement in regional connectivity through this corridor improvement scheme will improve access between Lancashire and Manchester. This will enable people from East Lancashire to travel into Greater Manchester to access more employment opportunities with better prospects, helping to share some of the economic growth and prosperity in Manchester with Lancashire.	Good fit
'Creating Growth, Cutting Carbon: Making Sustainable	This document suggests that public transport needs to be more attractive if it is to be a viable alternative to car travel. Improvements to the Blackburn to Manchester Rail Corridor can help to achieve this vision through the provision of an efficient, attractive and frequent rail service that is more attractive and viable than using a car. Providing a half-hourly	Good fit

Local Transport Happen' (2011)	train service, with fewer delays and enhanced station facilities will make rail the mode of choice and an integrated part of local communities.	
Door to Door Strategy DfT March 2013	In order to encourage more use of sustainable and active modes of transport to achieve its goal of reducing carbon emissions from the transport sector. The strategy focuses on four core areas: -accurate, accessible and reliable information -convenient and affordable tickets -regular and straightforward connections at all stages of the journey and between different modes -safe comfortable transport facilities The Coalition Govt has been quick to stress that a modern transport infrastructure is central to improving wellbeing and quality of life. The vision for national transport policy is therefore based on an inclusive, integrated and innovative transport system whereby making door to door journeys by sustainable means is an attractive and convenient option.	Good fit

Table 3.7: National Policy Documents

(b) Contribution to regional objectives

(i).1 Rail

The Blackburn to Manchester Rail Corridor Improvements scheme has the potential to improve connectivity for people and freight through the delivery of a more robust rail line. Additional capacity on the rail line will provide a more efficient and frequent service that will better serve the needs of East Lancashire. An increase to half-hourly services on the line during the peak and inter-peak will provide additional capacity and may drive down the cost of using this service. This is in response to the following document comments:

Policy Name	Comments	Strategic Fit
East Lancashire Highways & Transport Masterplan (2014)	This document suggests that there is a strong belief locally that East Lancashire is poorly connected, with rail links either poor or missing.	Good fit
The Long Term Rail Strategy for the North of England (2014)	This sets out how rail can support the growth of the North of England's economy by improving connectivity for passengers and freight across the North, while at the same time providing a better customer experience and delivering a more efficient and cost-effective railway. The strategy calls for greater capacity on train and on track as well as the creation of a more coherent and cost effective railway.	Good fit
Strategic Economic Plan - a growth deal for the Arc of Prosperity 2014	This notes that East Lancashire faces many more years with rail connectivity limited by speed, frequency and poor rolling stock quality which risks significantly undermining the economic productivity and competitiveness of Lancashire as a whole.	Good fit

Table 3.8: Rail Objectives

(i).2 Economic Growth

The Blackburn to Manchester Rail Corridor Improvements scheme has the potential to support economic growth in East Lancashire and beyond. Increased frequency of the service will encourage people to look further afield for employment to cities such as Manchester where prospects are greater and wages are higher. The scheme will also help to improve connectivity between the North's major towns and cities, supporting business activity and economic growth.

This responds to the points made in the following documents:

Policy Name	Comments	Strategic Fit
The Long Term Rail Strategy for the North of England (2014)	The document suggests that the economy of the north can be stimulated through improved connectivity with better connections between the North's major centres and major towns and cities.	Good fit
The EU Structural and Investment Funds Strategy for Lancashire 2014 -2020	This suggests that transport infrastructure is a high priority for the LEP in order to support Lancashire's growth sectors and transformational change in the local economy. The strategy notes that the rail network in Lancashire does not cater adequately for the economic growth agenda.	Good fit
The Integrated Economic Strategy for Pennine Lancashire (2009 -2020)	The document indicates that the promotion of links to neighbouring economics, particularly Manchester and Preston, is key to increasing access to employment for Pennine Lancashire residents.	Good fit
The Pennine Lancashire Investment Plan (2013)	This notes the importance of the area connecting effectively with the neighbouring city regions to benefit from deeper labour market and business ties.	Good fit

Table 3.9: Economic Growth Objectives

(ii) Fit with local objectives

(ii).1 Local economy

The Blackburn to Manchester Rail Corridor Improvements scheme can help to support growth in the local economy through increased connectivity between the economies of Lancashire and Manchester. This will allow increased flows between these two areas, bringing economic and employment opportunities.

This relates to the points made in the following documents:

Policy Name	Comments	Strategic Fit
Blackburn with Darwen 'A Plan for Prosperity' (2014-2020)	The document identifies an aim to grow and diversify the economy, ensuring that Blackburn with Darwen is open for business.	Good fit
The Blackburn with Darwen Local Development Framework (2009)	This suggests that the overall strategy for the borough is one of targeted growth	Good fit
Blackburn with Darwen Borough Council's third local transport plan (2011-2021)	This identifies a key goal to support the economy, stating that economic growth is at the heart of local policy development.	Good fit

Table 3.10: Local Economy Objectives

(ii).2 Local labour supply

The Blackburn to Manchester Rail Corridor Improvements scheme will support employment by connecting the excess local labour supply with employment opportunities in Manchester. A more frequent service with increased capacity will increase travel horizons for local residents and enable them to travel further to reach sites of opportunity.

These points respond to the following comments from key documents:

Policy Name	Comments	Strategic Fit
The Blackburn with Darwen Local Development Framework (2009)	As the local economy of Greater Manchester grows in the next decade or so, there will be need to ensure a sufficient supply of labour to meet demand. Blackburn and Darwen are potential areas where an excess supply of labour exists which can service part of this labour need, so long as connectivity is improved and reliability of connections is enhanced.	Good fit
The Blackburn with Darwen 'A Plan for Prosperity' (2014-2020)	The document identifies an aim to improve the employment prospects of residents and ensure that business skills are met.	Good fit

Table 3.11: Local Labour Supply Objectives

(ii).3 Local transport

The Blackburn to Manchester Rail Corridor Improvements scheme can improve the transport network in Blackburn with Darwen by providing a twice-hourly service between Manchester and Blackburn. An improvement in regional connectivity will support flows between Lancashire and Greater Manchester to support access to higher quality employment opportunities.

Policy Name	Comments	Strategic Fit
The Blackburn with Darwen 'A Plan for Prosperity' (2014-2020)	The document identifies an aim for a well-connected and efficient transport network that supports good quality employment and housing sites.	Good fit
The Blackburn with Darwen Local development Framework (2009)	This suggests that there is a need for a consistent level of train service link to Bolton, Salford and central Manchester throughout the day and week.	Good fit
Blackburn with Darwen Borough Council's third local transport plan (2011-2021)	This document notes that the service frequency enhancement of the Blackburn to Manchester part of the Ribble Valley line has been identified as a major transport scheme priority for the borough. The strategy notes that as higher quality employment opportunities in Pennine Lancashire and further Regional Centre development in Manchester/ Salford increase, the role of this rail service can only become more important for regional connectivity.	Good fit

Table 3.12: Local Transport Objectives

(i) Local Transport Plans

The Blackburn to Manchester Rail Corridor Improvements scheme has also been supported in Blackburn with Darwen Borough Council's Local Transport Plans. Since 2001, improvements to the corridor have been prioritised as key transport proposals in the borough. The following table highlights the role that the scheme has played in each transport plan:

Document	Support	Strategic Fit
Local Transport Plan 1 (2001 - 2006)	<ul style="list-style-type: none"> A series of corridor proposals were identified to tackle deep seated transport problems along the corridor running south from Blackburn town centre through Darwen to the Bolton boundary An increasing realisation that the problems do not stop at the Bolton Boundary and that there would need to be a joint approach with Bolton MBC and Greater Manchester PTE to address several issues raised The strategy noted that the Rail Passenger Partnership for the line could lead in the medium term to a proposal to re-instate the second rail track between Blackburn and Bolton as a precursor to operating a much more frequent and attractive rail service along this corridor 	Good fit
Local Transport Plan 2 (2006 - 2011)	<ul style="list-style-type: none"> The scheme featured as a Major Transport Scheme proposal recognising that the enhancement of infrastructure and the service fits with the Northern Way Growth Strategy markedly improving connectivity within and between the North West city regions Aware of the need to develop a scheme which provides value for money, is affordable and deliverable 	Good fit

Local Transport Plan 3 (2011 - 2021)	<ul style="list-style-type: none"> The scheme was retained as a Major Transport Scheme priority The enhancement to the rail corridor also featured within the East Lancashire Highways and Transport Masterplan and subsequently the Lancashire Strategic Economic Plan both developed in 2014 	Good fit
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Table 3.13: Local Transport Plan History

(c) MPs and stakeholders

Throughout the development of this scheme, a number of groups have been consulted as identified in figure 3.14.



Figure 3.14: Key stakeholders

(i) Local MPs

Throughout the development of this scheme, we have spoken to a number of MPs. The scheme has secured cross party political support. In particular, the scheme has gained strong support from two local MPs; Jack Straw MP (Blackburn) and Jake Berry MP (Darwen & Rossendale). The local MPs have identified the huge increase in train passenger numbers, despite the less than satisfactory service, highlighting the potential for passenger numbers if even minor improvements were to happen. The local MPs have also recognised the economic growth Lancashire may experience if local residents could access better paid jobs in Manchester, but still live and spend in East Lancashire.

The following table summarises their key arguments for the delivery of this scheme.

Jack Straw MP (Blackburn)	Jake Berry MP (Darwen & Rossendale)
<ul style="list-style-type: none"> • The campaign for improvement in the services is supported by all the Members of Parliament for the area, all the political parties and all the local authorities affected. • There has been a huge increase in ridership even given the less than satisfactory frequency, reliability and comfort of the current service • Modest improvements in the scale of things would enable there to be dramatic improvements in reliability, frequency and ridership, with major benefits to the local economy. 	<ul style="list-style-type: none"> • Line improvements would benefit residents in Salford, Bolton, Darwen, Blackburn and Clitheroe • There is an overwhelming demand for an improved service, which has already been demonstrated by the increased use • People who work in Manchester are more highly paid than people who have a job within the borough. If we want those high salaries to be brought back into our borough by people bringing their money home at the end of the day to spend in our local economy, we need a regular rail service and a rail link that can be relied on • The scheme is affordable and the cost would be outweighed by the social, economic and leisure benefits for all the residents of east Lancashire • Our roads are among the most clogged up in the country. We rely on our rail system and we need it to be improved • In October

Table 3.14: Support from Local MPs

In addition, Nigel Evans MP (Ribble Valley) has expressed his support and enthusiasm for the scheme.

Letters of support are included within **Appendix R** of this document.

(ii) Key stakeholders

Since the commissioning of the Posford Study in 2002 in partnership with Lancashire County Council the scheme has ensured full rail industry consultation from infrastructure management organisations and the DfT to regional transport bodies and train operating companies, including:

- SRA
- Network Rail
- Rail track
- First North Western
- Northern Rail
- NWRA

(iii) The public

During the past fourteen years, the scheme has undergone considerable scrutiny and consultation. Various public workshops, seminars, drop-in information sessions have taken place and Action Plans have been developed to ensure meaningful public engagement to help develop the scheme alongside wider transport priorities for the borough.

Consultation with the general public and stakeholders will continue with information shared through Community Rail Lancashire and the Councils website. Prior to the commencement of works at Darwen, a public consultation will be arranged to ensure all local interested parties are fully aware of the timescales and affect this will have on the rail line in the interim (bus replacement) and long term (enhanced connectivity).

A Communications Plan is attached as **Appendix T** which summarises the planned levels of consultation that will be undertaken to support the communication and engagement process required for delivery of the Blackburn to Manchester rail scheme project.

(d) Internal or external business drivers

Internal	External
<ul style="list-style-type: none"> The poor connectivity of East Lancashire remains a key concern for policy makers and the LEP An Economic Resilience of Blackburn report undertaken by CLES in 2011 highlighted that the commercial economy around BwDBC is restricted by infrastructural weaknesses with poor rail links having knock on effects for supply chains and competitiveness. The current lack of connectivity to the Manchester City Region is a barrier to growth and sustainability and that it is a hindrance to development, particularly for the commercial property market 	<ul style="list-style-type: none"> Synergy with existing planned investment on the local rail network The Darwen loop extension is phased to coincide with and benefit from synergies with the track possessions for pre-planned work at Farnworth tunnel Pressure from public and rail groups to deliver improvements Pressure from government to encourage economic growth Pressure from national policy to increase rail growth

Table 3.15: Internal or external business drivers

(e) Synergy

The delivery of an extension to Darwen Loop is phased to coincide with the development of the Farnmouth Tunnel electrification works as part of the wider North West electrification programme.

By delivering the infrastructure works during an existing blockade for the line, prelims and build costs become more efficient, track unit rate efficiencies are realised and a reduction in Network Rail management costs is achieved by alliancing with contractor to avoid man marking.

3.16 Conclusion

The rationale for investment in the Blackburn to Manchester Rail Scheme is strong. The scheme delivers on core government objectives at a local regional and national level. Investing in the scheme will address key issues for Blackburn with Darwen, linking to the major employment centre of Manchester and helping to reduce the reliance on the private car, whilst also supporting the wider Lancashire Enterprise Partnership area in terms of growth and regeneration benefits.

It is for this reason that the Blackburn to Manchester Rail Scheme is considered to be one of the top priorities for the area and why it has attracted so much cross-party political and stakeholder support.

4.1 Introduction

The Economic Case assesses options to identify all their impacts, and the resulting value for money, to fulfil HM Treasury's requirements for appraisal and to demonstrate value in the use of taxpayers' money.

The impacts considered are not limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of a proposal are all examined, using qualitative, quantitative and monetised information, as outlined below.

The Economic Appraisal has been tailored to reflect the needs of the Major Scheme Business Case and is discussed under the following headings:

- Methodology;
- Assumptions;
- Transport Economic Efficiency;
- Safety Benefits;
- Environmental and Social Impacts;
- Wider Economic Benefits;
- Appraisal Summary Table (AST);
- Value for Money Statement; and
- Conclusion.

4.1.1 Major Scheme Business Case Update

The only changes to the scheme options as appraised at the time of the MSBC are as follows:

- The commencement date of the scheme has been put back by one year, to December 2017, when it will form part of a package of service changes specified as part of the contract for the renewed Northern Franchise.
- Accordingly, service operational costs no longer form part of the 'ask' for this scheme and are not included in the appraisal.

There has otherwise been no change to the approach to assessing the value for money since the Outline Business Case.

The main findings of this section are as follows:

- The total efficiency benefits of the scheme are estimated to be £28.3m across all modes;
- The wider economic impacts of the scheme are estimated at £15.0m over the period of appraisal;
- Considering appropriate optimism bias and a pragmatic view of likely generated demand, the Net Present Value (NPV) of the scheme is £22.3 million, and the Benefit to Cost Ratio (BCR) is estimated at **4.63**;
- This rises to **6.93** when the full wider economic impacts of the scheme are taken into account;
- The scheme is therefore judged to represent **very high value for money**.

4.2 Methodology

4.2.1 Overview of methodology

(a) Procedural guidance

The economic and financial analysis supporting the MSBC has been developed in a manner that is consistent with rail scheme demand forecasting and appraisal guidance issued by the DfT. Specifically:

- WebTAG unit M4, Forecasting and Uncertainty, May 2014¹;
- WebTAG unit A5.3, Guidance on Rail Appraisal, Jan 2014²;
- WebTAG unit A5.4, Marginal External Congestion Costs, January 2014³; and
- WebTAG unit A2.1, Wider Impacts, January 2014⁴.

Potential Wider Economic Impacts have been assessed using the DfT's WITA software in accordance with WebTAG unit A2.1 of January 2014.

(b) Economic appraisal steps

Full detail of the economic appraisal process is contained in a dedicated report 'Clitheroe Line Improvement Study – Business Case Report' produced in November 2014 by Mott MacDonald⁵. An update to this report setting out adjustments required at the MSBC stage is attached at the end of **Appendix N** to this MSBC. In summary, the steps involved have been:

- Scope and content of the scheme,
- Identification of alternative option,
- Identification of 'do minimum' and 'do something' services offered and expenditures involved.
- Creation of 'do minimum' demand development,
- Demand impact of the proposed option,
- Economic Appraisal of the outcomes, and
- Collation of the monetised, quantitative and qualitative assessments in the Appraisal Summary Table (AST).

These steps are outlined below.

4.2.2 Scope and content of the scheme

The proposal appraised consists of the introduction of an interpeak rail service between Manchester and Blackburn via Bolton, such that (together with the existing

¹<https://www.gov.uk/government/publications/webtag-tag-unit-m4-forecasting-and-uncertainty-may-2014>

²<https://www.gov.uk/government/publications/webtag-tag-unit-a5-3-rail-appraisal>

³https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/286935/webtag-tag-unit-a5-4-marginal-external-congestion-costs.pdf

⁴<https://www.gov.uk/government/publications/webtag-tag-unit-a2-1-wider-impacts>

⁵ 'Clitheroe Line Improvement Study, Business Case Report' – Mott MacDonald November 2014 for Blackburn with Darwen Borough Council.

hourly Clitheroe – Manchester services) a half-hourly train service is provided direct from Manchester Victoria to Blackburn. The service is assumed to be provided by extension of Manchester-Bolton services to be provided by other initiatives as a result of Northern Hub capacity improvements. Provision of the rail service necessitates the extension of double-tracking of the line in the Darwen area by approximately 2845 yards (2600m), as outlined in section 2 which is thus the principal capital element of the scheme.

The scheme will take place in the context of station enhancement works at stations both north and south of Blackburn, which will have an impact on passenger volumes on the route.

Although the station enhancements form part of this MSBC bid, their capital costs only represent a very small proportion of the overall scheme capital costs and have not been included in the cost base of the Economic Appraisal.

4.2.3 Identification of alternative option

Section 2 outlined the steps taken to identify alternative options capable of meeting the objectives set out in section 3.9, in which efficiency and accessibility gains were described as contributing to primary objectives of economic regeneration and social inclusion. The alternatives considered, all consisted of mechanisms to facilitate the provision of the inter-peak rail service without risking deterioration in punctuality on the route, involving a staged reduction from nine possibilities to five and then to two options. The selected option remained when it emerged that the nearest alternative (upgrading speed across Turton level crossing) would be more expensive than initially estimated.

The only alternative for the purposes of the economic appraisal is therefore the ‘Do Nothing’ option, which would not provide the rail services desired and therefore not provide the travel and regeneration benefits described.

4.2.4 Creation of ‘do minimum’ demand matrix

(a) Baseline demand

The methodology requires demand to be estimated for a future period of 60 years. ‘Do minimum’ demand has been forecasted for this period from a baseline provided by 2010/11 rail ticket sales data for flows on the route. These include data on revenue and journeys on flows to/from stations served by the new rail service to stations both directly served by the new trains and to more remote stations only achieved by changing trains. The baseline demand has been adjusted to incorporate the impact on revenue and journeys of the availability of Transport for Greater Manchester (TfGM) zonal ticket products and concessionary fares, and to ensure good representation of the directionality of travel.

(b) Forecasted future demand

DfT guidance for rail schemes states that it ‘is unreasonable to assume that demand will change indefinitely and therefore there should be a point in the future at which demand growth is capped’. Current guidance states that this cap year should be 20 years from the year in which the appraisal is undertaken; therefore our forecasts assume growth is capped in 2034. Sensitivity tests with earlier and later caps have been undertaken and these are described in Section 4.11. Our growth forecasts

have been developed in accordance with WebTAG units M4 and A5.3 (January 2014, see footnotes 1-3) and are set out in greater detail below.

(i) Background demand growth

A forecasting spreadsheet has been used which applies WebTAG / Passenger Demand Forecasting Handbook (PDFH)⁶ relationships with changes in external and internal factors using an appropriate mapping of flows to forecasting segments. The external factors include macro-economic factors such as economic performance (e.g. GDP, employment levels), the attractiveness and cost of competing modes (e.g. car journey times, fuel costs) and demographic factors including changes in population and car ownership levels. There are also certain factors which are in the direct control of the rail industry or Government, including changes to the timetable, rail fares and performance (the latter being assumed to remain unchanged overall).

The drivers of growth for the do-minimum case are set out below, with forecasting inputs for the 'Do Something' (with-scheme) case set out in alongside their description and outputs in later sections.

The forecasting model includes ten standard PDFH forecasting variables, listed in below. Where granular forecast data exists, demand forecasts have been applied down to station-catchment level where appropriate, for instance population, car ownership and employment forecasts from NTEM. For other forecasting variables only national forecasts are available, and these forecasts are applied uniformly across all flows (e.g. GDP and car operating costs). The demand forecasting model uses PDFH5 and PDFH4.0 elasticities in accordance with WebTAG unit M4, May 2014.

Forecasting Variable	Data Source/assumption	Finest granularity	Elasticity Parameter
Real GDP per capita	OBR: WebTAG data book, May 2014	National forecast	PDFH5
Employment	NTEM 6.2	Station-catchment	PDFH5
Population	NTEM 6.2	Station-catchment	PDFH5
Car Ownership	NTEM 6.2	Station-catchment	PDFH5
Car Operating Costs	WebTAG data book, May 2014	National forecast	PDFH5
Car Journey Times	DfT	National forecast	PDFH5
Bus Cost	Trends derived from DfT statistics	National forecast	PDFH5
Bus Journey Times	As per Car Journey times	National forecast	PDFH5
Bus Headway	Assumed constant	n/a	n/a
Rail Fare	Regulated fares driven by government policy - RPI+1% with defined exceptions	National forecast	PDFH4.0

Table 4.1: Forecasting variables included in the Demand Forecasting Model

The 2014 WebTAG unit M4 guidance included several adjustments which had not previously been included in WebTAG advice, in particular revised estimates for model inputs reflecting GDP and Car Operating Costs.

⁶ PDFH is the well-established railway industry source for methodology and parameter values for the consistent forecasting of the response of demand and revenue to the full range of potential management interventions, and is supported by an ongoing research programme to keep it abreast of market developments.

- The GDP estimates and forecasts given in the Databook are described as being based, from 2012, on CPI rather than RPI and the databook suggests that an adjustment, in each year, of -0.2% should be made in compensation. This has been applied in our demand scenario.
- A more comprehensive definition of Car Operating Costs is given in the 2014 Guidance and forecasts provided in index form. This also includes an assumption of significantly improved fuel efficiencies over the forecasting period, more than offsetting forecasted Fuel Price increases. This has also been incorporated in the creation of our demand scenario.
- Rail fares are assumed, in line with current Government policy, to rise by 1% above the rate of inflation (RPI) until the year of the demand cap (excepting January 2014 and January 2015 which have been set nationally to equal RPI inflation only), after which no further real changes are assumed.
- In addition to the inputs set out in we have included two further exogenous variables in the forecasting model. DfT forecasting guidance states that divergence from the approved forecasting methodology may be warranted in certain circumstances, including cases where “The recommended methodology is proven not to provide credible forecasts based on historic experience”. The basis for our approach is set out in the next paragraph.
- It is widely acknowledged that the standard PDFH forecasting approach set-out in WebTAG unit M4 cannot fully explain the recent strong levels of growth observed across the north of England over the last decade or so. Both the DfT’s High Level Output Statement (HLOS) modelling work and Network Rail’s Northern RUS applied additional forecasting variables that narrowed the gap between forecast and observed demand growth over recent years. We have incorporated these additional variables into the forecasting model as shown in below, based on findings and best future forecasts of a study undertaken for DfT reviewing the evidence underpinning the HLOS and RUS work⁷. The study recommended that these variables should be applied as follows⁸:
 - Season tickets have an additional uplift factor of 1.080 applied to the year-on-year real growth in car parking prices.
 - Full fare tickets have an additional uplift factor of 0.721 applied in a ratio form to the growth in proportion of white collar workers year-on-year.

⁷ \\Ukmancv\madc01\Projects\Manchester\Northwest\Projects (Odd)\267023 Northern HLOS growth\7.0 Reports\Final Report\Final Draft\Issue\267023 Draft Final Report Revision B.doc

⁸ 'Northern HLOS Growth Study (Revised Draft Final Report)', Mott MacDonald for Department for Transport, March 2010; sections 6.5 and 7.1.

	Up to 2014	2015	2016	2017	2018	2019	2020	2021	2022
% of city centre workers employed in 'office-based' employment	78%	79%	80%	80%	81%	81%	81%	81%	81%
Projected future real growth in car parking charges (per annum)	3.00%	2.60%	2.20%	1.80%	1.50%	1.10%	0.70%	0.30%	0.00%

Table 4.2 Northern Growth forecasting variables

Source: 'Northern HLOS Growth Study (Revised Draft Final Report)', Mott MacDonald for Department for Transport, March 2010; section 7.1.

(ii) Determining demand in the forecasting model base year (2012)

While the most recent MOIRA⁹ flow matrix demand data available is that for 2010/11, the base year for the Forecasting Model described in the previous section is calendar year 2012. In the interval since extraction of MOIRA data, evidence on the growth of demand to both 2011/2 and 2012/3 has become available, and is summarised in a document produced for Community Rail Lancashire in June 2013^{10,11}. This document sets out a significant step-change in demand after 2010/11 (which is largely ascribed to a number of station enhancements effected) together with a possibility that peak volume is becoming capped at certain stations by getting close to train capacity limits.

The uplift of the 2010/12 MOIRA flow data to the study's model base year (2012) has been estimated by observation of the demand trend at those nine of the Eden 'top ten flows' which are in scope of the service enhancements proposed under this scheme, i.e. additional train services extended northwards from Bolton to Blackburn. overleaf (in which the blue lines represent the in-scope nine top flows) shows how the mean demand for 2011/2 - 2012/3 has been back-cast at the average growth rate (1.4% pa) from the Forecasting Model for these years.

The difference between the more recent demand level, back-cast to 2010/11, and the actual demand in that year represents the estimate of the step-change in demand from a relatively stable (but growing) level from 2006/7 to 2010/11, to the new higher level in 2011/12, 2012/13 (and 2013/4 to the extent it is demonstrated in the Eden data).

The Jan-Dec 2012 base year matrix for input to the forecasting model was then determined by application of the following uplifts to the MOIRA matrix of 2010/11 flow data by flow and ticket type (adjusted for TfGM ticketing products):

- the step-change in demand to 2011/2, estimated at 12.5%, as described above.

⁹ MOIRA is a standard rail industry tool used for modelling the response of demand to changes in timetables offered, and is referred to explicitly in the next sub-section 'Determining Do-Minimum and Do-Something demand'. However it includes a standardised extract of rail industry sales data on a flow and ticket-type basis, which is referred to here. ¹⁰ '2013 Monitoring for the Clitheroe Line', Eden Business Analysis, data to 31 March 2013. ¹¹ A further report to March 2014 has been published more recently, but has not significantly added to the evidence. The findings are consistent but of less certain reliability.

- a further element representing nine months growth between the periods April 2011 - March 2012 and January - December 2012.

The base matrix for forecasting also includes (by flow and ticket type) the calculated uplifts for the station enhancements set out in section 2.2, which are assumed to take place irrespective of whether the off-peak frequency scheme is undertaken.



Figure 4.1: *Clitheroe line demand backcasting: Journeys per year*

Source: *Eden Business Analysis flow data analysed by Mott MacDonald*

(iii) **Determining Do-Minimum and Do-Something demand in the future forecast years**

Determining Do-Minimum demand in future years is a two-stage process in which the first is the application of the forecasting model (using PDFH elasticities varying by segment as set out in) for forecasting years 2016, 2024 and 2032 (with 2017, the revised year of introduction of the service, intermediate and further forward years being derived by interpolation / extrapolation).

The second stage is incorporated in the MOIRA modelling procedure¹² used to determine the demand impact of the proposed timetable enhancement. The MOIRA demand elasticities to generalised journey time are applied for two timetable cases:

- the do-minimum timetable (including all expected timetable developments other than the scheme) provides the do-minimum estimate of demand at each forecast year, and
- the do-something timetable (including in addition the proposed new interpeak trains under the scheme) provides the do-something estimate of demand at each forecast year.

The difference between these two sets of estimates of demand is therefore the estimate of the scheme's demand impact at each forecast year. The main elements of each of the two timetables set out above are described in section 4.3.3.

4.2.5 Economic Appraisal of the outcomes

The economic appraisal of the outcomes incorporates:

- A 'core economic appraisal' of expected scheme impacts across a range of measures, using best available estimates of the quantified impact of the scheme on each measure (in practice, all being related to the estimated demand impact calculated as described in the section above, using DfT WebTAG standard relationships as appropriate), and
- A 'wider impacts' assessment (using DfT's 'WITA' methodology) to determine the further impact of the demand changes on economic output measures,

¹² The MOIRA modelling tool is designed to apply the PDFH timetable modelling processes and parameters for a uni-modal elasticity forecast of demand to its matrix of rail sales data.

reflecting mainly the benefits to the regional economy of the closer integration of labour with workplaces brought about by enhanced transport links. This assessment is reported in section 4.8

The economic appraisal is informed by estimates of scheme costs as outlined in section 5, together with any contribution towards costs available from user revenues, and monetised estimates of external impacts.

The economic appraisal assessments of the scheme and its monetised outcomes are then amalgamated with alternative appraisal assessments of other dimensions of scheme impact (set out below in section 4.8) by being presented alongside each other in the Appraisal Summary Table (AST) set out in section 4.10.

4.3 Assumptions

Assumptions underpinning the appraisal are set out below under four headings:

- Scheme definition
- Scheme context including demand forecasting assumptions;
- Train service
- Appraisal parameters.

4.3.1 Scheme definition assumptions:

The scheme definition derives from the scoping for, and findings from, Network Rail's GRIP3 report described in section 3 and included as **Appendix O**. Key features relevant to the appraisal are set out below.

The **infrastructure elements** of the scheme will be constructed in Summer 2015 under contractual arrangements with Network Rail in which a fixed price has been agreed of £13,354,466 (at 2013 Q4 price level including Residual Factors, Risk and Contingency). The scheme constituents described later in this section will be capable of reliably delivering the train service outputs set out in section 4.3.3 below.

The **train service elements** of the scheme will be delivered from the timetable change date in 2017 (assumed to be Sunday 17 December, although the enhancement will apply only from the following Monday).

4.3.2 Scheme context assumptions:

The scheme's external demographic and economic environment will remain as in the forecasting base year 2012, except in respect of the variables in the forecasting model set out in section 4.2.4.

The station enhancement schemes outlined in section 2 are assumed to be undertaken prior to commencement of scheme operations in December 2017. It is assumed that there are no further developments to station accessibility, throughout the appraisal period that would seriously impinge on or constrain demand levels. In practice this and the point on general economic environment above are conservative assumptions, as there is an expectation not only (as expressed in the Lancashire Economic Partnership's Strategic Economic Plan) that the economy of East Lancashire will significantly grow over the period, but also that with the current redevelopment of Manchester Victoria station and the development of Metrolink's

'Second City Crossing' allowing extra tram services to serve Victoria, that the built environment around Manchester Victoria and the 'Northern Quarter' in general will see significant and sustained growth, starting from before the commencement of scheme services.

The rail commercial context is assumed to remain unchanged in the core scenario. This primarily concerns service reliability, systems to distribute information on train running, and retail distribution systems including ticketing media, formats and fares structures. While train running information is already widely available using mobile phone technology, this assumption is a conservative one in relation to service reliability (where the route is currently a poor-performing one, but is expected to improve with the improved resilience provided by the scheme) and in relation to ticketing and fares (where it is expected that smartcard and phone-based ticketing solutions are likely to be introduced early in the appraisal period).

The main further influence on the cost and demand impact of the scheme is the rail network assumed to exist at the time of introduction and the rail services that will be operated on it (for the duration of the appraisal period). These constitute the rail 'Do Minimum' timetable case, for which our assumptions are set out below, in which all changes are assumed to be in place by December 2017. To the extent that under the 'Northern Hub', HS2, and other market/rail service developments the demand for rail travel on the route is likely to be further increased during the appraisal period, there would be up-side opportunities enhancing demand on the route rather than reducing it.

(a) Todmorden Curve – hourly Blackburn - Burnley Manchester Road - Manchester Victoria service

We have included this new service in our timetable modelling, using timetable assumptions provided by TfGM. The journey time between Blackburn and Manchester Victoria via Burnley is planned to be around 70 minutes, which is 40% longer than the typical 50 minute journey time via Bolton. Nonetheless, standard timetable modelling suggests that around 12% of the Blackburn-Manchester market would switch to this new service, growing the Blackburn-Manchester market by around 1%. This impact is captured within our do-minimum demand modelling. However, there is a probability that the majority of fares sold for the Blackburn-Manchester flow will be for journeys on the current route via Darwen.

(b) Preston-Manchester Electrification and Line Speed Improvements

The line between Manchester and Preston via Bolton is planned to be electrified by December 2016 under Phase 4 of the North West Electrification Project. Line speed improvements are also being funded through the Northern Hub package of enhancements. Line speeds between Salford Crescent and Bolton will be raised to a maximum of 90mph where possible, reducing sectional running times for rolling stock that can take advantage of the higher permissible speeds. While Blackburn line services do operate over the route between Bolton and Manchester Victoria, under current plans the Blackburn line will remain diesel-operated by 75mph Sprinter-type rolling stock for the foreseeable future. It is therefore unlikely that Blackburn line services will directly benefit from the linespeed improvements, and so these have not been included in our Do Minimum timetable.

(c) Other Northern Hub enhancements

The remaining elements of the Northern Hub package may not have a direct impact upon Blackburn line services, but it is without question that the renewed concentration of services at Manchester Victoria will bring benefits to Blackburn line passengers interchanging for other destinations. Links to a range of destinations will be enhanced, including via the Chat Moss route to Liverpool, links towards Warrington, Chester and North Wales and links to Manchester Airport.

While, in general, there isn't sufficient clarity regarding future hub timetables to have included them in timetable modelling, it has emerged that adjustment of service patterns between Manchester and the north-west will result in a new Northern Rail service between Manchester Victoria and Bolton being introduced. This new service has been included in the Do-Minimum case, as it provides the opportunity for the reinforced Blackburn service to be provided by its further extension in the Do-Something (DS) case, as outlined below.

4.3.3 Train Service Assumptions

(a) Do Minimum Train Service

The Do-Minimum assumption is that the line's train timetable will remain unchanged from its current pattern, excepting that under the 'Northern Hub' scheme an additional hourly train service will be provided throughout the inter-peak between Manchester Victoria and Bolton, presenting itself at Bolton exactly a half-hour offset from the current services on the line and thus providing the opportunity (in the Do-Something case) for trains to be extended northwards to Blackburn notwithstanding the single-track constraints.

This additional service is assumed to be provided by a single Class 142 unit in the immediate future, although from calendar year 2020 onwards a Class 150 or similar unit is likely to be used (Class 142 units having a limited lifetime due to ITT specified commitments to replace these unpopular units completely by 2020). Staffing of the services is assumed to continue as a two-person crew, as now, throughout the appraisal period.

(b) Do Something (Scheme) Train Service

Under the scheme the Manchester – Bolton interpeak services noted above will be extended to and from Blackburn, thus providing a half-hourly service between Manchester and Blackburn via Bolton. The timetables applicable to both the DM and DS schemes are provided (for both Mondays-Fridays and Saturdays) within the scheme BCR report attached as **Appendix N**. The additional service will not operate on Sundays.

4.3.4 Appraisal Assumptions

Appraisal assumptions are as directed by WebTAG; in particular, the value of waiting time for non-business journeys is increased by 25% above the value (of twice in-vehicle time) used in modelling demand response¹³.

¹³ TAG unit A1.3 (Jan 2014) specifies a value of 2.5 times in-vehicle time, which is an uplift of 25% on twice in-vehicle time used in modelling of demand in MOIRA.

Other appraisal assumptions include:

- Demand growth and real fare increases are capped at year 2035 (although sensitivity tests are presented to provide higher and lower growth scenarios, with demand capped at 2045 and 2025 respectively).
- As outlined in section 4.1 and section 5, the train service provision under the scheme is understood to be provided under the terms of the new Northern Franchise effective from April 2016; accordingly the costs of scheme operation are not part of the ask of this MSBC and have been excluded from the appraisal.
- Discount Rate progression: initially 3.5% per year, reducing to 3.0% per year after 30 years from the date of the appraisal.
- Unit of account: the appraisal has been undertaken at market prices, involving an uplift of relevant items by 19%.
- Value of Time by market segment, and its progression through the appraisal period, is given directly in the WebTAG databook May 2014.
- Indirect Tax loss: Indirect Taxation has been assumed to be lost on the cost of motor fuel where demand shifts from road to rail. The loss per car-km is given in the WebTAG Databook, and is indicated in the next section. It is assumed that VAT will continue to not be applied to public transport fares.
- Journey purpose for journeys on the route (during the time-band of operation of the new services) is taken as being 10% on employers business, 30.5% commuting to work or education, and 59.5% for other (leisure) purposes. These percentages are informed by NRTS weekday data by timeband for the route when it was last surveyed in 2004-5, adjusted to reflect implementation across Monday-Saturday using findings from interviews among Darwen and Blackburn railway station users by Eden Business Analysis in September 2012.
- No credit has been taken in the appraisal for possible changes in car parking revenue at rail stations (currently provided only at Bromley Cross and Blackburn, in terms of stations impacted by the scheme,).
- No credit has been taken in the appraisal for the performance benefits of the infrastructure enhancement between summer 2015 and December 2017 (when the enhanced service will commence) although the substandard and gradually deteriorating punctuality of the route, reported by Network Rail in February 2015, demonstrates that the performance benefits will be at least as great as were estimated at the time of scheme selection, and that there will be a valuable further benefit during this interim period prior to scheme opening.
- The rate of demand build-up following introduction of the new timetable is informed by the phasing, in the first year by quarter, given (by market segment) in PDFH. From this we have determined the following ramp-up of demand by calendar year, recognising that the service will start at the very end of 2017, shown in below:

Segment	Opening year (17 Dec)	Year 2	Year 3	Year 4	thereafter
	2017	2018	2019	2020	2021
Commuting	1.2%	55%	80%	95%	100%
Non-Commuting	1.8%	81%	100%	100%	100%

Table 4.3: *Ramp-up of demand, by market segment*

Source: PDFH5 Table B12.1 with application analysis by Mott MacDonald

(a) Highway marginal economic cost impacts

Appraisal estimates of accident costs and environmental impacts (including reduced wear and tear on roads, the reduction of congestion delay to other road users, and loss of taxation revenue on vehicle fuel costs) rely strongly on estimates of road vehicle-km diverted from road to rail. The appraisal uses standard DfT relationships for the proportion of diverted demand, and impact rates per road vehicle km. The diverted car-km, per rail passenger km, has been informed by Table 1 of TAG unit A 5.4, which indicates that 26% of rail passenger km replace highway km undertaken as a car driver.

The impact rates used are shown in , and are obtained from WebTAG DataBook May 2014: Table A 5.4.2. The use of standard impact rates assumes that:

- There are no material negative impacts during the infrastructure construction phase,
- The impacts on safety, noise, and air quality from the operation of the small number of additional trains on the existing rail trackbed are minimal,
- The do-minimum journeys of travellers subsequently diverting to rail are undertaken on roads having a national weighted average level of accidents and air quality negative impacts per car mile.
- The do-minimum journeys of travellers subsequently diverting to rail are undertaken on roads having only a low level of congestion during relevant inter-peak periods, as the benefit from highway congestion relief has been monetised using the national weighted average rate for the least congested band of conditions.

4.4 Transport Economic Efficiency

4.4.1 Process

The Transport Economic Efficiency estimate compares the costs of the scheme with the resulting benefits (revenues being considered an offsetting 'negative cost'). Values are quantified, converted to a common unit of account, and discounted to the DfT's standard appraisal comparison year 2010. Values used in this process include inflation at relevant rates and discount rates, while consequential impacts (e.g. on safety and pollution) also use standard appraisal rates per car-km as indicated below.

- **Investment cost** is understood to be principally incurred in Calendar Year 2015 (it is fully delivered prior to the December 2015 timetable change date), with 10% of the cost being incurred in Calendar Year 2014 (design works etc).

- **Revenues and highway marginal economic costs (MECs)** are derived from MOIRA forecasts of rail ridership change and the associated mileage and journey time impacts by flow and ticket type. From these changes in car km have been derived using a 26% abstraction rate from car (as set out in section 4.3.4), to which cost rates per car-km have been applied to monetise the aggregate across all flows. The cost rates for key years, (obtained from WebTAG), are shown in for the different impacts of this scheme:

	2010	2015	2020	2025	2030	2035
Congestion	11.5	12.3	15.8	20.5	25.0	31.2
Infrastructure	0.1	0.1	0.1	0.1	0.1	0.2
Accidents	1.6	1.7	1.9	2.0	2.2	2.5
Local Air Quality	0.1	0.1	0.0	0.0	0.0	0.0
Noise	0.1	0.1	0.1	0.1	0.2	0.2
Greenhouse Gases	0.9	0.8	0.7	0.7	0.7	1.0
Indirect Taxation	-5.1	-5.0	-4.5	-3.9	-3.6	-3.5

Table 4.4: Highway marginal external costs & indirect tax: pence per car km, 2010 Market Prices

Source: WebTAG DataBook May 2014 : Table A 5.4.2

User benefits have been determined by summation of the passenger miles and journey time impacts across all impacted flows and ticket types. The passenger journey time impacts have been apportioned between 'Business' and 'Non-Business' users according to the journey purpose split outlined in section 4.3.4. The net present values (NPVs) of all the monetised elements are brought together in the Transport Economic Efficiency (TEE) table, included in Section 4.6 and **Appendix C**.

4.4.2 Scheme impacts – journeys

Journeys impact is indicated in below showing both annual total journeys and average daily outward (one direction only) journeys. The impact reflects the date of introduction of the service and ramp-up in introductory years. While demand is capped from 2035 onwards in the appraisal central case, the Benefit-Cost ratios reported in section 4.11.1 also demonstrate the impact of including lesser or greater extents of journeys growth, to 2025 and 2045 respectively.

	2016	2017	2018	2019	2020	2021	2022	2032	2035
Annual journeys									
Monday-Friday	0	911	41,694	54,506	57,931	59,610	60,391	69,190	72,026
Saturday	0	123	5,643	7,380	7,847	8,078	8,188	9,390	9,475
Total	0	1,035	47,338	61,887	65,779	67,689	68,580	78,579	81,501
Annual average daily outward journeys									
Monday-Friday	0	52	76	99	105	108	110	126	131
Saturday	0	52	54	71	75	78	79	90	91
Average day	0	52	72	95	101	103	105	120	125

Table 4.5: Journeys impact of additional services: Annual totals and average daily outward journeys

Source: BCR Technical Note, March2015

4.4.3 Inclusion of Optimism Bias

The uplifts applicable are driven by the stage which project design and development has reached at the point at which costs were produced.

Table 7 in Unit A1.2 defines three stages of development, corresponding to Pre-Feasibility, Option Selection and Full Approval (described for rail schemes as GRIP Stage 5 'Design Development'), while Table 8 sets out the corresponding levels of uplift as shown in . The determination and application of suitable uplifts is discussed, by main cost component, below.

Figure 4.2: WebTAG recommended optimism bias uplifts for capital expenditure

Table 8 Recommended optimism bias uplifts for different projects at different stages of the life of a transport project				
Category	Types of projects	Stage 1	Stage 2	Stage 3
Roads	Motorway, Trunk roads, Local roads, Bicycle facilities, Pedestrian facilities, Park and ride, Bus lane schemes, Guided buses on wheels	44%*	15%	3%*
Rail	Metro, Light rail, Guided buses on tracks, Conventional rail, High speed rail	66%*	40%	6%*
Fixed links	Bridges and Tunnels	66%*	23%	6%*
Building projects	Stations and Terminal buildings	51%*	-	4%*
IT projects	IT system development	200%*	-	10%*

Source: TAG Unit A1.2, Jan 2014

The cost estimate described in section 5 comes from quotes explicitly provided to the scheme sponsor by Network Rail for delivery of the full works to completion (GRIP stage 8), inclusive of a discrete Quantitative Risk Assessment and the contributions to the cushioning funds against specific types of cost over-run. In turn these are built on an extensive design development process, nominally to GRIP Stage 3a ('Approval in Principle'). The costs are therefore effectively at the 'Full Approval' stage as described in TAG (a rigorous quantified risk assessment having been conducted and costs increased accordingly), and so a 6% Optimism Bias uplift has been applied to the 'Emerging Cost' quote supplied by Network Rail.

4.4.4 Commentary on the TEE results

The impacts on rail passenger journeys and revenue, by flow, estimated using MOIRA as outlined in section 4.2.4, inform the estimates of user and non-user transport costs and benefits fed in to the Transport Economic Efficiency (TEE) table. Passenger travel user and provider impacts are listed, separately for rail and road modes, by high-level journey purpose. Safety and environmental impacts are not included in this table but are drawn in, together with monetised wider economic benefits, to the Analysis of Monetised Costs and Benefits (AMCB) table presented later on in section 4.11.

Scheme costs are shown as initially incurred by private sector providers, and (in line with guidance contained within TAG unit A5.3) passenger revenue is also included in this section of the table. However revenues are not sufficient to cover the cost and therefore a grant/subsidy item is inserted to bring the private sector net contribution to zero. The elements are shown at market prices.

The summary TEE table is set out in , in which Capital Cost Optimism Bias has been set to 6% as previously discussed.

Segment	Highway	Rail	All Modes
User Benefits (Travel time)			
Non-Business : Commuting	539	6,487	7,026
Non-Business : Other	933	11,231	12,164
Business	698	8,400	9,097
Private sector provider impacts			
Revenue		6,070	6,070
Operating costs		0	0
Investment costs		-12,528	-12,528
Grant/subsidy		6,459	6,459
Sub-total		0	0
Net Business impact	698	8,400	9,097
Total Efficiency Benefits	2,170	26,118	28,287

Table 4.6: TEE - NPVs (2010) of elements, market prices £000s at 2010 prices (Demand capped in 2035)

Source: BCR Report update Technical Note, March 2015.

It can be seen that grant/subsidy is required to pay for 52% of scheme costs, with revenue contributing 48%. However there are user benefits which significantly outweigh the net cost of the scheme, with business users gaining a travel time benefit of £9.1m (NPV over the appraisal period).

The majority of the benefits accrue to rail users although reductions in congestion on the road network provide minor contributions. User benefits totalling £28.3m (60-year NPV) constitute the benefit of the scheme, with £6.5m grant/subsidy covering the net cost of the scheme.

4.5 Safety Benefits

As outlined in the section above, safety benefits have been estimated for the reduction in car km due to the scheme, using national 'weighted average' rates shown in . In the absence of specific accident-rate details on the actual roads relieved of traffic this is the best estimate that can be made. Similarly the assumption is made that the forecast accident cost from changes in train miles over the appraisal period is effectively nil, and that there are no net safety impacts to passengers in their access journey to the railway station at either end of their journey or in time spent at stations or on train.

The monetised safety benefit from the scheme is thus estimated as £0.2m (NPV over 60 years).

4.6 Environmental and Social Impacts

4.6.1 Environmental Assessment Summary

To inform the Full Business Case, an appraisal of the environmental effects of the works has been undertaken in line with current WebTAG Guidance (TAG Unit A3: Environmental Impact Appraisal, May 2014). It has been undertaken in conjunction with the social and distributional appraisal, to inform the development of this Full Business Case. The appraisal considers the impacts (both beneficial and adverse) of the proposed design, construction and operation of the Blackburn to Manchester railway scheme, through the use of the eight environmental themes from TAG Unit A3. These impacts have been appraised individually by relevant technical specialists, and coordinated by an environmental specialist.

This environmental impact appraisal provides an overview of the potential environmental effects (both beneficial and adverse) associated with the proposed Blackburn to Manchester Rail Scheme. A summary of the likely overall impacts of the scheme is proposed below:

- Noise – the service increase and re-alignment of track is likely to have a slight adverse impact on noise;
- Air Quality (Local and regional) – the increase in rail service is anticipated to cause a slight increase in local and regional air pollutants, which will have a slight adverse impact on air quality;
- Greenhouse Gases – Taking vehicle-km as an indicator of energy consumption (directly linked to greenhouse gas emissions), it is expected a decrease in greenhouse gases will arise;
- Landscape – it is considered likely that the proposed works will not directly affect landscape. Therefore, landscape has been scoped out in preference to undertake a townscape assessment;
- Townscape – overall, the proposed scheme is anticipated to have a neutral impact on townscape;
- Historic Environment – the installation of new infrastructure has the potential to affect buried archaeological remains as well as a number of listed buildings and a conservation area adjacent to the works, having a slight adverse impact;
- Biodiversity – assuming appropriate mitigation, the scheme is anticipated to have a neutral impact on biodiversity; and
- Water Environment – overall it is predicted that there will be a neutral effect on the water environment.

The full preliminary environmental appraisal is included in **Appendix E** of this document. This appraisal will help inform the decision-making for major transport scheme funding.

At the Outline Business Case stage, the Preliminary AST identified potential effects of the scheme on the seven environmental topics suggested for further appraisal. This environmental impact appraisal for the Full Business Case is a follow-on document from the previous report. It aims to update the AST to provide a detailed environmental assessment for each of the environmental topics.

4.6.2 Social Assessment summary

This Social Impact appraisal has addressed the eight social impact areas outlined in TAG Unit 4.1. The report has followed a qualitative approach, assigning an assessment score on a seven point scale of beneficial, neutral and adverse for each impact area. Some impacts identified here, such as accessibility, will be assessed further as part of the Distributional Impact Appraisal (DIA). Others, such as security and severance have been classed as insignificant for the scheme and have been scoped out of further assessment.

The appraisal has found that the scheme will deliver broadly beneficial impacts. At present, no adverse impacts are expected to result from the scheme. The overall summary of assessment scores for the social appraisal can be seen in below.

Impact area	Score
Accidents	Slight beneficial
Physical activity	Moderate beneficial
Security	Neutral
Severance	Neutral
Journey quality	Moderate beneficial
Option and non-use values	Large beneficial
Accessibility	Moderate beneficial
Personal affordability	Neutral

Table 4.7: Social Impacts – summary assessment scores

The Social Assessment report is included in **Appendix E** for the proposed Blackburn to Manchester Rail Scheme. This appraisal will help inform the decision-making for major transport scheme funding.

4.7 Distributional impact assessment summary

The DI appraisal has addressed eight DI areas outlined in TAG Unit 4.2. The report has followed a quantitative and qualitative approach, assigning an assessment score on a seven point scale of beneficial, neutral and adverse for each impact area. The results of the appraisal will then feed in to the AST for the scheme, to provide a transparent overview of the Economic, Environmental, Social and Distributional impacts of the scheme.

At present, no adverse impacts are expected to result from the scheme. The overall summary of assessment scores for the social appraisal can be seen in below.

Impact area	Score
User benefits	Moderate beneficial
Noise	Neutral (scoped out)
Air quality	Neutral (scoped out)
Accidents	Neutral (scoped out)
Security	Neutral (scoped out)
Severance	Neutral (scoped out)
Accessibility	Moderate beneficial

Impact area	Score
Personal affordability	Neutral (scoped out)

Table 4.8: Step 1: DI summary table

Overall, the appraisal has found that the scheme will deliver moderate beneficial impacts for accessibility and user benefit categories. The Blackburn to Manchester Rail Scheme will have a positive effect improving the user benefit and accessibility of those in income deprived areas, children under 16 and young people (16 – 25), those with LLTI and within BME user groups.

The DI appraisal is included as **Appendix E**. This FBC appraisal will help inform the decision-making for major transport scheme funding.

4.8 Wider Economic Benefits

4.8.1 Introduction

The wider economic benefits for the scheme discussed in this section are based on the findings of the full wider economic benefits report produced in November 2012 and updated in the Business Case Report (*Section 8, Pages 46 – 52 with the full report appended*). The wider economic benefits have been identified through:

- Document and socio-economic overview of the strategic economic development context of the study area (five districts along the corridor (Ribble Valley, Blackburn with Darwen, Bolton, Salford and Manchester).
- Stakeholder consultation and engagement, including those active in economic development and the commercial development sector.
- Assessment of the wider economic benefits based on the housing and commercial development planned in the study area. Please note this is based on the original analysis in 2012.

4.8.2 Strategic Economic Context

(a) Supporting the Local Growth Deal

A key feature of the Local Growth Deal for the Lancashire Enterprise Partnership is realising the growth potential of the area through essential transport improvements to support job creation and the release of more land for homes and businesses.

Projects will support the overarching purpose of the Strategic Economic Plan (SEP) which is to re-establish Lancashire as an economic powerhouse and a national centre of excellence in advanced manufacturing by maximising its clear competitive strengths and capabilities in the aerospace, automotive, energy and health science related sectors. By realising the value of an arc of prosperity, which sweeps across Lancashire, the LEP will harness the power and potential of the county's national industrial hotspots; the key strategic sites; the key clusters of high value activity; and the internationally recognised centres of excellence in research and innovation.

For East Lancashire it has been identified that there is an opportunity for the area to provide a quality of housing capable of supporting those high value jobs currently

present in the local economy as well as those which could be created in coming years. This housing growth will occur in areas that were previously characterised by failed housing markets and where there were moratoriums in place in some locations which aimed at stimulating development but which instead served to stifle development. To maximise opportunities local partners are currently undertaking reviews of Green Belt to accommodate new housing development and local plans are adopting a strongly market-facing approach to site allocations. This is underpinned by an understanding of those locations with the greatest potential for growth and clear evidence on viability, whilst also having an emphasis on rebalancing the housing market by delivering aspirational family housing on a significant scale in high quality environments.

For this to occur it is recognised that the area is poorly connected with both road and rail networks hindering the efficient movement of people and goods, and that this relative isolation is having a negative impact on economic development, impeding East Lancashire's communities from fully benefiting from economic growth opportunities. Whilst road links to the west and south are of reasonable standard, rail links are much less adequate or non-existent. The Clitheroe to Manchester rail corridor improvements are highlighted as an existing scheme that will aim to improve East Lancashire's strategic transport network being delivered and that will bring some improvement to the rail network

For the Greater Manchester Local Enterprise Partnership, emphasises through its SEP, that creating conditions for growth will partially depend on improving connectivity locally, nationally and internationally. Such investment is important to strengthen and widen Greater Manchester's labour market, which is critical to the city's future success if the economy is to grow on the scale anticipated. The Greater Manchester sub-region has strong growth ambitions and will need to widen its labour market, particularly towards North Manchester and Lancashire, to secure its future success.

4.8.3 Consultation

The stakeholder consultation undertaken identified the following:

- There was a general agreement that the current lack of connectivity in the Manchester City Region is a barrier to growth and sustainability but that enhanced connectivity would affect some areas more than others. The real impact is likely to be in areas such as Blackburn with Darwen which has poor rail passenger connections.
- Poor connectivity in East Lancashire remains key concern for policymakers and the LEP. Currently the labour market is very localised with narrow travel horizons and limited interaction with the adjacent economies of Manchester, Leeds and Central Lancashire.
- East Lancashire is actively looking to improve its housing market offer and become an attractive place to live. This is both in terms of serving a growing population (particularly in Blackburn) but to also support the growth ambitions of other conurbations, particularly Greater Manchester. This vision is strongly supported by Greater Manchester as well given the scope for East Lancashire to supply a sustainable labour source to the GM economy.
- This housing offer is being actively developed by East Lancashire authorities and in Blackburn with Darwen and Hyndburn an objective needs assessment

has identified a net additional housing requirement of 9,500 between 2011-2029 (significantly higher than previous levels). The economic upturn is supporting this growth with developers active in the area.

- There has been a strong sense of momentum within East Lancashire following significant capital investment in Blackburn town centre (particularly the Cathedral Quarter and Pennine Reach which will improve access to two key developments – Erwood and Furthergate). The time is now seen as optimal for the housing offer and connectivity of the area to strengthen such momentum.

4.8.4 Land Market Economic Effects

The wider economic benefits have been assessed based on the land market effects associated with the rail service enhancements, focusing on housing and employment development. A more reliable rail service can influence the locations in which people search for employment opportunities and places to live and improve business perceptions and image thereby encouraging investment. The economic benefits identified are qualitative in nature given they relate to secondary benefits that are less tangible and linked to enhancing the housing and regeneration and renaissance of East Lancashire (particularly Blackburn) over the longer term rather than being directly attributable.

The following benefits have been identified as relating to the scheme (the full methodology is outlined in the full report):

- **House price impacts.** The overall uplift on property values is in the range of £11.6m primarily focused on Blackburn with sizeable uplifts for Darwen.
- **Housing development.** Given the national economic context has improved since the original study there is more optimism in the market about housing development in East Lancashire to serve the growing population locally but also provide a sustainable labour source to the larger conurbations of Greater Manchester and Leeds.
- **Employment land development.** The majority of employment land development benefits relate to Blackburn town centre which is the focus for urban development and growth in East Lancashire. Improved connectivity will support the centre's renaissance and regeneration to become the premier centre for retail, leisure and culture in East Lancashire. The rail connectivity improvements will contribute towards the capital investment that has now begun and the employment land plans that have emerged since the 2012 study. Investment prospects have improved in the area since the last study and highlights that improved connectivity can help to reinforce the long term prospects of the area as the country moves out of recession.

4.9 Employment and productivity (WITA) benefits

The analysis of impacts of enhanced connectivity through access to labour, customers and suppliers is estimated using DfT's WITA approach, which is consistent with WebTAG unit A2.1, Wider Impacts, January 2014. Findings are shown in Table 8.2 below:

Benefit	Increment £m
Labour Supply	0.4
Agglomeration	13.6
Competition	0.9
Total	14.9

Table 4.9: Labour and competition impacts 60-year NPV (2010) of elements, market prices at 2010 prices

The scheme has a significant impact in economic productivity through, mainly, the ‘agglomeration benefits’ of drawing East Lancashire and Manchester effectively closer together. Full details are provided in the BCR report included as **Appendix N**.

4.10 Appraisal Summary Table

The Appraisal Summary Table (AST) presents evidence from the analysis that is undertaken to inform the Economic Case of an intervention. Applying the principles of HM Treasury Green Book, the AST has been designed to record all impacts - Economic, Environmental, Social, Public Accounts and Distributional - at the national level.

The Scheme AST is included in **Appendix F**.

The AST combines quantitative information presented in this section from Tables 4.6, 4.9 and 4.10, with qualitative information from the Safety, Environmental, Social, Distributional and Wider Economic Impacts information referenced in sections 4.5 – 4.8.

4.11 Value for Money Statement

4.11.1 Analysis of Monetised Costs and Benefits

Compared with the Economic Efficiency Table which informs it, the AMCB includes four extra elements:

- The monetised accident and environmental benefits of the forecast highway traffic reductions (in this case, however, amounting to only 1% of the user economic efficiency benefits (60-year NPV),
- A very small further benefit, included in the 'Broad Transport Budget' figure, representing savings in highway maintenance due to the forecast reduction in road traffic, amounting to only 0.05% of the user economic efficiency benefits (60-year NPV), and
- A loss, included in the 'Wider Public Finances' figure, representing losses in government taxation of elements of motoring costs, amounting to 1% of the user economic efficiency benefits (60-year NPV).
- The value of the wider economic benefits, as estimated by WITA (section 4.8).

While in section 4.6.2 it is assessed that the scheme, by providing a more comprehensive public transport alternative to other modes, provides some enhancement to 'Option Values', this has not been monetised. Journey ambience has not been assessed. The completed Analysis of Monetised Costs and Benefits (AMCB) table is included in **Appendix G** and is also shown overleaf, which includes allowance for Optimism Bias. Value-for-money assessments have been completed for the central case (with growth capped in 2035) and also for cases to lower and higher growth caps, as set out in section 4.3.4.

Demand Cap / Components	Core Scenario : (20 year growth)		Sens Test 1	Sens Test 2
	Core – no WITA	Adjusted Core – with WITA	10-year growth	30-year growth
Component	2035	2035 with WITA	2025	2045
Noise	14	14	13	15
Local Air Quality	0.1	0.1	0.1	0.1
Greenhouse Gases	72	72	65	76
Journey Ambience				
Accidents	188	188	170	200
Economic Efficiency: Consumer Users (Commuting)	7,026	7,026	6,310	7,560
Economic Efficiency: Consumer Users (Other)	12,164	12,164	10,925	13,089
Economic Efficiency: Business Users and Providers	9,097	9,097	8,172	9,788
Wider Public Finances (Indirect Taxation Revenues)	-1,274	-1,274	-1,051	-1,443
Option Values				
Wider economic benefits (WITA)	-	14,862	-	-
Present Value of Benefits (see notes) (PVB)	29,834	44,696	26,706	32,171
Broad Transport Budget	6,446	6,446	7,685	5,487
Present Value of Costs (see notes) (PVC)	6,446	6,446	7,685	5,487
OVERALL IMPACTS				
Net Present Value (NPV)	23,388	38,250	19,020	26,683
Benefit to Cost Ratio (BCR)	4.63	6.93	3.47	5.86

Table 4.10: AMCB – Scheme appraisal findings – Present values (2010) of elements (£000s at 2010 market prices) and BCR – By year of demand cap

Source: BCR Report update Technical Note, March 2015.

The key benefit components in the AMCB are transport user benefits, and wider economic benefits (WITA) amounting to approximately half the user benefits. The scheme has a positive net present value and a ratio of Benefits to Costs (BCR) of 4.63 (prior to inclusion of WITA benefits). The table also shows results for cases in which demand growth is cut back to 2025, or carried forward to 2045, illustrating the impact of including lesser or greater volume (and hence revenues and benefits) offsetting the capital cost of the scheme.

4.11.2 Value for Money Statement

The BCR of 4.63 falls within the band described in DfT guidance on scheme appraisal as ‘very high value for money’. The assessment for alternative growth regimes capped at 10 and 30 years respectively further demonstrates the robustness of the scheme’s value for money.

4.12 Conclusion

The appraisal of the proposed scheme to enhance inter-peak services between Manchester and Blackburn is informed by cost-benefit methodology compliant with DfT guidance as set out in its 'WebTAG' internet site.

Table 4.11 shows both the core Benefit - Cost ratio of the scheme and the enhanced Benefit – Cost ratio including the monetisation of the scheme's Wider Economic Benefits using the WITA approach outlined in WebTAG unit A2.1, as reported in section 4.9.

Case	Detail of case	BCR
Reference Case – Core BCR	Capital cost OB 6%	4.63
Plus WITA impact (per Table 4.10)	WITA £14.9m (60-year NPV)	6.93

Table 4.11: *Benefit-Cost Ratio (BCR) for core and with-WITA estimates*

In the rapidly changing north-west economy there are a number of further factors suggesting that the variance of outcomes above the cases presented case is likely to be in an upwards direction, for example:

- Significant further rail uptake and generated demand from the implementation of the 'Northern Hub' and major investment in rail services in the north-west generally, including direct connections from Manchester Victoria to Liverpool, Chester, Leeds and Manchester Airport, and a new service from Victoria direct to Burnley and onwards to Blackburn, providing a positive climate for the launch of enhanced services on the route;
- Demand growth from the ongoing resurgence of activity throughout Manchester's 'Northern Quarter', served directly by Manchester Victoria Station, reinforced by the major redevelopment and refurbishment of that station and significant enhancements in its local connectivity arising from Metrolink tram system enhancements currently in delivery;
- Equivalent benefits from redevelopment in the centres of Darwen and Blackburn, bolstered by the easier access by public transport to adjacent conurbations, and the continued provision of increased housing in the borough (as outlined in our wider benefits update review report); and
- The potential for enhancing revenue collection on the route (which we did not include in our reference case assessment).

The infrastructure investment to deliver the scheme will also, from summer 2015, provide a significant enhancement to the punctuality of both peak- and off-peak services on the rail corridor from Clitheroe into Manchester Victoria, a node which will become very intensively used with the development of the Northern Hub; and where therefore such reliability benefits will be very highly prized to minimise the extent of knock-on delays across the north-west and over the Pennines.

5.1 Introduction

The Financial Case concentrates on the affordability of the proposal, its funding arrangements and technical accounting issues (value for money is scrutinised in the Economic Case).

The Financial Case is discussed under the following headings:

- *Methodology*
- *Assumptions*
- *Base Costs*
- *Quantified Risk Assessment (QRA)*
- *Optimism Bias*
- *Scheme Costs Adjusted for Risk and Optimism Bias*
- *Preferred Funding Arrangements*
- *Alternative Funding Arrangements*
- *Conclusion*

The main findings of this section are as follows:

- The capital cost of the scheme is £13.679 million;
- Blackburn with Darwen Borough Council's funding contribution to the scheme (for both capital and revenue) is £1.179 million with an additional £100,000 made available from Lancashire County Council (10% match funding contribution);
- The ask from the Local Growth Fund is £12.4 million (£3.4 million competitive, £9 million non-competitive);
- This is to be drawn entirely in FY 15/16 with the Council committing to cover the preparatory costs incurred during FY14/15 as part of their match funding commitment..

5.2 Methodology

Building the Financial Case has involved the following steps:

- Development of the scheme, optioneering and identification of a preferred option.
- Identification of the scheme cost components
- Identification of costs (capital and ongoing) of the scheme components, recognising the Do Minimum and Do Something cases (as detailed in section 4.2.1).
- Determination of scheme delivery arrangements and commercial terms.
- Determination of base costs, optimism bias and risk adjustments for each cost component, and hence the total net cost for the scheme. The net cost will include a component of 'negative cost' from forecast user revenues, as outlined in section 4.4.1.
- Understanding of the phasing of net costs for the scheme.

- Determination of preferred and alternative funding arrangements for the scheme net costs.

From these elements a conclusion can be drawn as to the affordability of the scheme.

The first six of these elements are described in section 'Base Costs' with particular details of the assessment of Risk Adjustments and Optimism Bias Adjustments further expanded in sections 5.5 and 5.6, with the emerging findings set out in subsequent sections.

5.3 Assumptions

As outlined in section 4, the network infrastructure and station enhancement elements of the scheme will be delivered in Summer 2015 while the train service elements of the scheme will be delivered from the timetable change date in December 2017. Whilst there is a possibility that the train services could commence from 2016 accruing benefits earlier, it is considered that the 2017 opening year is a robust and deliverable assumption.

Under the existing contractual arrangements between TOCs and Network Rail, track access payments for the additional train mileage operated are assumed to recompense Network Rail for the ongoing maintenance and renewal costs of the new assets provided under the scheme, so that track infrastructure maintenance and renewals costs have not been separately included in the Financial Case (or Economic appraisal).

5.4 Base Costs

5.4.1 Development of the scheme, optioneering and identification of preferred option¹⁴

The 2007 Faber Maunsell report noted that all the options were rated relatively low in terms of both the BCRs and affordability, confirming the importance of minimisation of costs. Whilst the report's recommendations were fed into the North West RUS¹⁵ undertaken by Network Rail in 2007 it was acknowledged that further investigation works were required, given that their own examination revealed capital costs to be in the region of £20m.

Further analysis was undertaken by consultants (ARUP 2009) which provided the scoping on which Network Rail was subsequently commissioned to undertake GRIP stages 1 – 3, providing scheme option costing sufficient to allow Option Selection (and subsequently, in GRIP stage 3 AiP, costing sufficient to allow Fixed or Emerging Cost prices to be committed to the sponsor for delivery). Full details of the option selection process in the GRIP3 study are given in section 3. The 'Next Best / Low Cost' options were in effect determined as the 'Do Minimum' case consisting of continuation of the current service level on the route, in the context of other rail and non-rail schemes planned in the region.

¹⁴ The development of the preferred scheme option has been fully described in section 3.

¹⁵ NW RUS May 2007, page 88, Network Rail

The 'Do Something' cost elements emerged from this process as the following:

- An Infrastructure Capital Cost scheme to provide an extended passing loop at Darwen.
- Train services to provide an infilling interpeak service between Bolton and Blackburn on both Mondays to Fridays and Saturdays.
- Station Enhancements works.

Costings for these elements are set out below, while associated Risk Assessment and Optimism Bias adjustments are described in sections 5.5 and 5.6 respectively.

5.4.2 Infrastructure Capital scheme costs

Infrastructure Capital scheme costs are provided in Network Rail's document '117353 Blackburn to Manchester Capacity Enhancement' of 6 February 2014. This sets out an Emerging Cost estimate to the sponsor, Blackburn with Darwen Borough Council, for delivery of the scheme. The cost covers all remaining elements of delivery of the scheme, i.e. GRIP stages 4 to 8 inclusive, and includes construction costs, delivery costs, allowance for risk and sponsor contributions to Network Rail / Industry fee funds (providing in effect a degree of cushioning against defined categories of unexpected cost).

Category	Estimate (£000s, Q4, 2013)
Construction Costs	9,460
Delivery	2,047
Risk and contingency	1,140
Risk funds	707
Total	13,354

Table 5.1: Infrastructure Capital Scheme Costs

The cost of **£13,354,466** is quoted at '4Q13' level, i.e. Oct-Dec 2013, and has components as set out in Table 5.1 above. 90% of the cost is understood to be incurred in Calendar Year 2015 (it is fully delivered prior to the December 2015 timetable change date), with 10% of the cost being incurred in Calendar Year 2014 (design works etc).

This cost has been converted to appraisal standard units for the purpose of the Economic Appraisal, using RPI to bring to 2010 cost levels and an uplift of 19% to bring it to market prices.

5.4.3 Train service costs

Train service costs including mobilisation and an ongoing element incurred in each year are not included in the total scheme cost. This is due to the recent specification of the services within the Northern rail franchise invitation to tender (ITT). This implies that mobilisation and ongoing revenue costs for the train services are to be met by the successful franchisee (either Abellio, Govia, or Arriva). As a result, these costs, totalling £1.489 million, have been removed from the Financial analysis presented within this document.

5.4.4 Station Enhancements costs

Costs for proposed Station Enhancements works have been provided by Vextrix Management Ltd. These may be summarised as in Table 5.2:

Item	Quantity	Rate (£000s)	Estimate (£000s, Q3, 2013)
Clitheroe			
Repaint fencing	-		
Waiting shelter	2		
Whalley			
Waiting shelter	1		
Repaint fencing	-		
Remove sign	-		
Langho			
CIS	2		
Paint fencing	-		
Anti-vandal shelter	1		
Shelter repair	-		
New sign	-		
Ramsgreave and Wilpshire			
Paint fencing	-		
Anti-vandal shelter	2		
Entwistle			
Repaint fencing	-		
Darwen			
Additional shelters	2		
Contingency	-		
Project Management	-		
Total			325

Table 5.2: Station Enhancement Capital Costs

This total cost of £325,000 excludes the price of Customer Information Screen (CIS) Installation since an ongoing project at Northern Rail operated stations is understood to be available to fund this intervention. This excludes the CIS at Langho which is not to be funded as part of this Northern Rail scheme.

5.5 Quantified Risk Assessment

The infrastructure capital scheme cost is inclusive of uplift for the findings from a Quantitative Cost Risk Analysis (QCRA) workshop held on 28th January 2014. The risk register for the project was expanded and updated in a brainstormed session. Each risk was then analysed to:

- understand the probability of occurrence and impact of the risks on the project outcome;
- allocate a risk owner, and
- decide upon a treatment strategy.

Evaluation was conducted using Monte Carlo analysis in which 10,000 simulations were conducted using @Risk software.

The mean level of risk exposure was identified at **£913,000**, with the 80% confidence level assessed at **£1.14m** (the latter figure being included within the emerging cost schedule¹⁶). This risk value is built into the Emerging Cost contract for the scheme along with further payments made to cover risk and exposure to Network Rail of third party funded schemes. The increment of £226,740 above the calculated allowance at the mean (50% risk level) represents a slightly more conservative approach than suggested by TAG Unit A5.3 (Rail Appraisal), in which the mean level is recommended.

Risk Assessments have not been undertaken for Operating Costs or Station Enhancements costs since these are substantially smaller scale than the infrastructure costs.

5.6 Optimism Bias

Whilst in the Economic Case (Section 4) the principal cost elements have been uplifted in compensation for Optimism Bias, as suggested in WebTAG Unit A1.2, in the Financial Case this has been set at 0% and hence removed from the analysis. This due to the fact that scheme infrastructure and operating costs are based upon a **full and rigorous** assessment of scheme costs from Network Rail and Northern Rail respectively, and inclusive of more than 12% contingency for risk.

In addition to this, the cost presented in section 5.4.4 above for the station enhancement component of the project is considered to have no risk associated with it. This is due to the fact that this is a set budget which may not be exceeded and due to the fact that the costs are in any case conservative and incorporate a large 12.5% contingency. In the event of cost increases, Blackburn with Darwen Council has committed to reducing the scope of the works to fit the figure available, and hence it is not considered necessary to include an optimism bias for this scheme component.

5.7 Scheme Costs Adjusted for Risk and Optimism Bias

Due to the arguments put forward in Section 5.6, Optimism Bias has not been applied to the costs noted in Section 5.4. The following Table 5.3 summarises the costs for each component inclusive of risk and contingency:

¹⁶ It is Network Rail's experience that whereas like for like renewals can reliably be quoted at a 50% likelihood of covering the emerging costs, enhancement projects should be quoted at the 80% probability level. This is more conservative as it provides a higher cost estimate.

Cost Component	Estimate (£000s, Q4, 2013)
Capital - Line	13,354
Capital - Stations	325
Total Capital Costs	13,679

Table 5.3: Total Scheme Costs Adjusted for Risk and Contingency

5.8 Preferred Funding Arrangements

As noted previously, it is proposed that the rail operating costs between December 2016 and December 2019 (offset by any available revenue) be met by Blackburn with Darwen Borough Council as part of their match funding commitment. Further to this, £1.179 million has been allocated from BwDBC for capital match funding, alongside £100,000 from Lancashire County Council (to contribute to the cost of the station enhancements). This leaves a total ask from the Local Growth Fund of £12.400 million. This is further summarised below:

Competitive LGF	£3.400m
LGF	£9.000m
Local capital contribution	£1.179m
Local capital contribution LCC	£0.100m
Total:	£13.679m

An advance payment of £568k has already been made to Network Rail by BwDBC in order to ensure the tight delivery timescales for the engineering works in 2015/16 are achievable. Further payments will also be required within this financial year and next and these will form part of the local contribution for the scheme.

As noted previously mobilisation and operational costs will be funded within the next Northern Franchise which will be let on April 1st for a nine year period.

A signed letter from the Section 151 Officer for BwDBC is included in **Appendix I**.

5.8.1 Cost Profile

Whilst the great majority of the scheme cost will be incurred in FY15/16 (the year of proposed LGF draw-down), Blackburn with Darwen Borough Council is committed to funding some upfront preparatory costs in FY14/15 at its own risk, with the remainder of these expected in FY15/16 to make up the balance of BwDBC's match funding contribution. These are estimated at £568,000 excluding VAT in 14/15, and £611,000 in 15/16 with a further £100,000 contributed by Lancashire County Council.

The following table highlights the profile of all cost expenditure and funding receipt over the construction period:

	2014 / 2015	2015 / 2016	Total
BBwDBC	£ 568	£ 611	£ 1,179
LCC		£ 100	£ 100
Local Growth Fund		£ 12,400	£ 12,400
Total	£ 568	£ 13,111	£ 13,679

Table 5.5 Annual Profile of Capital and Revenue Expenditure (£000s)

5.9 Alternative Funding Arrangements

There are currently no alternative funding arrangements identified for the main infrastructure and operating components of the scheme. The Local Growth Fund was noted by the then Secretary of State for Transport Theresa Villiers MP in January 2012 as the appropriate funding source.

Funding for improvements at local stations within Lancashire County Council area could be delivered through the Lancashire County Council Local Transport Plan 3 (LTP3) budget for 2015/16, and for Darwen station via the Blackburn with Darwen BC LTP3 programme for 2015/16, with match funding (not guaranteed) from the Rail industry.

5.10 Conclusion

Overall costs for the Blackburn to Manchester Rail Project are estimated at £13.679 million including a 13.5% contingency for risk. The scheme cost is considered proportionate and affordable in relation to the scale of the problem identified and predicted benefits of the scheme. Any additional costs will be underwritten by Blackburn with Darwen Borough Council, who have already contributed significant resource to scheme preparation and design. The Council also undertake to fund the Monitoring and Evaluation Plan component of the project and will meet all of the requirements set with their own financial resources.

6 The Commercial Case

6.1 Introduction

The Commercial Case provides evidence on the commercial viability of a proposal and the procurement strategy that will be used to engage the market. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project and any personnel implications arising from the proposal.

The Commercial Case is discussed under the following headings:

Procurement Method

Programme Implications and Risk

Preparation, Monitoring and Evaluation Costs

Conclusion

The main findings from this section are as follows:

- The project is intended to be delivered through Network Rail's Control Period 5 panel framework;
- The contractor to be used is VolkerRail with civil engineering works delivered by Buckingham Group contracting;
- Project risk will be allocated and managed in accordance with the CP5 Framework attached in **Appendix K**.

6.2 Procurement Method

This project is part of the portfolio of work intended to be delivered through Network Rail's Control Period 5 Panel Framework.

This framework has been through a rigorous tender process over the last 12 months and is anticipated to provide improved value for money and enable Network Rail to better achieve the efficiency targets set by the regulators by early contractor involvement, close collaboration with suppliers and the supply chain in the development and delivery of works.

The Contractor to be used for the delivery of the Railway Engineering works for this project is VolkerRail who have won the respective work category in LNW(N) area, with Civil Engineering works to be delivered by Buckingham Group Contracting who have won the respective work in the LNW(N) area.

The design house used in the development of this project is Mott MacDonald who have undertaken GRIP 3 design activities with constructability advice from Buckingham's.

Under the Framework, contracts will be instructed via a pre-agreed form for development services and works. Development services will be managed on an emerging cost basis with a default cap of 10% (which is subject to prior agreement between parties) of the project value.

Works will be delivered on a target cost basis, the target cost will be developed during the development services phase.

Alternative procurement routes will need to be investigated only if the award criteria cannot be met by the suppliers under the framework. The award criteria includes the ability to deliver the project within budget.

To assist with this section a presentation has been supplied by Network Rail which describes in detail the process for CP5 framework procurement. This is attached in **Appendix K**.

6.3 Programme Implications and Risk

Procurement has already been undertaken by establishing the CP5 Panel Framework. This means that there is no need for further lengthy tendering exercises to be undertaken as the contractors who will be engaged by Network Rail to undertake the detailed design and construction have now been appointed.

The full requirements of the works will be established together with the suppliers and stakeholders and the cost to deliver the project will involve all delivery partners. The early engagement of Network Rail's CP5 Framework Contractors provides an opportunity to bring their expertise into the design process, mitigating risk and brings more certainty in terms of the programme and project estimate.

A comprehensive Qualitative Cost and Risk Analysis (QCRA) was undertaken by Network Rail in Partnership with BwDBC and TfGM in January 2014. All identified risks were then processed 10,000 times through the Network Rail specialist risk model (Monte Carlo). Based on the identified engineering solution an 80% confidence level was included in the pricing schedule.

The mean level of risk exposure was identified at £913,000 with the 80% confidence level assessed at £1.13m (the latter figure being included within the emerging cost schedule).

The points below display the top five cost risks and actions identified during the process;

- Serviceable sleepers not available – Check the availability of F27 serviceable sleepers from NDS;
- Commissioning possession for Blackburn Interlocking – Testing and commission strategy to be agreed as early as possible;
- Estimating Uncertainty – N/A;
- Additional Works to the abutments of U/B 47 may be required – Deliverable of AiP GRIP 3;
- Existing Track Formation is unsuitable for track slews – Awaiting the results of the GI.

The evaluation also categorised risks into the following breakdown structure as shown in the opposite figure:

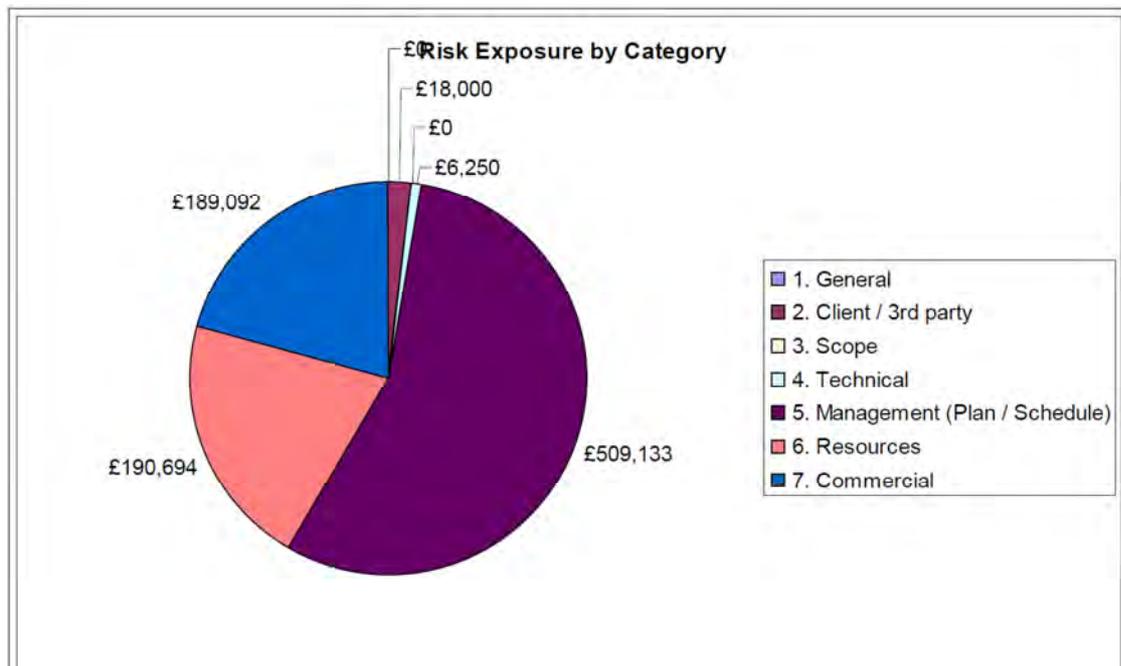


Figure 6.1 Risk Breakdown Structure Categorisation

Since the production of the QCRA report in January 2014, all outstanding actions have been closed out. Risk workshops will continue throughout the development of the project. Since the engagement of Network Rail's CP5 Framework Contractors further risk reviews have identified opportunities to mitigate a number of project risks by establishing a better understanding of the condition of existing assets within which the new project infrastructure is to be accommodated. Working in the manner reduces the risk of scope creep and unforeseen variations and enables the project team to focus on what the key project risks are.

Project risk will be allocated and managed in accordance with the CP5 Framework. A Target Cost will be agreed with the CP5 Framework Contractors that recognises and shares the project risks between Network Rail and the Contractor. Any increase or reduction in cost measured against the Target Cost are subject to the pain / gain mechanism agreed in the CP5 Framework Agreement. The management of risk shall be allocated to the party best equipped to manage that risk.

6.4 Preparation, Monitoring and Evaluation Costs

As noted earlier in this document, Blackburn with Darwen Borough Council have provided significant resource to the preparation of the scheme in the run-up to design and construction. Most recently, the Council have been funding Network Rail's work to take the scheme through to the GRIP 4 level of design and progression. The total cost of this work is £1.3 million which will be spent partly in the 2014/15 and the 2015/16 financial years, and will include the Council's match funding contribution to the project.

In addition, Blackburn with Darwen Council has undertaken to fund the Monitoring and Evaluation plan for the project for all of the years that this is required. Please see the Management Case for further details of this.

Despite the above assurances, however, preparation, monitoring and evaluation costs have not been included within the Economic Appraisal for the scheme in line with guidance from WebTAG

6.5 Conclusion

To conclude the scheme is considered highly commercially viable with a solid procurement strategy and a clear risk management process that is tried and tested. The delegation of these tasks to Network Rail ensures the robustness of their internal processes are brought to bear during the course of the scheme, and also ensures that sufficient staff capability and resources are made available.

7 The Management Case

7.1 Introduction

The Management Case assesses whether a proposal is deliverable. It tests the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance (e.g. a Gateway Review).

There should be a clear and agreed understanding of what needs to be done, why, when and how, with measures in place to identify and manage any risks. The Management Case sets out a plan to ensure that the benefits set out in the Economic Case are realised and will include measures to assess and evaluate this.

The Management Case is discussed under the following headings:

Governance
Assurance
Delivery Programme
Risk Management
Communications and Stakeholder Management
Monitoring and Evaluation
Conclusion

The main findings of this section are as follows:

- The project board will meet quarterly from January 2015;
- The project delivery team will meet every four weeks;
- The client and stakeholder management group will meet fortnightly to plan the communications strategy;
- A full assurance plan has been produced and is appended as **Appendix M**;
- A Monitoring and Evaluation Plan has been produced and is appended as **Appendix P**.

7.2 Governance

Project Board:

To meet quarterly from January 2015 and receive reports from Project Team in terms of scheme progress, spend, risk and stakeholder management.

Executive Management:

- Brian Bailey Director for Regeneration BwDBC (Senior Responsible Owner)
- Cllr Maureen Bateson Executive Member Regeneration

Project Director:

- Noel Connolly Network Rail

LA Project Manager:

- James Syson

Senior Users:

- Richard Watts Rail Manager LCC
- Roy Chapman Rail Officer TfGM
- Thomas Drury Network Rail
- Martin Whyatt Network Rail

Stakeholder Manager:

- Lucie Higham Account Manager Communications BwDBC

Project Delivery Team (working Group):

This will meet every 4 weeks in Manchester or Blackburn to manage the development of the scheme. This will initially convene as a design team and naturally move to a delivery team. As such additional staff from Network Rail will be required to attend at various stages of the scheme. Periodic reports will be produced by the Project Team for reporting at Project Board level with any necessary expertise called to Project Board meetings as and when required.

- James Syson: BwDBC
- Thomas Drury: Network Rail
- Martin Whyatt: Network Rail
- Richard Watts: Lancashire County Council
- Roy Chapman: TfGM
- Contractor rep: (Buckingham)
- Craig Harrop: Northern Rail

Network Rail already hold periodic progress meetings (currently bi-weekly) and these are preceded by separate commercial and engineering meetings that provide salient input into the project progress meetings.

This meeting / reporting regime is timed to support the internal Network Rail reporting requirements. The progress meeting cycle can be adjusted to suit the requirements of the project stage.

Client and Stakeholder Management sub group:

This will meet initially every fortnight to plan and deliver the Communications Strategy

- James Syson: BwDBC
- Lucie Higham: BwDBC
- Network Rail PR/Comms rep

Appendix L contains an example of a previous third party periodic report produced by Network Rail. In this case, the sponsor attended the project board meetings, and the project team provided the periodic reports (as per example attached), supporting the sponsor by attending the project boards on an as required basis.

The project team hold periodic progress meetings (currently bi-weekly) and these are preceded by separate commercial and engineering meetings that provide salient input into the project progress meetings.

This meeting / reporting regime is timed to support the internal Network Rail reporting requirements. The periodicity of the progress meetings may be adjusted to suit the requirements of the project stage.

7.3 Assurance

A traffic light / dashboard report will be presented to the inaugural Project Board to provide sufficient assurance that the project is dealing with the following key issues:

- Programme and Timetable
- Cost (including key cost milestones)
- Quality and partnership working
- Benefits realisation
- Skills and Capacity to deliver
- Risk management
- Health and Safety
- Communications (internal and external)
- Project evaluation

Regular reporting will take place with the LEP (via TfL) through a Quarterly Monitoring Report (QMR) which encompasses project progress and financial performance based on the previous DfT process. This ensures that the LEP have:

- A summary of in year finance
- Progress against milestones
- Current total estimated outturn costs
- Breakdown of expenditure
- Summary of grant forecast and claims
-

The QMR process undertaken for the DfT and to be replicated with this project requires the declaration of the Council's Chief Finance Officer (Section 151 Officer). The QMRs will be approved by the Project Board before they are submitted to the LEP.

As part of the project there will be regular reporting to the Council's Executive Board detailing delivery of package elements and financial progress. This ensures that the project is held to account by Councillors and the General Public and provides the public with a detailed update on the Project's programme.

Under the Council's constitution there is a process of Overview and Scrutiny which has been introduced to ensure that members and officers are fully accountable for their decisions.

The rail scheme falls under the auspices of the "Regeneration and Neighbourhoods Overview and Scrutiny Committee" who may wish to recommend that aspects of the scheme are scrutinised in greater detail at any point within the project's delivery. The Committee is made up of members from all political parties, and importantly, Councillors on the Executive Board cannot serve on the Committee.

These reporting arrangements identify what assurance will be provided, when and by whom, which will ensure that Project Assurance remains integral to the roll out and successful delivery of enhanced service pattern to Manchester from Blackburn and station waiting improvements north of Blackburn and at Darwen.

A full Assurance Plan for the project is included as **Appendix M** for this document.

7.4 Delivery Programme

A programme from Network Rail has been developed and is attached. This will require further work now that Network Rail have addressed the signalling record risk issue that was identified in October see below: In terms of the programme for station investment this will be delivered in Q2 and Q3 of 2015/16 with the budget of £325k being the maximum allocated to the investment and the project determined by this level of funding

High Level Milestone:	Date by which Milestone will be met:
Contract Award for Implementation	14/11/14 (now completed)
Completion of signalling design	August 2015
Bridge Works	August/September 2015
Scheme Commissioning	November 2015

Table 7.1: Timetable of High Level Milestones

Critical risks and measures for mitigation were identified by Network Rail in October 2014:

Critical Risk:	Measures to mitigate Risk:
Signalling design – record availability due to demand from other schemes	The necessary records are being pre-ordered, and the design works will be planned to fit the availability of each record.
Signalling testing and commissioning resource availability	The Contractor has in house resources, which have been confirmed. This will be further assured by the provision of a list of individuals by name, together with personal competence, approximately 3 months before the commissioning.
Retaining wall renovation – access to undertake works	Initial proposal would require access from gardens abutting the railway which have been extended on to railway land. Alternative approaches are being identified to avoid potential conflict.
Drainage – identification of acceptable solution for culverts	Discussions are ongoing with the relevant Asset Manager to confirm that the previously agreed options are still acceptable.
Farnworth tunnel blockade	The programme is planned to fit within the Farnworth tunnel blockade. An extension to the blockade may present opportunities to further de-risk the Blackburn-Bolton programme. A deferral of the Farnworth blockade would necessitate further discussions with BwDC and Northern Trains to identify a mutually acceptable opportunity to undertake the works.

Table 7.2: Critical Risks and Mitigation Measures

A detailed scheme delivery programme is included in **Appendix J**.

7.5 Risk Management

A Quantitative Cost Risk Analysis (QCRA) workshop was held in Square One, Manchester on 28th January 2014 with the objective of reviewing the risk exposure and proposing a contingency figure for the Bolton to Blackburn project. Representatives of Network Rail, Mott MacDonald, Transport for Greater Manchester and Blackburn Council were present. All participated in the deliberations.

The objectives of the meeting were to:

- identify significant risks to the achievement of the project objectives

- establish a project risk register in Active Risk Manager (ARM)
- identify actions to be undertaken to increase the probability of project success
- conduct an assumption analysis and identify any constraints

The risks to the project were identified in a brainstormed session. Mott MacDonald's risk register was also reviewed. Each risk was then analysed to understand the probability of occurrence and impact of the risks on the project outcome. A risk owner was allocated and a treatment strategy decided upon.

Evaluation was conducted using Monte Carlo analysis, using @Risk software, 10,000 simulations were used.

The mean level of risk exposure was identified at £913,000 with the 80% confidence level assessed at £1.13m (the latter figure being included within the emerging cost schedule).

The P80 risk value is built into the Emerging Cost contract for the scheme along with further payments made to cover risk and exposure to Network Rail of third party funded schemes.

Network Rail is not funded for third party enhancements that arise between periodic reviews, or for the cost risks associated with them. In order to provide it with funding for the risks associated with investment of third party schemes risk funds have been established to fund these costs.

Ultimately the GRIP 4 - 8 emerging cost for the rail enhancement to Manchester also takes into account payment into two funds to cover Network Rail's potential liabilities arising from investment and to cover specific industry cost risks:

Network Rail fee fund (NRFF): intended to cover Network Rail's potential liabilities arising from the template agreements. Network Rail must contribute £10m to this fund in the event it is exhausted to ensure it is incentivised to minimise the risk of calls on the fund.

Industry risk fund (IRF): intended to cover low probability, high impact industry risks, such as the impact of an operational emergency elsewhere on the network on a scheme.

The contributions to the funds are calculated as percentages of costs. The total amount to be paid to both funds for this project has been calculated at £707,358.64

In order to provide some assurance for the emerging cost calculation Network Rail was asked to provide information on the success of emerging cost contracts in terms of performing to estimated GRIP 4-8 financial profile.

The table below compares the emerging costs and AFC for Todmorden, Salford and Llandudno against the GRIP 4-8 estimate on which the project authority is based (correct as at Feb 2014).

On average it would appear that Network Rail anticipated final costs are 6% less than the estimate.

Reference	Project Name	Project Estimate	Progress	AFC	AFC Difference to Estimate
a	Todmorden	9,950,591	85%	9,224,771	725,820
b	Salford	10,772,477	98%	10,143,109	629,368
c	Llandudno	4,923,413	84%	4,637,986	285,427
Total		25,646,481	90%	24,005,866	1,640,615

Table 7.3: Emerging Costs vs AFC for example stations

- Risk management is a dynamic process through the design stage and Network Rail will be holding various risk workshop's in partnership with BwDBC (with LCC and TfGM representation) as part of Network Rail's process these will support commercial activities as well as the delivery of the project works
- The risks will be allocated during the various risk workshops to an appropriate risk owner (named individuals rather than organisations) who will be responsible for managing / mitigating the risks.
- The reporting of risks will be restricted to the risks which threaten a key milestone.
- The authority to action and allocate resources will rest with Network Rail Project Manager or the Principle Contractor Project Manager.

The output Risk Register for the project, produced at a workshop on 13th February 2015 is appended to this document as **Appendix S**.

7.6 Communications and Stakeholder Management

This section outlines the proposed communications strategy to support the communication and engagement process required for delivery of the Blackburn to Manchester rail scheme.

Activity will broadly focus on the following key areas:

Engaging with the media	Engaging with the public	Engaging with stakeholders
Strong relationships with the media are important for cascading information to the varied audiences affected by the scheme.	Effective engagement with both rail and non-rail passengers.	Effective engagement with stakeholders will be key in ensuring there is continued support for the scheme.

Key stakeholder audiences for the activities include:

- Local Communities including rail and non-rail passengers;
- Community Rail Lancashire (Clitheroe Line Community Rail Partnership);
- Local Councillors;
- Local MPs; and
- Local businesses.

The following table highlights the proposed action plan for the Communications strategy including objectives and key anticipated dates for the activities:

Objective	Audience	Activity	Suggested Date
Engaging with political stakeholders	Politicians and local elected members	<p>Briefing notes</p> <p>Project overview</p> <p>Distribute regular briefing notes for members – reiterating what the project is about and proposed project programme/timescales.</p> <p>Distribute briefing notes to MPs</p> <p>Briefing notes on the councillor portal on the council intranet and staff intranet.</p> <p>Regular updates on progress.</p> <p>Milestones</p> <p>Updates on progress and when key milestones have been reached</p> <p>Face to face briefings</p> <p>As and when necessary for key stakeholders</p>	<p>2015</p> <p>Communication will be required through the construction phases</p>
Engaging with the public	Rail passengers, general public and businesses	<p>Regular Update Reports</p> <p>To update the general public on progress during the construction phase. This will be on the Councils' websites and through usual PR channels</p> <p>Intranet</p> <p>Maintain web presence for the project to include latest news, frequently asked questions, downloadable plans and project timetable.</p> <p>Social media</p> <p>Publish key progress on the scheme via twitter and linked to community facebook pages – linking back through to the Councils' web pages.</p> <p>Deposit locations</p> <p>placement of plans in libraries and other key locations where necessary</p> <p>Ensure Council contact centres are fully briefed on programme and progress and develop any FAQ's on a continuing basis.</p>	<p>2015 onwards -</p> <p>Information on the project will be vital during the construction phase informing rail passengers, non-rail passengers and businesses of planned works to mitigate disruption and inconvenience.</p>

Objective	Audience	Activity	Suggested Date
Engaging with the media	Media relations and trade press	News releases Issue joint press releases throughout the project Updates when key milestones achieved	2015 onwards
Engage with stakeholders		Regular meeting with the project team and key stakeholders where appropriate throughout the project Community Rail Lancashire (Clitheroe Line Community Rail Partnership)	2015 Communication during and following construction phases.

Table 7.4: Communications Strategy Action Plan

7.7 Fall back plans

All the alternatives consisted of mechanisms to facilitate the provision of the inter-peak rail service without risking deterioration in punctuality on the route, involving either double tracking or speed improvements (see Section 3.11 for details). The decision to pursue the selected 'double track' option in isolation was taken when it emerged that the nearest 'speed improvement' alternative would be significantly more expensive than initially estimated.

It is clear from the table, that the selected option has no low-cost alternative, because it is the cheapest option itself. The only alternative is therefore the 'Do Nothing' option, which would not provide the rail services desired and therefore not provide the travel and regeneration benefits described.

Intervention	Length of double track section	AFC (£000s)
Intervention 1: Extend Darwen Loop	3,200 m	14,246
Intervention 2: Double track from Bromley Cross to Darwen station	9,600 m	42,886
Intervention 3: Double track from Bromley Cross to Sough tunnel	5,600 m	21,504
Intervention 4: Double track from Darwen to Blackburn Bolton Junction	5,200 m	27,198

Table 7.5: Overview of all assessed options for double tracking (GRIP 3 Report)

7.8 Governance Regarding Farnworth Tunnel Blockade

Whilst there are significant links between the Blackburn to Manchester Rail Scheme and the works associated with the Farnworth Tunnel, it should be noted that the two projects are physically independent. That is, if there were to be an issue with regard to the delivery of either project, this would not impact upon the other. Engineering trains and materials may only access the site from the northern (Blackburn) end of the rail line and are consequently unaffected by the Farnworth works.

There are, however, two areas of interface between the two projects which should be noted:

Timetable: Northern require confirmation from Network Rails train planning team in Milton Keynes that their degraded services can run as planned when the Farnworth and our projects are considered together. Northern have therefore been advised that the timetabling exercise will be completed by the end of February.

Engineering train resources: Northern have been advised that there is an oversubscription of this resource and that currently the train plan for the Farnworth project has not been fully resourced. Network Rail are working on this and projects such as the Blackburn to Manchester Rail Scheme have been consulted and have changed their requirements to assist in relieving the oversubscription of certain types of equipment. There is also a project prioritisation exercise that is looking at rescheduling non critical projects to assist. As such there is not anticipated to be any impact upon the currently proposed schedule of works for the project.

7.9 Monitoring and Evaluation

Appendix P contains the Monitoring and Evaluation plan report for the Blackburn to Manchester Rail Scheme.

7.9.1 Stage 1: Baseline and Pre Scheme Data Collection

Baseline data shall be collected prior to the commencement of the work on the scheme and during scheme construction to ensure that data is available for comparison with the post opening scenario. This will involve supplementing data collected for the development of the Major Scheme business case.

The baseline data will mostly be collected in Summer/Winter 2015 and collated, analysed and reported in the pre scheme opening report. This will be submitted to the LEP toward the middle of 2016.

The background data which provides the baseline for the Pennine Reach Monitoring and Evaluation Plan comes from a range of sources which are summarised in the paragraphs below and detailed in Table 6.1. Some of this data is readily available and some will have to be collected.

Data that is already available and will need to be collated includes:

- Local rail patronage

Provided by the TOC & Community Rail Lancashire using Lennon data

- Local levels of congestion on primary routes

Data available from DfT databases and trafficmaster

- Workplace GVA per capita

Data to be extracted from NI166 average earnings of employees in the area

- Economic Characteristics

National and local statistics. Indices of Multiple deprivation for 2010 to be used for baseline.

- Number of AQMA areas and levels of Nitrogen Dioxide

Data available from local councils

- Carbon levels

Based on rail industry modelling the number of highway car km avoided grows as a result of this scheme grows from 342,000 in 2016/17 to 498,000 in the final modelled year of 2032. By 2021 it is anticipated that 380,000 vehicle kms avoided at an average of 130g/km is 49400kg of CO₂

- Accident data

To be collected from Lancashire Constabulary records for local roads along the rail corridor. To be measured annually with the baseline being set as Winter 2015.

- Number of Stations with customer information screens and modern waiting shelters

Data available from Lancashire County Council, Blackburn with Darwen Council and Community Rail Lancashire.

Data that needs to be collected to supplement the existing available data includes:

- Rail punctuality:

Based on public performance measure for Lancashire & Cumbria present PPM is at 91% with Northern striving for 95%. This data will be provided by Network Rail /TOC.

- Modal share in Blackburn and Darwen town centres:

Cordon count data taken each year in Blackburn (April) and Darwen (September) will be used to provide detail on the modal split of all journeys into and out of the town centre over a 12 hour period. Historic data from the last 10 years can be used as a comparison.

- Passenger attitudinal/ satisfaction surveys
- Face to face interviews will be undertaken at Blackburn and Darwen rail stations to repeat surveys previously completed in September 2012 by Eden business Analysis.
- The survey will collect data on origin and destination, journey purpose and journey frequency.

7.9.2 Stage 2: Year 1: Post Scheme Data Collection

Stage 2, post scheme data collection, will be carried out in Winter 2018 and will include a repeat of the baseline data collection exercise (see section 6.4, Stage 1). However it is anticipated that additional data sources will be utilised, which are not currently monitored/available or which could not be collected prior to implementation. Winter 2018 has been selected to allow data collection in the same period of the year as the Baseline data.

Data collected during Stage 2 will be analysed and compared with the baseline data and with the forecasts at the appraisal stage to inform the evaluation and attribution of impacts. For further details of how the data will be used to analyse the scheme please refer to section 5.

A post completion Stage 2 report, evaluating the project outputs, will be produced focusing on the outturn cost, schedule and quality of delivery or key outputs. The report will include assimilated and analysed data assessing the impact the project has had so far on the key outcomes and on the Scheme Objectives. The report will include the conclusions of the Process, Impact and Economic Evaluations up to 12 months post service delivery.

The Stage 2 report will be submitted in 2018 (depending upon the delivery of the project)

7.9.3 Stage 3: Year 5: Post Scheme Data Collection

This will include a repeat of the Stage 1 and 2 data collection exercise (see sections 6.4 and 6.5, stage 1 and 2 for details) to determine the effects of the scheme five years after opening. This information will be analysed and reported in the Year 5, post scheme opening report. At this stage it will be possible to identify the long term trends that have occurred since the implementation of the enhanced service frequency between Blackburn and Manchester and the improved station waiting environments and whether the scheme can be termed 'successful' against the scheme objectives

7.9.4 Project Governance

In terms of Monitoring and Evaluation this is detailed as follows:

Responsibility for the delivery of the Blackburn to Manchester Monitoring and Evaluation Plan lies with the Project Board. As this scheme is a third party funded enhancement to the local rail network being delivered by Network Rail, responsibility for this plan lies with the Project Board.

Both BwDBC and Network Rail have Senior Management representation at Director Level on the Project Board which has the ultimate responsibility for sanctioning and approving the scope of material changes.

It will be the responsibility of an Independent Consultant to develop the Blackburn to Manchester Rail Monitoring and Evaluation Plan. It will be the responsibility of the Scheme Sponsors, Project Director and Project Manager to produce the brief and specification which will then go out to procurement in Autumn 2016 post construction.

Development of the Monitoring and Evaluation Plan will be undertaken by the Blackburn to Manchester project team which comprises the following disciplines:

- Network Rail projects
- Public Transport
- Regeneration
- PR /Comms

Quality Assurance will be ensured by the Project Team:

- Checking progress against agreed project brief and programme
- Checking progress against agreed project milestones and deliverables
- Reporting at key milestone points to the Project Board i.e. in the initial data collection period in Winter 2016, the Winter 2018 post scheme data collection period and year 1 report (to be completed and submitted to the LEP by December 2018), and Autumn 2022 data collection period to inform the year 5 report (to be completed and submitted to the LEP by Winter 2022)
- Ensuring that regular dialogue takes place and that update reports are produced on a 6 monthly basis to ensure data is ready for collection in the right format, collated, analysed and evaluated
- Working with the Council Audit Team to regularly review the progress of the project, in terms of meeting LEP (DfT) requirements for major schemes.

The Project Team, and specifically the Project Manager, will manage the Independent Research Consultant to ensure the effective collation of information and data sources.

Reporting to the Project Board, the Project Team will ensure the quality aspect of the Monitoring and Evaluation Plan in line with the agreed brief and specification. The detail of the Plan will be incorporated into the risk register and the Council's Corporate Risk Register and reviewed at regular intervals by the Project Team and Project Board.

The milestones for the Monitoring and Evaluation Plan are as follows:

- Post Full Approval: produce specification and tender for Monitoring and Evaluation plan in line with information in Section 7
- Autumn 2016: procure and engage with research specialist to undertake the M&E Plan throughout the course of the project, contracted to produce:
- From Winter 2016 and on an annual basis: to update data and research in line with the baseline and pre scheme data collection (in section 6.4): collecting baseline data and previous research and then in line with post scheme (in section 6.5): collecting operational data and managing the conducting of surveys and research.
- The Project Team will ensure that secondary data is reliable and submitted in a timely manner to the Consultant.
- The Project Team will ensure that credentials are supplied to the Consultant to enable the receipt and collation of primary data.
- Interim reports will be produced by the Consultant on an annual basis to ensure data is built and ready to reporting to the LEP at the following agreed intervals:
- Update reports on a 6 monthly basis to ensure data is collated and stored for:
- Interim reporting to the LEP and published as the Councils Stage 1 report in Spring 2016
- Stage report including detail of the 12 month period following service introduction (Dec 2018)
- Final reporting to the DfT and published by the Councils 5 years after opening in April 2022.

7.10 Conclusion

The Blackburn to Manchester rail scheme will be completed over the course of 2015 with detailed design and construction occurring within 12 months, and new rail services commencing no later than timetable change in December 2017.

As mentioned in Section 4, the operational implementation of the scheme is influenced by the Northern Hub package of enhancements, with the section between Manchester and Bolton to be electrified by December 2016 under Phase 4 of the North West Electrification Project. For this reason, the full benefits from additional services between Blackburn and Bolton will start at the end of 2017 together with the major timetable change. In the meantime, the improved reliability and enhanced station quality will be available immediately after the construction of the proposed scheme i.e. in late 2015.

Information provided within the Management Case evidences that:

- Robust governance, assurance and risk management processes are in place to deliver the scheme - The management of the scheme is being driven in accordance with Network Rail third party funded infrastructure enhancement projects;
- Risks have been fully considered and mitigated - A detailed Quantitative Cost Risk Analysis has been undertaken for the scheme by Network Rail in partnership with BwDBC and TfGM;
- Stakeholder views have been taken into account in scheme development;
- A communications and stakeholder management strategy is in place to ensure effective engagement through scheme delivery; and
- Monitoring and Evaluation plans will provide data to assess the success of the scheme in meeting its objectives.

8.1 Summary

The findings of this Major Scheme Business Case may be summarised via the following bullet points broken down by case component:

8.1.1 The Strategic Case

It is found that the scheme has the following benefits:

- **Operational Benefits**
 - Improved inter-peak service;
 - Reduction in number of vehicles on the local highway network;
 - Improved road safety;
- **Social Benefits:**
 - Enhanced access to employment and education opportunities;
 - Increased travel horizons;
- **Economic Benefits:**
 - Increased attractiveness of Pennine Lancashire as a place to do business and to live and work;
 - Modal shift to rail;
 - Growth in rail use;
- **Environmental Benefits:**
 - Reductions in pollution, noise, accidents and road congestion;
 - Increased energy efficiency and reduced greenhouse gas emissions.

8.1.1 The Economic Case

The main findings of the economic case are as follows:

- The total efficiency benefits of the scheme are estimated to be **£28.3m** across all modes;
 - The wider economic impacts of the scheme are estimated at **£14.9m** over the period of appraisal;
 - Considering appropriate optimism bias and a pragmatic view of likely generated demand, the Net Present Value (NPV) of the scheme is **£22.3 million**, and the Benefit to Cost Ratio (BCR) is estimated at **4.63**;
 - This rises to **6.93** when the full wider economic impacts of the scheme are taken into account;
- The scheme is therefore judged to represent **very high value for money**.

8.1.1 The Financial Case

The main findings of the financial case are as follows:

- The capital cost of the scheme is **£13.679 million**;
- Mobilisation and operating costs for the proposed train service will be met by the successful bidder for the Northern Rail franchise as part of their franchise specification;
- Blackburn with Darwen Borough Council's funding contribution to the scheme is **£1.179 million** with an additional **£100,000** made available from Lancashire County Council;
- The ask from the Local Growth Fund is **£12.4 million** (£3.4 million competitive, £9 million non-competitive);
- This is to be drawn entirely in FY 15/16 with the Council committing to cover any preparatory costs incurred during FY14/15 as part of their match funding contribution.

8.1.1 The Commercial Case

The main findings from the commercial case are as follows:

- The project is intended to be delivered through Network Rail's Control Period 5 panel framework;
- The contractor to be used is VolkerRail with civil engineering works delivered by Buckingham Group contracting;
- Project risk will be allocated and managed in accordance with the CP5 Framework attached in **Appendix K**.

8.1.1 The Management Case

The main findings from the management case are as follows:

- The project board will meet quarterly from January 2015;
- The project delivery team will meet every four weeks;
- The client and stakeholder management group will meet fortnightly to plan the communications strategy;
- A full assurance plan has been produced and is appended as **Appendix M**;
- A Monitoring and Evaluation Plan has been produced and is appended as **Appendix P**.

8.2 Conclusions

The Major Scheme Business Case for the Blackburn to Manchester rail scheme presents a clear rationale for investment, providing evidence that investing in the transport infrastructure of the railway:

- Addresses key issues for Blackburn with Darwen, helping to reduce reliance on the private car;
- Improves linkage to the major employment centre of Manchester;
- Supports the wider Lancashire Enterprise Partnership in terms of growth and regeneration benefits;
- Delivers on core local, regional, and national government objectives and holds political and public support across the LCR;
- Provides high value for money; and
- Is robust, deliverable and achievable.

At an operational level, the improvements proposed will provide Blackburn with Darwen, and its immediate neighbours, with a well-functioning and reliable supporting transport network; this is required to ensure that the network can cope with increasing demand. The strategic benefits of the scheme will be felt far wider, however, and will support the LEP's aspirations for sustained economic growth and regeneration, particularly within Blackburn which has high levels of economic and social deprivation.

It is for these reasons that the Blackburn to Manchester Rail scheme is considered an integral scheme of the Local Growth Fund and investment is therefore strongly recommended.