



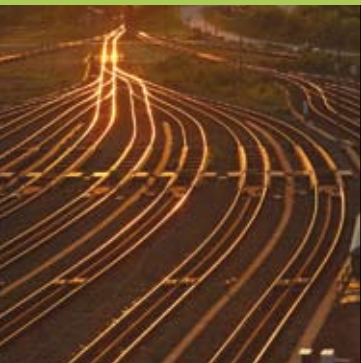
On Track: Why rail matters

Cities represent the backbone of the UK economy. In 2008, almost 60 percent of jobs in Great Britain were located in cities. Underpinning these jobs is the UK's transport network which helps to facilitate economic interactions within and between cities and towns in the UK. The railway network is at the heart of this connectivity process, offering an efficient and environmentally friendly means by which people can access jobs and business can access new customers and suppliers.



Supported by

ATOC



“The evidence provided in this report demonstrates the benefits of targeting that investment in infrastructure which supports economic growth”

The Government’s top priority is reducing last year’s record breaking fiscal deficit of £156 billion. To reduce this deficit, on the one hand, Government spending will have to be significantly reduced, which means cuts being made to all departmental budgets, including spending on transport infrastructure. On the other hand, the UK will need to create more private sector jobs to generate economic growth.

As the Country faces up to this stark political reality it must also confront the fact that cities and towns across the UK differ in their ability to generate more private sector jobs. Transport and, in particular, the rail network can play a significant part in helping to facilitate more economic activity. Typically, the better a city and town is connected internally and externally, the better placed it is to take advantage of economic opportunities. This is because investment in transport infrastructure:

- supports business interaction
- connects people to jobs and widens the labour market
- opens up new markets for companies and
- increases competition leading to higher levels of business productivity

This report looks at five planned investments in improvements to the rail network and sets out how they will benefit a selection of two cities or towns along each line, helping to support jobs and boost local economies.

The report provides a snapshot of the benefits of these five improvements to people who travel between two cities or towns on each line. It demonstrates the monetary value of these targeted investments in terms of time savings to people as well as other benefits, such as providing more reliable and improved services. We also examine potential agglomeration benefits to people and businesses in each of the case study cities and towns.

Over the next Parliament, scarce capital investment will need to be deployed carefully and effectively. The evidence provided in this report demonstrates the benefits of targeting that investment in infrastructure which supports economic growth, such as investment in the railway network.

Acknowledgements

Centre for Cities would like to thank ATOC for supporting this report. We are also grateful to East Midlands Trains, ScotRail, Northern, First Transpennine Express and Chiltern Railways.



1. Introduction

Context – Politics and Policy

The UK has now begun a fragile recovery following the worst recession since the Second World War. The 2009/10 budget deficit was £156 billion (2009/10),¹ and the coalition agreement made reducing this deficit the number one priority of the new Government. The recent emergency Budget sets out the coalition Government's actions to reduce the budget deficit to £149bn in 2010/11, implying transport spending cuts of around 25 percent.²

However, paying off the debt needs to be done in a way that protects the investment that the UK needs to strengthen future growth. In particular, this means ensuring that the reduced funding available is invested in the right infrastructure to link businesses together and to connect people to jobs.³ As set out in the Government's coalition agreement: *"The Government believes that a modern transport infrastructure is essential for a dynamic and entrepreneurial economy."*⁴

Despite cuts to transport budgets of 25 percent, the chancellor made it clear in his emergency Budget how important capital investment in good transport links remains for the British economy. *"I think an error was made in the early 1990s when the then Government cut capital spending too much – perhaps because it is easier to stop new things being built than to cut the budgets of existing programmes."*⁵

Faced with the need to strengthen the country's growth prospects, while addressing the UK's fiscal deficit, the Government now needs to consider which infrastructure funding to prioritise to support growth and help people access jobs.

The UK urgently needs to grow its private sector economy. Not only will this help plug the gap created by job losses from the recession and impending public sector spending cuts, it will also generate additional tax revenue that can be used to help repair the public finances. Good transport links to these private sector jobs will therefore be even more crucial in future. In England, cities and their hinterlands are home to more than 75 percent of the private sector workforce and they will be the key centres for future growth.⁶

Economic growth and transport are closely interrelated

Over time, cities have become ever more important as centres of jobs, as the industries that the UK can be competitive in change. There has been much debate about what the 'industries of the future' will be, how to move to a more 'balanced economy', and where future jobs will come from. As the UK returns to a sustainable growth path, comparative advantage will increasingly be focused on knowledge intensive production and services – such as business and professional services, digital industries, media, and advanced manufacturing.⁷

1. HM Treasury (2010) *The Budget 2010. Securing the recovery (March Budget)*.

2. HM Treasury (2010) *The Budget 2010 (June Budget)*

3. ATOC (2010), Letter to Rt Hon Theresa Villiers MP, 24 June 2010

4. HM Government (2010): *The Coalition: our programme for government*

5. See: www.hm-treasury.gov.uk/junebudget_speech.htm

6. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities

7 Department for Business, Innovation and Skills (2010) *Going for growth: our future prosperity*

"Good transport links to private sector jobs will be even more crucial in future"



Many of these new industries tend to cluster in cities, where they derive ‘agglomeration benefits’ from being located near many other firms and suppliers and can rely on larger pools of labour. How many people and businesses can be accessed within a given amount of time (the size of the agglomeration benefit) depends not only on physical distance, but also on an area’s transport infrastructure. In this way, investment in transport infrastructure can increase agglomeration benefits.

Transport and economic growth are closely interrelated. More buoyant economies have increased demand for transport services. We have seen this over the past decade, where, alongside sustained economic growth, rail freight demand (measured in tonnes/km) has increased by over 60 percent since 1995, and passenger rail has both grown in absolute terms and increased its market share.⁸ In addition many parts of the road network have started to reach saturation – meaning rail is likely to become even more critical in meeting travel needs that are sustainable in the future.

And it’s a two-way relationship. Transport also underpins economic growth.⁹ Functioning transport networks are essential to supporting business interaction and connecting people to jobs. Rail travel, in particular, caters for many high value trips.¹⁰ Transport infrastructure opens up new markets for companies, helps increase competition and widens labour markets. Year after year, improving transport links remains a key priority for business.¹¹

Rail is important for the economy, because more and more people travel to work by train, and many companies rely on trains to transport their goods and supplies. Rail freight now has a 12 percent share of the UK’s surface freight market compared with 8 percent in 1994/95 – industry predicts its share will more than double by 2030.¹²

Objectives and methodology of this report

This report looks at planned improvements to five rail links, which are:

- **London/Sheffield:** linespeed improvements through track, signalling and junction remodelling
- **Liverpool/Manchester:** electrification
- **Huddersfield/Leeds:** line upgrade
- **London/Solihull:** line upgrade
- **Bathgate/Glasgow:** construction of a new, electrified track between Drumgelloch and Bathgate, doubling of existing single track section between Drumgelloch and Airdrie and between Bathgate and Edinburgh, and construction of three new stations.¹³ This is known locally as the ‘Airdrie to Bathgate Rail Link’.

8. ATOC, *Network Rail and Rail Freight Operator’s Association (2009): Planning ahead: Control Period 5 and beyond. Britain’s railway from 2014.*

9. Eddington R (2006) *The Eddington Transport Study. Transport’s role in sustaining the UK’s productivity and competitiveness*

10. Fearnley N (2006) *Public transport subsidies in the UK: evidence of distributional effects. In World Transport Policy and Practice, Vol. 12 (1), pp 31-40*

11. See for example: *British Chambers of Commerce (2010) Reconnecting Britain: A business infrastructure journey*

12. See: www.networkrail.co.uk/asp/1530.aspx

13. Note that this project is part of Transport Scotland’s wider Edinburgh to Glasgow improvement programme, which will increase frequencies between the two cities to 13 trains per hour.

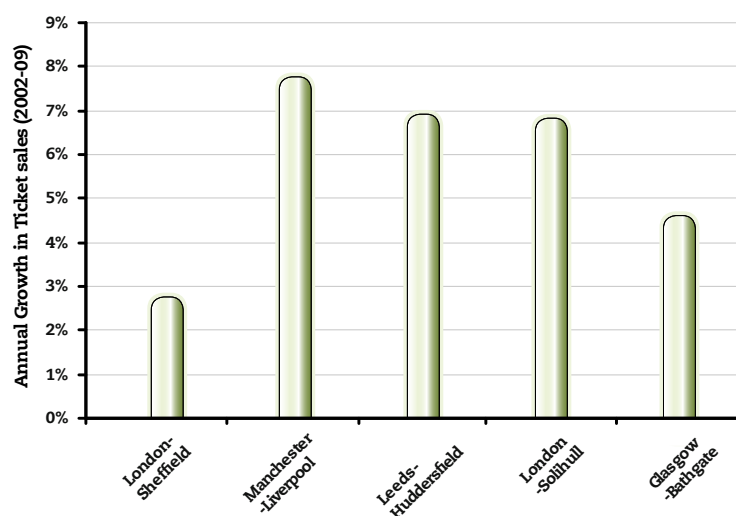
“Transport infrastructure opens up new markets for companies, helps increase competition and widens labour markets”



“We study how many people and businesses could potentially derive agglomeration benefits from rail investment”

Rail travel in our five case studies has increased steadily since 2002 as shown by Figure 1 below.

Figure 1: Annual growth in passenger journeys (2002-09)



Source: ATOC (2010), 2002-2009 ticket sales data. Data in financial years.

The case studies were chosen to represent a cross-section of Train Operating Companies, a variety of different types of improvement project, and different countries and regions of the UK. With the exception of the London/Solihull case study these case study rail improvement projects are all part of Control Period 4, the current rail planning period (see Box 1).

This report takes a snapshot of the benefits to passengers who travel between two cities or towns on each of the five case study rail lines. It calculates the monetary value of these targeted investments in terms of time savings to people and also examines other benefits, such as providing more reliable and improved services. We examine these benefits for passengers travelling between ‘A’ and ‘Z’ (e.g. Solihull and London), rather than ‘A to Z’ (e.g. Solihull, Dorridge, Warwick, Leamington, Banbury, Bicester and London). Naturally, the passenger numbers we examine are therefore smaller than the total number of passengers benefitting from the five rail improvements.

We also examine more indirect benefits of the five rail improvements. We study how many people and businesses could potentially derive agglomeration benefits from rail investment in general in each of the case study cities and towns. For each case study, the report then illustrates the benefits that could result to certain types of people and businesses in the two selected cities or towns. The report also points to the potential agglomeration benefits to the cities’ and towns’ wider hinterlands based on the time saving between each city or town pair delivered by the rail improvements in their totality.

This report does not aim to replicate the transport investment appraisal process – through their inclusion in the current rail planning period all of the five schemes we examine have already been proven to be value for money.¹⁴

14. Note that the Evergreen 3 project is funded privately and not part of CP4.



Box 1: Control Period 4 and 5 and the emergency Budget

Since 1996 Network Rail (previously Railtrack) has operated in five year planning periods, so called 'Control Periods'. Most of the schemes examined in this report form part of Control Period (CP) 4, which runs from 1 April 2009 to 31 March 2014.

Total spend in CP4 is estimated at over £34bn by Network Rail in 2009/10 prices, £8bn of which will be invested in network enhancements including projects to relieve congestion and overcrowding. £11.5bn will be invested in renewals and £3.7bn in additional investments such as Network Rail's contribution to Crossrail.¹⁵ However, much of this spend is now under review. Funding for CP5 (2014-2019), for which the Department for Transport (DfT) is due to publish its 2014-2019 High Level Output Specification in 2012, is even less certain.

The size of the UK's budget deficit means that even where investment has been committed the new Government is exploring ways by which the scope of such investment can be reduced, if not stopped. In the context of this report, the emergency Budget in June confirmed that the London to Sheffield and Huddersfield to Leeds line improvements will definitely continue.¹⁶ Although not discussed in the emergency Budget, it should be noted that our other three case studies are likely to proceed as well. Bathgate to Glasgow is nearly completed and London to Solihull is being financed privately. The Coalition Agreement confirmed the Government's support to further electrification on the rail network, which includes projects such as the Manchester to Liverpool line.

Final certainty about the wider spending commitments will emerge after the Spending Review in the Autumn which will set spending limits for every Government department for the period 2011-12 to 2014-15.

"The emergency Budget in June confirmed that the London to Sheffield and Huddersfield to Leeds line improvements will definitely continue"

15. Network Rail (2008) *More trains, more seats. Better journeys. Summary Control Period 4 Delivery Plan 2009.*
16. See: www.hm-treasury.gov.uk/junebudget_speech.htm



2. How does transport investment benefit cities?

Transport underpins economic growth by connecting people to jobs and enabling businesses to access wider markets for consumers and suppliers. To identify the benefits that accrue to city economies from better transport links, we consider two types of benefits:

(a) User benefits

(b) Agglomeration benefits

This report doesn't attempt to quantify all of these, often complex, benefits precisely. Instead it offers an understanding of how transport improvements support economic growth and improve passenger experiences, and gives a snapshot of the benefits for specific city economies.

User benefits

Many of the investment projects under Control Period 4 (2009-14) (see also Box 1) will result in quicker, more efficient services and provide many direct benefits to people and businesses that use the train. The importance of *journey time savings* varies across different schemes and also needs to be considered relative to other modes of transport, most importantly the car. Time savings on our five selected case studies range from between two to twenty three minutes.¹⁷

Commuters in particular will benefit from the investments in Control Period 4. Over the last decade there has been a steady shift to commuting by train away from other transport modes. On the three commuter routes out of the five routes we looked at – Huddersfield/Leeds, Bathgate/Glasgow and Manchester/Liverpool – the share of rail travel was between 7.7 and 15.1 percent.¹⁸ We expect to see a continued increase in rail use in the commuter market in these case studies. Evidence for this is the share of season tickets sold between 2002 and 2009 on these routes. For travel between Manchester and Liverpool it increased by 13.5 percent each year and between Huddersfield/Dewsbury and Leeds it increased by a phenomenal 46.2 percent each year.¹⁹

In some cases time savings may be relatively small on individual trips but crucially they result in a more efficient service for passengers, and as the savings add up over time, they deliver real and lasting economic benefits as people use their time saved more productively. The DfT has developed guidance to establish a value on time savings. Using this value for each case study, we can evaluate the benefits for the passengers travelling between the two stations on the line. First-class time savings and 15 percent of standard class time savings²⁰ are valued as business trips, at £30.57 per hour; season ticket time savings are valued as commuter trips, at £5.04 per hour; all other trips are valued at £4.46 per hour.²¹

17. Note that there is also a 'time saving' of 62 minutes on the Bathgate to Glasgow route comparing travel times on existing train connections (e.g. via Edinburgh Park or via Haymarket) with the new line via Blackridge and Drumgelloch.

18. Data from NOMIS 2010, 2001 Census. Commuter routes are between Leeds and Kirklees, West Lothian and Glasgow, and Manchester and Liverpool.

19. ATOC (2010), Ticket sales data, 2009 data (financial year)

20. First class ticket sales tend to be relatively low and do not capture all of the business trips made on the five rail lines. The sum of the original percentage of first class tickets sold plus an extra 15 percent is in most cases below the percentage of trips cited as business trips in the DfT's 2008 National Rail Travel Survey Report. It therefore represents a relatively modest estimate of the real percentage of trips that are business trips.

21. See www.dft.gov.uk/

“Transport
underpins
economic growth
by connecting
people to jobs”



Tables 2, 4, 6, 8 and 10 in Section 3 show the time savings that accrue over different periods of time to passengers travelling between two cities or towns on each of our five case study schemes.²² As discussed previously, these represent just a fraction of the overall time savings on the entire line.

There will also be other benefits which improve the passenger experience and are likely to encourage greater use of the rail network. Such benefits include a greater frequency of service on the line, longer or newer trains, reduced overcrowding and better timetabling. These should enable train services to offer a more reliable service, with better transport integration into other local transport services and timetables. Moreover, measures like electrification can help rail reduce its carbon footprint at the same time as offering a more reliable service.

Rail has seen phenomenal levels of growth, with usage increasing by over 40 percent during the last decade alone.²³ The 2007 Government White Paper ‘Delivering a Sustainable Railway’ identified capacity constraints as a major issue. This and even further growth in rail travel, supported by the modal shift to rail, has created bottlenecks on the rail network. For example, almost one million journeys were made between Manchester and Liverpool in 2009. The number of trips on this route, which is already running at over-capacity, has been growing at seven percent per year between 2002 and 2009.

The new investment in the rail network as part of Control Period 4 will address these bottlenecks and will also facilitate greater economic linkages between places, which will help to underpin economic growth. Measures like train lengthening and increased frequency will enable more people to travel by a mode of transport that is more environmentally friendly than the car.

Agglomeration benefits

Benefits of transport improvements to direct users are obvious, but there are additional benefits from rail improvements which extend beyond simple user benefits. Transport infrastructure binds cities together, extending their economic footprint and strengthening markets, with benefits for both people and businesses. These are known as ‘agglomeration benefits’.

For *businesses*, better transport connections offer access to a wider pool of potential suppliers and customers within a given amount of time, and a broader labour market.²⁴ By exposing companies to larger concentrations of economic activity and more competition, better transport encourages the business base to be more productive. Figure 2 below displays the number of businesses in each of the cities and towns we look at and their hinterland,²⁵ that could be set to benefit from rail improvements in the country in general. These figures are reported in Tables 3, 5, 7, 9 and 11 in Section 3, where we discuss these firms in more detail to gain a better understanding what kinds of firms might benefit from our five case study investments in particular.

22. 60 years is the time frame used in the Department for Transport’s (DfT) standard transport appraisal. Our estimates are based on past growth in ticket sales on the five case study city routes (2002-2009). This differs from the formal DfT modelling process, which would also factor in forecast changes in GDP, changes in journey patterns, and future development.

23. Department for Transport (2007) *Delivering a sustainable railway*

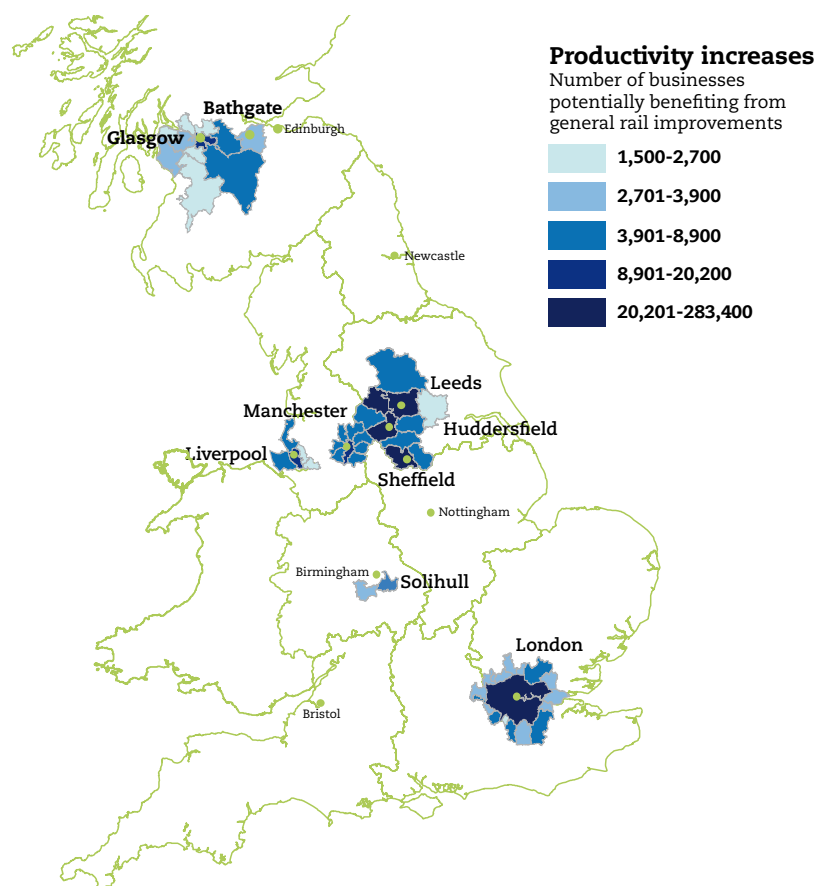
24. Graham, D (2006) *Investigating the link between productivity and agglomeration for UK industries*. Available from: www.southwesteip.co.uk/downloads/documents/20070316160706.pdf

25. Our definition of each case study’s hinterland is based on the specific journey time decrease expected on the route. We have also taken into account car travel times to the towns and cities examined, rail journey times and alternative available routes. Based on this we either fully or partly included a neighbouring area – or excluded it.

“Almost
one million
journeys were
made between
Manchester and
Liverpool in 2009”



Figure 2: Businesses potentially benefitting from general rail improvements



Source: NOMIS (2010), *Annual Business Inquiry, workplace analysis, 2008 data*. Northern Way (2009) and own analysis. Note that where local authority areas are only partly included the reduced number of businesses is mapped across the whole local authority area.

For *people*, better transport widens access to economic opportunities, such as shops, theatres or restaurants. A wider choice of jobs also means that people have a greater chance of finding the best, often better paid, job for them, given their skill set and preferences. Furthermore, business benefits from agglomeration can also lead to benefits for local employees, as more productive businesses can offer higher wages. Figure 3 displays the number of people that could potentially benefit in each of the cities and towns we look at and their hinterland²⁶ from rail improvements in general. These figures are reported in Tables 3, 5, 7, 9 and 11 in Section 3, where we discuss these people in more detail to gain a better understanding which kinds of people might benefit from our case study investments in particular.

Box 2: Rail improvements and wages

Research²⁷ shows the impact agglomeration has on people's wages depends on the skill level of the occupation they work in. Middle skills groups, which includes professions such as nursing, skilled trades or administrative jobs, are likely to benefit most from reductions in the generalised travel cost of rail (a combination of journey time and cost). Higher skilled occupations, like corporate managers or health professionals, are also likely to benefit, but by a smaller amount.

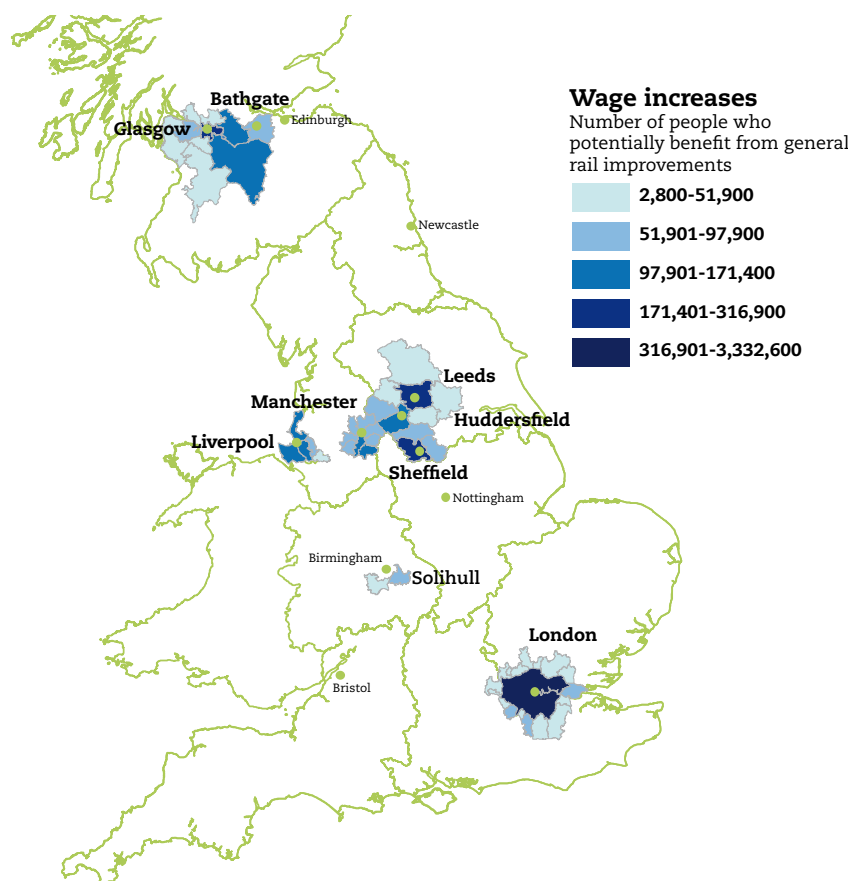
26. See footnote 24.

27. Northern Way (2009) *Strengthening Economic Linkages between Leeds and Manchester: Feasibility and Implications. Full Report*



“In Leeds the economic benefits of improving access into the city, beyond direct user benefits, are £13.7m”

Figure 3: People potentially benefitting from general rail improvements



Source: NOMIS (2010), Annual Population Survey, 2008 data. Northern Way (2009) and own analysis. Note that where local authority areas are only partly included the reduced number of people is mapped across the whole local authority area.

Although hard to quantify, the benefits of agglomeration can be significant. For example, Volterra estimates the agglomeration benefits to London from Crossrail are in the region of £17.2bn to £23.6bn – representing between 22-26 percent of the total benefits of Crossrail. Traditional user benefits account for between 16-26 percent of benefits.²⁸

In other UK cities the indirect effects of transport improvements are also noticeable. In Leeds, for example, the economic benefits of improving access into the city, beyond direct user benefits, are £13.7m which is estimated to represent around 25 percent of total economic benefits.²⁹

Agglomeration benefits reinforce business success in the global economy

Agglomeration benefits apply more to some sectors than to others. Businesses that operate in, for instance, finance and insurance, media services, business and management consultancy derive much more significant advantages from urbanised areas – with their wider networks and deeper labour pools – than, for instance, traditional manufacturing.³⁰ The latter is, unsurprisingly, more productive in out of town locations.

28. See Volterra (2007) *The Economic Benefits of Crossrail*

29. See Marshall A & Webber C (2007) *The case for better transport investment: agglomeration and growth in Leeds City Region*. London: Centre for Cities

30. Graham D (2006) *Investigating the link between productivity and agglomeration for UK industries*. Available from: www.southwesteip.co.uk/downloads/documents/20070316160706.pdf



“Globalisation has made the benefits of clustering together even more important for businesses”

This is why many of these service sector businesses tend to cluster together in cities – despite the costs of locating in a big city, such as congestion and higher office rents.³¹ For example, Leeds has developed into one of the most significant business, legal and financial centres outside London, and financial services firms are attracted to base their regional headquarters there, in part due to the presence of the cluster itself. The rail network within the city region underpins this cluster by linking people living in the more affluent areas of North Yorkshire into Leeds, and the financial services cluster is also strengthened by Leeds’s good rail links to London.

Globalisation has made the benefits of clustering together even more important for businesses. Barriers to trade across the world have fallen and emerging markets have become real sources of competition in many industries. This has reinforced industrial change in the UK and other advanced economies away from traditional manufacturing towards knowledge-based industries and services.

Industrial change has therefore shifted the UK’s source of competitiveness towards those sectors that benefit from agglomeration and thus tend to locate in cities. It is clear that cities with concentrations of these sectors will become more important as a source of growth and jobs,³² particularly as the UK emerges from a deep recession into a fragile recovery. Transport plays a key role in supporting this growth, connecting businesses and people to greater opportunities in cities.

31. See, for instance, Fujita M, Krugman P & Venables A (2000) *The Spatial Economy: Cities, Regions and International Trade*. Massachusetts Institute of Technology

32. Brown H (2008) *UK Cities in the Global Economy*. London: Centre for Cities



3. Five snapshot case studies

We have discussed how rail investment can benefit people and businesses in a city economy. Broadly speaking the benefits we examine fall into two categories: user benefits and agglomeration benefits. Using these two categories, we now look at how the planned improvements will benefit people travelling between two cities or towns on the five case study lines. We also examine agglomeration benefits for people and businesses located in each of the case study cities and towns and their hinterlands.

Table 1: Overview of the schemes

Overall scheme Description	The selected case studies		
	Places examined	Market	Completion
Linespeed improvements on the Midland Main Line between Sheffield and St Pancras, through track, signalling and junction remodelling. Cost = £67m	London Sheffield	Long distance	2013
Electrification of the Liverpool to Manchester line via Newton-le-Willow. Cost = £100m	Liverpool Manchester	Regional with commuting	2013
Upgrade of the line between Leeds and Liverpool. Cost = £30m	Huddersfield Leeds	Mainly commuting	2014
'Evergreen 3' upgrading of the Chiltern line from London Marylebone to Birmingham. ³³ Cost = £122m	London Solihull	Inter- regional	2011
Construction of a new electrified railway between Drumgelloch station and Bathgate (the "Airdrie-Bathgate Rail Link"), three new stations at Armadale, Blackridge and Caldercruix, and doubling existing single track sections between Edinburgh and Bathgate. Cost = £122m	Bathgate Glasgow	Mainly commuting	Dec 2010

Sources: Network Rail (2009), Network Rail (2010), www.airdriebathgaterailink.co.uk, Chiltern Railways (2010), DfT (2009)

London & Sheffield – stronger connections to a global city

	London (GOR ³⁴)	Sheffield (LA ³⁵)
Population (2008)	7,619,800	534,500
Median resident weekly earnings (2009)	£599	£458
Median workplace weekly earnings (2009)	£627	£459
Residents employed in knowledge jobs ³⁶ (2009)	54.3%	40.6%

Sheffield is working hard to shake off the legacy associated with post industrial decline. It is now the focus for the surrounding old coalfield towns of Rotherham, Doncaster and Barnsley, that previously helped feed the steel manufacturing industry which dominated Sheffield's development.

33. This project also includes the construction of a new branch to Oxford. However, the cost of this part of the scheme is not included in the £122m project cost in Table 1.

34. Government office region

35. Local authority

36. Knowledge jobs are defined as managers and senior officials; professional occupations; and associate professional & technical occupations.

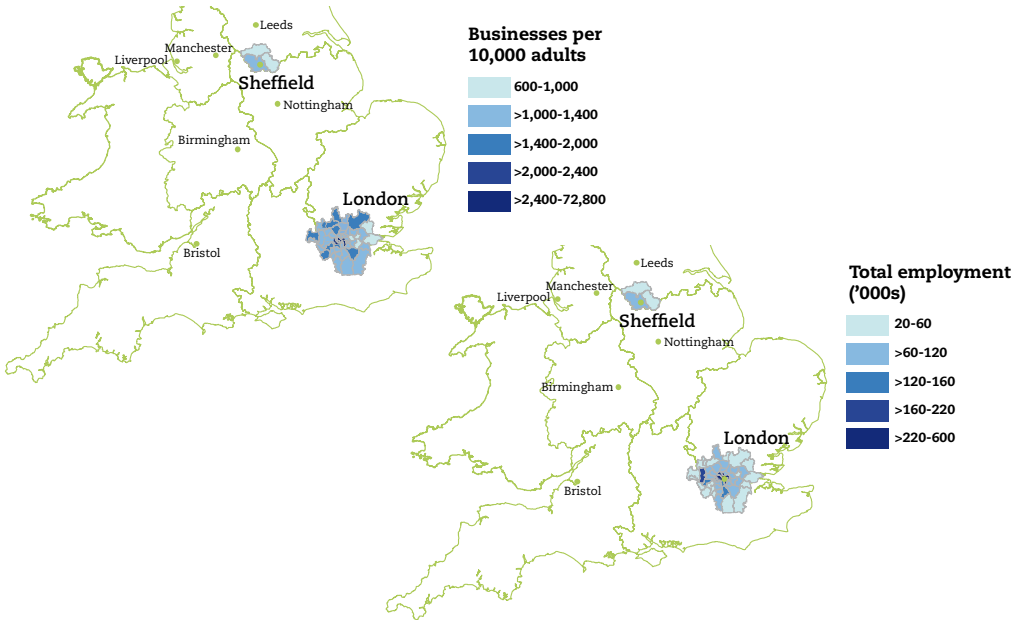
"Between 1998 and 2008 Sheffield grew its private sector economy by 11,200 jobs"



“The central role that London plays in the UK economy is beyond doubt”

Between 1998 and 2008 Sheffield grew its private sector economy by 11,200 jobs, while neighbouring Barnsley and Doncaster lost private sector jobs (2,300 and 5,000 respectively).³⁷ This has strengthened Sheffield’s economic position within the wider region. In recent years, the city has also undergone extensive physical regeneration helping to transform the city centre.

Figure 4: Business density & employment in London & Sheffield & their hinterlands



Source: Gavurin (2010), 2008 data

The central role that London plays in the UK economy is beyond doubt, accounting for 18.8 percent of Gross Value Added and 16 percent of jobs in Great Britain.³⁸ Between 1998 and 2008 London has added 321,000 private sector jobs. London is the focus of many different types of business cluster which not only play a leading role in the UK (see Figure 4)³⁹ but across the world as well.

Sheffield is 270 kilometres from London and better links to the capital would open up a real opportunity for businesses in Sheffield and lead to benefits for Sheffield’s hinterland. Businesses, for example, will gain easier access to the markets of the capital and its international connections. Indeed, it is clear London is already important to Sheffield’s economy. A breakdown of journeys on the Sheffield to London route by ticket types shows the importance of business journeys. Over 20 percent of journeys made between the two cities are first class.

User benefits

London to Sheffield			
	Before	After	Saving:
Depart	07:30	07:30	8 mins
Arrive	09:43	09:35	
Journey time	133 mins	125 mins	
Frequency	1/hr	2/hr	

37. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities
 38. Travers T, Gordon I & Whitebread C (2008) *London’s Place in the UK economy, 2008-09*. London: City of London Corporation
 39. NOMIS (2010), *Annual Business Inquiry, Workplace analysis*. 2008 data



“The improved service will allow integrated timetabling, supporting other nearby cities”

The planned investment in upgrading the Midland Main line track will lead to a journey time saving of eight minutes⁴⁰ between Sheffield and the Capital by 2013, and a doubling of service frequency on the route has recently been achieved.

The improved service will allow integrated timetabling, supporting other nearby cities. There will be improved connections for passengers from Barnsley and Rotherham travelling to London and better connectivity for passengers travelling between the international gateways of St Pancras and East Midlands Airport. The improved service from Sheffield will also stop at Chesterfield, Derby and Leicester, giving all these places improved access by rail to London.⁴¹

Over 415,000 journeys were made from Sheffield to London in 2009 and over 330,000 from London to Sheffield, a total of over 746,000 trips between the two cities.⁴² By 2025, this is expected to have risen to over 837,900 trips per year,⁴³ and the eight minute time saving will save a cumulative 1,360 years for passengers travelling from London to Sheffield and from Sheffield to London between 2010 and 2025. The value of these time savings reported in Table 2 would increase further if we included all of the other passengers who travel between other cities and towns along the line who will also benefit from the upgrade, for example, those travelling between Leicester and Derby.⁴⁴

Sheffield / London

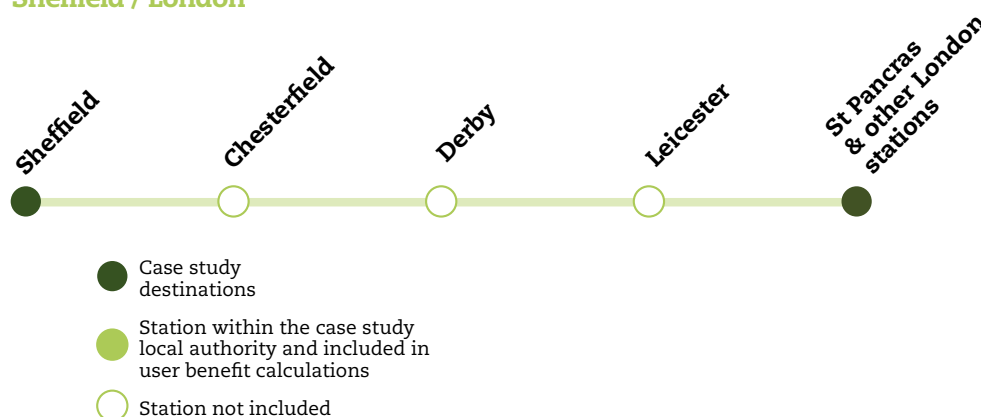


Table 2: Time savings

User benefits: Time Savings for passengers travelling between London & Sheffield

	Aggregate trips (000s)	Aggregate time savings (yrs)	Aggregate time savings (£m, 2010 prices)
After 15 years (2025)	12,700	1,360	14.46
After 30 years (2040)	26,000	2,780	25.88
After 60 years (2070)	57,400	6,140	41.52

Sources: Own calculations based on www.dft.gov.uk. Data from ATOC (2010), Ticket sales data, 2002-2009 financial years.

40. This is based on the comparison of journey times along the line with new journey times forecasts from ATOC. Journey time figures from February 2010.

41. Memorandum submitted by Nottinghamshire County Council (EM02-06). Available from: www.parliament.the-stationery-office.co.uk/pa/cm200910/cmselect/cmeastmid/104/104we08.htm#note25

42. ATOC (2010) Ticket sales data, 2009 data (financial year)

43. Forecast based on patronage growth at a quarter of the 2002-2009 patronage growth. This is a careful estimate taking into account capacity constraints, the state of the economy and the fact that 2002-2009 was part of the 'golden decade of the railway', a time of exceptional growth of rail travel.

44. Please also note that the value of time savings in Table 2 does by its very nature not include a monetary evaluation of the other use benefits of the scheme, such as a doubling of service frequency on the route.



Agglomeration benefits

In Sheffield and its hinterland, over 375,000 people could benefit from higher wages as a result of better rail transport infrastructure. Out of this pool of potential beneficiaries a high proportion is likely to benefit from the Midland Main line upgrade. This is because a large percentage of businesses in Sheffield and its hinterland are likely to benefit from the scheme, resulting in higher wages for Sheffield employees.

Table 3: Potential beneficiaries from agglomeration in Sheffield

Agglomeration: People and businesses benefitting from rail improvements in general

People who could experience wage benefits working in:

	Medium skill occupations	Higher skill occupations
Sheffield	155,500	60,700
Hinterland	119,000	40,400
Total	274,500	101,100

Businesses with potential productivity benefits:

	Number	Percent
Sheffield	12,400	72.4
Hinterland	8,700	74.1
Total	21,100	73.1

Sources: Own calculations based on Graham (2006) and Northern Way (2010). Data from NOMIS (2010), Annual Population Survey, July 2008-June 2009 data; NOMIS (2010) Annual Business Inquiry, workplace analysis, 2008 data. Hinterland calculated based on expected journey time decrease of scheme.

Note: This table includes Sheffield businesses and people only, as the percentage of people and businesses in London benefitting from better links with Sheffield are likely to be relatively small.

In Sheffield and its hinterland, over 73 percent of businesses could derive productivity benefits from improved rail transport – again a high proportion out of this potential pool of beneficiaries will benefit from the improvements to the Midland Main line. Sheffield businesses will benefit, in particular, from better access to the London market and its international links while still being able to take advantage of lower costs from being based in Sheffield.

Based on analysis of sectors that are best-placed to derive agglomeration and productivity benefits from improved transport infrastructure, we can identify business consultancy and media services firms as businesses in Sheffield that might see real advantages from a faster, more frequent train service to London.

Linking Sheffield with London

Sheffield has identified the creative and digital sector as a priority growth area for the city's economy, supporting the city's transition from its manufacturing heritage to the new, service-based economy.⁴⁵

Quba is a website and online strategy firm based in Sheffield, with clients that include Channel 4 and the BBC. Their senior team members travel down to London to pitch to new clients about once a month and usually travel by train. Referring to the planned upgrade on the Midland Main line,

45. Creative Sheffield (2007) Sheffield Economic Masterplan

“In Sheffield and its hinterland, over 375,000 people could benefit from higher wages from better rail transport infrastructure”



“Manchester is the driving force behind the North West economy”

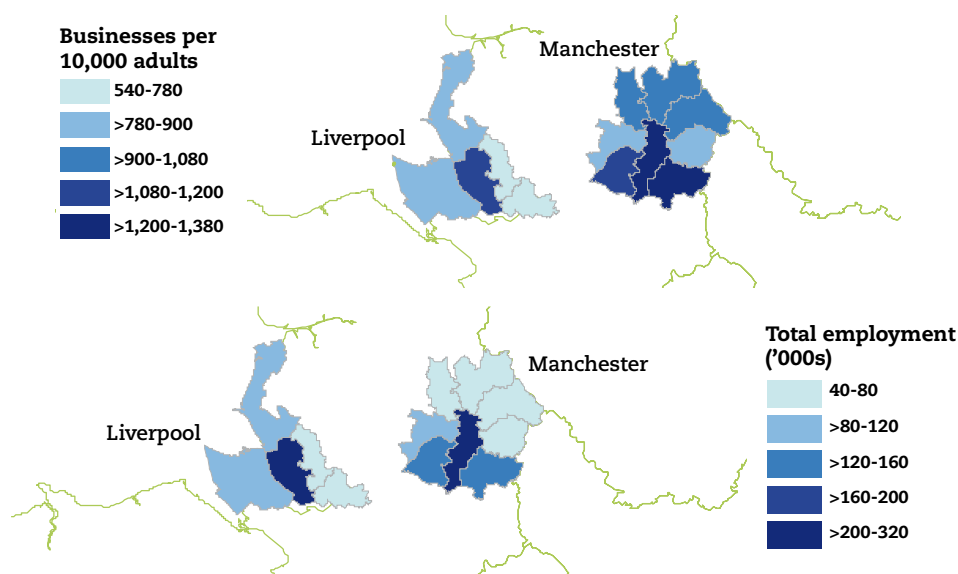
John Eaton, a New Business Account Executive at Quba, says that better access to London would mean they could potentially work with a much larger range of businesses:

“The current rail service to London takes too long. It makes it hard for us to get smaller clients from London because we can’t afford to spend a lot of time travelling. Although given the nature of our business we do have a good opportunity to build reputations online, we still need face time with clients and better access to London would allow us to provide our services to a wider range of businesses, especially smaller ones.”⁴⁶

Manchester & Liverpool – connecting core cities of the North

	Manchester (LA)	Liverpool (LA)
Population (2008)	464,300	434,900
Median resident weekly earnings (2009)	£448	£452
Median workplace weekly earnings (2009)	£514	£485
Residents employed in knowledge jobs (2009)	50.2%	40.2%

Figure 5: Business density & employment in Manchester & Liverpool & their hinterlands



Source: Gavurin (2010) 2008 data

Manchester is the driving force behind the North West economy. Its transformation from its industrial past gained real momentum in the 1980s and 1990s, and continued with the success of the Commonwealth Games in 2002. Manchester has proactively promoted itself as a business friendly city, with success, as can be seen by a recent report citing Manchester as the third best city in the UK to do business in.⁴⁷

Manchester represents an important centre of employment for neighbouring areas and, after London and Bristol, ranked third for its increase in private sector jobs between 1998 and 2008.⁴⁸ As Figure 5 highlights, more businesses and employment is concentrated in Manchester’s South than North.

46. Telephone interview with John Eaton, New Business Account Executive, Quba

47. Cushman & Wakefield (2009) European Cities Monitor. Available from: www.europeancitiesmonitor.eu/

48. Webber C & Swinney P (2010) Private sector cities: a new geography of opportunity. London: Centre for Cities



“Better links
between
Manchester and
Liverpool will
benefit the cities’
populations and
their economic
hinterlands”

Liverpool was one of the most important mercantile cities in the UK providing a strategic gateway for trade and investment. As Britain’s economy has changed, Liverpool has had to find new industries to replace those of its industrial past. Liverpool had success with this and created almost 14,000 more private sector jobs for its residents over the last decade.⁴⁹ In recent years, it has emerged as an important tourist destination, being named the European Capital of Culture in 2008. Liverpool has also seen significant inward investment such as the £900m Liverpool One scheme.

Manchester and Liverpool have a combined population of 2.5 million.⁵⁰ Fifty-five kilometres apart, the two cities are connected by several rail links and the M62 motorway. Better links between Manchester and Liverpool will benefit the cities’ populations and their economic hinterlands. They will make it easier for firms to collaborate and give Manchester businesses access to a wider consumer market. They will also enable Liverpoolians to access jobs in Manchester, which has created almost three times as many private sector jobs over the past decade as Liverpool,⁵¹ and the wider North West.

User benefits

Manchester to Liverpool

	Before	After	Saving:
Depart	08:15	08:15	13 mins
Arrive	08:58	08:45	
Journey time	43 mins	30 mins	

In 2009, almost one million journeys were made between Manchester and Liverpool, with more people travelling from Liverpool to Manchester. The railway line between the two cities is already running at over-capacity and has long been identified as needing investment. In 2005, it was estimated that of the approximately 15,000 people who travel between the cities at peak hour, 2,300 stand and 900 are in excess of the total capacity of the trains concerned.⁵² The number of trips between the two cities has grown at seven percent per annum between 2002 and 2009 with growth likely to continue in future.⁵³ Alternative road routes are also heavily congested.

The improvements programme on this line will address these bottlenecks by enabling some services to be lengthened by between two and six carriages, reducing overcrowding and making the service more reliable. Electrification of the line will deliver environmental benefits from reduced carbon emissions and will also reduce the operating cost of the service. Electrification is also expected to result in a journey time saving of 13 minutes, reducing times for passengers travelling between Manchester and Liverpool by 30 percent.⁵⁴ This will make rail travel between the two cities fifteen minutes quicker than going by car, and so a more attractive alternative option, particularly for the over 70 percent of commuters that commute by car between the two cities.

49. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities
50. This refers to the two cities Primary Urban Areas. Note that this differs from the population data in the data box above which refers to individual Local Authorities only.
51. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities
52. Network Rail (2007) *North West Route Utilisation Strategy*. Available from: www.networkrail.co.uk/asp/4449.aspx
53. ATOC (2010) *Ticket sales data, 2009 data (financial year)*
54. This is based on the comparison of journey times along the line with new journey times forecasts from ATOC. Journey time figures from February 2010.



“This 13 minute time saving accrues to a cumulative time saving of 3,290 years, with an estimated value of £21.47 million”

It also means that those living in Sefton and Knowsley, within the Liverpool City Region, will now be within a 43 minute commute of Manchester – a more attractive distance to travel to work.⁵⁵ These improvements to the line are due to be completed by 2013.

Our analysis shows that by 2025 over 1.3 million trips will be made between Manchester and Liverpool⁵⁶. We estimate that for the number of trips made up to 2025, this 13 minute time saving accrues to a cumulative time saving of 3,290 years, with an estimated value of £21.47 million in today's prices. Looking over thirty years ahead to 2040, this increases to a cumulative time saving worth just over £41.60 million in today's prices (see Table 4 below).

It should be noted that this calculation refers to time savings only, i.e. excluding the monetary value of train lengthening or of the environmental benefits of the scheme; and is only for passengers travelling from Manchester to Liverpool and from Liverpool to Manchester. Clearly the benefits accruing from time savings to those travelling along all the stations on the line, for example between Newton-le-Willows and Liverpool, will be far greater still.



Table 4: Time savings

User benefits: Time Savings for passengers travelling between Liverpool and Manchester

	Aggregate trips (000s)	Aggregate time savings (yrs)	Aggregate time savings (£m, 2010 prices)
After 15 years (2025)	19,000	3,290	21.47
After 30 years (2040)	43,000	7,470	41.60
After 60 years (2070)	118,600	20,590	77.60

Sources: Own calculations based on www.dft.gov.uk. Data from ATOC (2010), Ticket sales data, 2002-2009 financial years.

Agglomeration benefits

As set out in Table 5, there are over 1.2 million people in Manchester and Liverpool that could benefit from improved rail transport infrastructure. A large percentage of this pool of potential beneficiaries is likely to benefit from the case study improvements. Nearly one million of the 1.2 million are people employed in medium skill level occupations, including professions such as nursing, skilled trades or administrative jobs. In Liverpool, 67 percent of the population are employed in this middle skills group, in Manchester it is around 64 percent. In Manchester a high percentage within this group is employed in administration, personal care and sales.

55. Green AE & Owen D (2008) *The geography of poor skills and access to work*. Joseph Rowntree Foundation
 56. Forecast based on patronage growth at a quarter of the 2002-2009 patronage growth.



“In Manchester and Liverpool and their hinterlands, 73.4 percent of businesses could potentially benefit from improved rail transport infrastructure”

In Manchester and Liverpool and their hinterlands, 73.4 percent of businesses could potentially benefit from improved rail transport infrastructure, perhaps benefiting from access to a deeper pool of labour with the right skill levels or a wider range of suppliers. We would expect a large percentage of these 83,000 businesses to benefit from the improvements between Manchester and Liverpool.

Table 5: Potential beneficiaries from agglomeration in Manchester & Liverpool
Agglomeration: People and businesses benefitting from rail improvements in general

People who could experience wage benefits working in:

	Medium skill occupations	Higher skill occupations
Manchester	126,400	45,000
Liverpool	117,700	35,500
Hinterland	682,100	255,700
Total	926,200	336,200

Businesses with potential productivity benefits:

	Number	Percent
Manchester	12,800	71.7
Liverpool	10,400	73.9
Hinterland	59,800	73.7
Total	21,100	73.4

Sources: Own calculations based on Graham (2006) and Northern Way (2010). Data from NOMIS (2010), Annual Population Survey, July 2008-June 2009 data; NOMIS (2010) Annual Business Inquiry, workplace analysis, 2008 data. Hinterland calculated based on expected journey time decrease of scheme.

One of the sectors well placed to benefit from increased productivity is transport services. Quicker railway links between Manchester and Liverpool will give Manchester airport access to a larger catchment area and they will also strengthen the cluster of firms around Liverpool’s SuperPort.

Strengthening complementarities between Manchester and Liverpool

The Mersey Partnership is the economic development body for the Liverpool City Region, representing over 500 businesses across the city region including manufacturing and trading companies, six local authorities, government agencies, universities, media organisations, professional agencies, tourism and conference businesses. Mark Butchard, Strategic Development Manager at the Mersey Partnership, says:

“Each city offers a unique contribution to the prosperity of the North, Liverpool as a major SuperPort and as a world class tourism offering, Manchester with an established hub for professional services, the new Mediacity and a flourishing international airport. Transport linkages (and in particular fast sustainable rail connections) are essential if the two cities are to continue to complement each other in driving economic regeneration. Efficient transport connections will ensure that these two primary North West cities combined have the highly skilled workforce essential in raising productivity and providing capacity for the movement of freight not only within the North but across the UK into Europe.”⁵⁷

57. Quote from Mark Butchard, Strategic Development Manager, Mersey Partnership

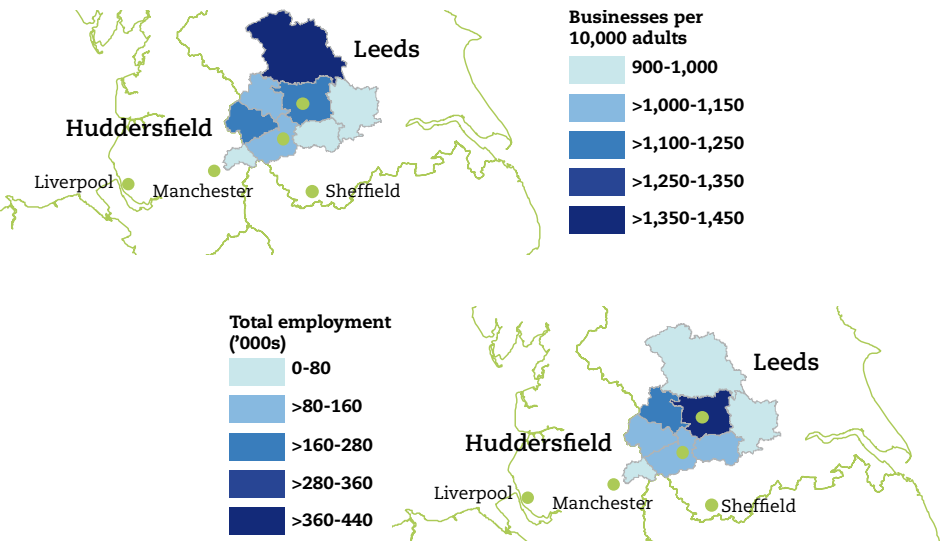


“Leeds is an important retail and further education centre for the wider region”

Huddersfield & Leeds – access to job opportunities in Leeds

	Huddersfield (Kirklees LA)	Leeds (LA)
Population (2008)	403,900	770,800
Median resident weekly earnings (2009)	£455	£465
Median workplace weekly earnings (2009)	£423	£479
Residents employed in knowledge jobs (2009)	42.7%	42.3%

Figure 6: Business density & employment in Huddersfield & Leeds & their hinterlands



Source: Gavurin (2010) 2008 data

Leeds is one of the North of England’s major cities, the economic centre of West Yorkshire and one of the most significant business, legal and financial centres outside of London. Leeds is an important retail and further education centre for the wider region and it is also an important source of skilled employment for neighbouring cities and towns, like Huddersfield, which is the principal market town within the predominantly rural Kirklees Local Authority district. Over the past decade Leeds has added over 25,000 private sector jobs to its employment base making it the fourth best performing English city with regards to the creation of private sector jobs.⁵⁸

Huddersfield has grown significantly from its mill town routes, but its economy is still more reliant on manufacturing than the rest of the UK.⁵⁹ This includes some successful businesses that have adapted to succeed in the global economy, like Cummins, a manufacturer of turbochargers that is headquartered in Huddersfield, but is a global company, with offices worldwide. While Leeds has been adding private sector jobs over the past decade, Huddersfield lost over 2,000 private sector jobs.⁶⁰

Huddersfield and Leeds are only 32.5 kilometres apart and travel between the two takes approximately 27 minutes by car or on average 24 minutes by train. There has been significant growth in rail commuting with the number of

58. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities
59. Kirklees Council (2002) *Kirklees council vision (2012). A Blueprint for our future*. Available from: www.kirklees.gov.uk/publications/visionstrategy/Vision.pdf
60. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities



season tickets purchased growing by 54 percent between 2002 and 2009⁶¹. For Huddersfield residents, commuting to Leeds is a good thing as it gives them access to private sector jobs. However, as the number of people who commute daily to Leeds increases, commuters are faced with growing congestion and overcrowded trains, especially at morning and evening peak hours. The fact that Huddersfield is now the second busiest station in Yorkshire further illustrates these pressures.

User benefits

Huddersfield to Leeds

	Before	After	Extra seats per hour: 660
Depart	08:30	08:30	
Arrive	08:54	08:52	
Journey time	24 mins	22 mins	
Frequency	4/hr	5/hr	

**“Seats per hour
will increase from
440 to 1,100, more
than doubling the
existing capacity”**

The planned improvements to the Liverpool to Leeds line will help make this congestion more bearable by reducing journey times between Huddersfield and Leeds by 10 percent of the current journey time.⁶² More importantly trains between Leeds and Manchester will be lengthened from two to four carriages and one extra train per hour will be made available.⁶³ This means available seats per hour will increase from 440 to 1,100, more than doubling the existing capacity.

This will benefit the 11 percent of residents in the Kirkless Local Authority area that commute to work in Leeds on a daily basis, providing them with an easier and more pleasant journey on less crowded trains.⁶⁴ Better links to the regional city will help even more residents in Huddersfield access higher value employment opportunities, especially in service and knowledge industries.

We estimate that the time saving of these current and future passengers⁶⁵ will amount to an aggregate of £11.56m over 60 years. This means that the time saving benefits of passengers on the Huddersfield to Leeds stretch, which represents roughly a third of the total Liverpool to Leeds line, will pay for more than a third of the total cost of the upgrade of the railway line between Leeds and Liverpool over 60 years – the time frame DfT uses to assess the viability of transport projects.⁶⁶

This suggests that the time saving element of the improvements along the Liverpool to Leeds line alone pays for the cost of the scheme. Given that this excludes the monetary value of other benefits of the scheme, such as benefits from train lengthening, increased frequencies and wider economic benefits, it strongly suggests this scheme is well worth its money.

61. www.nationalrail.co.uk, www.theaa.com/route-planner and ATOC (2010), Ticket sales data, 2002-2009 data (financial years)

62. This is based on the comparison of journey times along the line with new journey times forecasts from ATOC. Journey time figures from February 2010.

63. For the above see: Network Rail (2009) Yorkshire and Humber Route Utilisation Survey. Available from: www.networkrail.co.uk/asp/4449.aspx

64. Annual Business Inquiry, 2004 data

65. Forecast based on patronage growth at a quarter of the 2002-2009 patronage growth.

66. Note that the stretch between Huddersfield and Leeds represents approximately 28 percent of the rail stretch between Liverpool and Leeds.



Huddersfield / Leeds

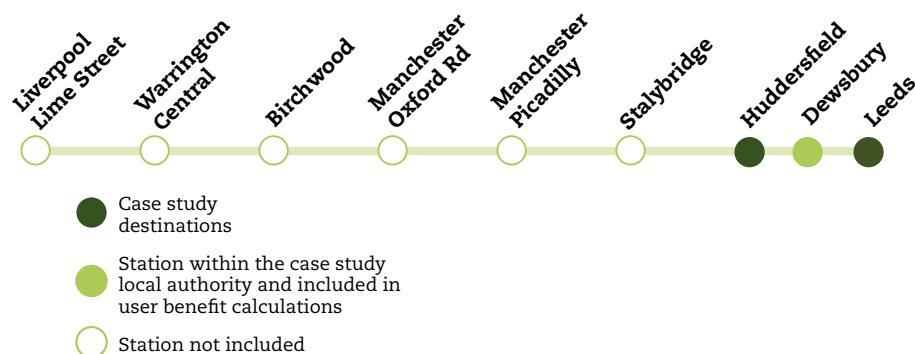


Table 6: Time savings

User benefits: Time Savings for passengers travelling between Huddersfield & Leeds

	Aggregate trips (000s)	Aggregate time savings (yrs)	Aggregate time savings (£m, 2010 prices)
After 15 years (2025)	19,800	530	3.13
After 30 years (2040)	44,100	1,180	6.25
After 60 years (2070)	116,400	3,110	11.56

Sources: Own calculations based on www.dft.gov.uk. Data from ATOC (2010), Ticket sales data, 2002-2009 financial years.

Agglomeration benefits

As shown in Table 7, over 630,000 people in Leeds and Huddersfield could derive indirect wage benefits from rail transport improvements around the country, with over 70 percent of these being medium-skilled people. Overall, over 85 percent of Leeds employees are employed in professions that could benefit from rail improvements, in Kirklees it is almost 90 percent. We would expect a large percentage of people from this potential pool of beneficiaries to benefit from the planned improvements between Huddersfield and Leeds.

Table 7: Potential beneficiaries from agglomeration in Huddersfield & Leeds

Agglomeration: People and businesses benefitting from rail improvements in general

People who could experience wage benefits working in:

	Medium skill occupations	Higher skill occupations
Huddersfield (Kirklees)	117,200	50,400
Leeds	223,100	93,800
Hinterland	105,000	41,200
Total	445,300	185,400

Businesses with potential productivity benefits:

	Number	Percent
Huddersfield (Kirklees)	10,300	73.5
Leeds	20,100	73.2
Hinterland	9,600	73.2
Total	40,000	73.3

Sources: Own calculations based on Graham (2006) and Northern Way (2010). Data from NOMIS (2010), Annual Population Survey, July 2008-June 2009 data; NOMIS (2010) Annual Business Inquiry, workplace analysis, 2008 data. Hinterland calculated based on expected journey time decrease of scheme.

“Over 85 percent of Leeds employees are employed in professions that could benefit from rail improvements, in Kirklees it is almost 90 percent”



“Huddersfield’s excellent connection with Leeds gives the company access to the large pool of financial services professionals throughout the Leeds City Region”

Over 73 percent of businesses in Huddersfield and Leeds could derive indirect productivity benefits from better rail transport infrastructure, many of whom are likely to benefit from the specific improvements between Huddersfield and Leeds. Some sectors are more likely to benefit than others, including financial and business services, where access to networks and pools of skilled labour are increasingly important. Finance and insurance is a large employer in Leeds, employing almost eight percent of total employees in 2008, but it is still a relatively small employer in the Kirklees Local Authority area, which includes the town of Huddersfield.

Access to skilled financial services employees

One company working within the financial services sector in Huddersfield is Simply Biz, a company providing support and compliance services to independent financial advisers across the UK.

Ken Davy, chairman of Simply Biz, says the improvements on the rail link to Leeds are important to the company because Simply Biz does a lot of business with Edinburgh and London. Most of the company’s staff is based throughout Yorkshire and many of them travel into work on the Leeds-Huddersfield link. Huddersfield’s excellent connection with Leeds gives the company access to the large pool of financial services professionals throughout the Leeds City Region.⁶⁷

London & Solihull – linking to growth in the Capital

	London (GOR)	Solihull (LA)
Population (2008)	7,619,800	205,500
Median resident weekly earnings (2009)	£599	£518
Median workplace weekly earnings (2009)	£627	£511
Residents employed in knowledge jobs (2009)	54.3%	50.3%

Solihull is one of the most affluent towns in the West Midlands⁶⁸ and is part of the Birmingham City Region economy. It is only 14 kilometres from the centre of Birmingham, with Birmingham International Airport, a major transport hub, located in between the two areas. Birmingham is a major centre of employment for Solihull’s residents. Thirty-six percent of the Solihull workforce commuted to Birmingham in 2004, compared to the 48 percent that work in Solihull itself.⁶⁹

Solihull has a relatively low business density (see Figure 7), but the town’s sectoral strengths are in ICT, business and professional services, business tourism, and transport technologies linked to the Coventry, Solihull and Warwickshire high technology corridor.⁷⁰ In addition, Solihull benefits from certain key economic assets. For instance, Solihull is home to the National Exhibition Centre (NEC), drawing people from across the country to exhibitions such as the National Graduate Recruitment Exhibition, engineering trade shows and Grand Designs Live.

67. Telephone interview with Ken Davy, Chairman, Simply Biz

68. Solihull’s average weekly earnings are over £30 above the national average. Source: NOMIS (2010), Annual Survey of Hours and Earnings, workplace and resident analysis, 2009 data

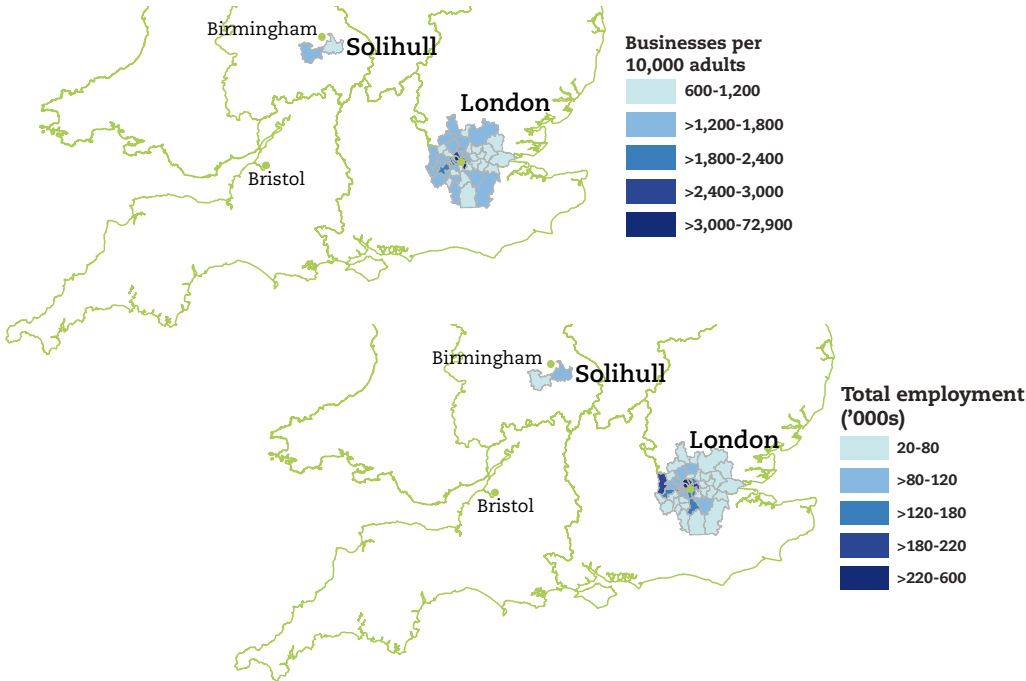
69. Annual Population Survey, 2004 data

70. Solihull for Success and The Solihull Partnership (2007) An Economic Development Strategy for Solihull 2008-2011. Available from: www.solihull.gov.uk/Attachments/EconDevStrategy1_Layout1.pdf



“Birmingham is
a major centre
of employment
for Solihull’s
residents”

Figure 7: Business density & employment in London & Solihull & their hinterlands



Source: Gavurin (2010) 2008 data

Solihull has relatively good links to Birmingham, but its links to London could be better. Current travel times by train into London Marylebone take at least two hours, a time similar to travelling North into Birmingham first, then walking from Moor Street to New Street station and taking the West Coast main Line into London Euston.

User Benefits

Solihull to London			
	Before	After	Saving:
Depart	09:00	09:00	24 mins
Arrive	11:02	10:38	
Journey time	122 mins	98 mins	

The planned linespeed improvements on the Chiltern line will cut the travel time between Solihull and London Marylebone by 24 minutes (20 percent).⁷¹ It is also planned to make improvements to provide passengers with better quality carriages and stations, benefiting the over 240,000 people who journeyed between London and Solihull in 2009. These linespeed improvements will make travelling to London from Solihull by train 45 minutes quicker than by car.

The improvements will make it easier to get to businesses located to the south and west of Birmingham from London than it is today. The improvements will also make it easier and more comfortable for Solihull residents to access the amenities of London’s west end. In addition, Solihull will have the potential to become more of a transport hub in its own right for its immediate surrounding area, instead of journeys being diverted through Birmingham.

71. This is based on the comparison of journey times along the line with new journey times forecasts from ATOC. Journey time figures from February 2010.



For example, neighbouring Bromsgrove does not currently have its own direct rail link to London and so its residents and businesses will also benefit from investment in an improved link from Solihull.

Solihull / London



Table 8: Time savings

User benefits: Time Savings for passengers travelling between Solihull & London

	Aggregate trips (000s)	Aggregate time savings (yrs)	Aggregate time savings (£m, 2010 prices)
After 15 years (2025)	4,500	1,440	10.92
After 30 years (2040)	10,000	3,210	19.38
After 60 years (2070)	26,500	8,490	33.79

Sources: Own calculations based on www.dft.gov.uk. Data from ATOC (2010), Ticket sales data, 2002-2009 financial years. Note: Monetary value refers to time savings for trips made between Solihull and London only and naturally excludes the monetary value of other benefits to of the scheme to passengers, such as better quality carriages.

Agglomeration benefits

As shown in Table 9, over 120,000 people in Solihull and its hinterland could derive indirect wage benefits from rail transport improvements in general, with almost 65 percent of these being medium-skilled. A large percentage out of this pool of potential beneficiaries is likely to benefit from our specific rail project, the improvements on the Chiltern line. Overall, around 89 percent of Solihull employees are employed in professions that could potentially benefit from the rail improvements. In particular, these are administrative occupations, business and public service associated professionals and sales occupations.⁷²

In addition to quicker journeys, closer links to the Capital's economy will expose businesses in Solihull to more competition and to a wider range of customers and suppliers. This should lead to greater overall levels of productivity in the Solihull economy. We have calculated that around 74 percent of Solihull's businesses could potentially see such productivity benefits from rail improvements in general, with a large percentage of these likely to benefit from the improvements to the London to Solihull line.

72. NOMIS 2010, Annual Population Survey, July 2008-June 2009 data

“Closer links to the Capital's economy will expose businesses in Solihull to more competition and to a wider range of customers and suppliers”



Table 9: Potential beneficiaries from agglomeration in Solihull

Agglomeration: People and businesses benefitting from rail improvements in general

People who could experience wage benefits working in:

	Medium skill occupations	Higher skill occupations
Solihull	50,300	30,900
Hinterland	27,500	11,800
Total	77,800	42,700

Businesses with potential productivity benefits:

	Number	Percent
Solihull	6,100	74.1
Hinterland	3,300	72.5
Total	9,400	73.5

Sources: Own calculations based on Graham (2006) and Northern Way (2010). Data from NOMIS (2010), Annual Population Survey, July 2008-June 2009 data; NOMIS (2010) Annual Business Inquiry, workplace analysis, 2008 data. Hinterland calculated based on expected journey time decrease of scheme. Note: This table includes Solihull businesses and people only, as the percentage of people and businesses in London benefitting from better links with Solihull is likely to be relatively small.

Getting there and away

With the NEC and Birmingham International Airport both located within Solihull, business tourism is an important part of the area's economy. Sam Edmonds works in conferences at the Ramada, Birmingham (Solihull) located one mile from Solihull station. The hotel's conference space caters for up to 200 delegates and often attracts events of national interest. Transport connectivity often comes high on the priority list for conference organisers:

*"Clients always ask about transport links – it is an important consideration for them when they're thinking about booking the hotel for conferences or events. Improvements in journey times would have an impact on our business. Clients are always concerned about how long travel times will be."*⁷³

Bathgate & Glasgow – closing the gap

	Bathgate (West Lothian LA)	Glasgow (LA)
Population (2008)	169,500	584,200
Median resident weekly earnings (2009)	£425	£452
Median workplace weekly earnings (2009)	£431	£476
Residents employed in knowledge jobs (2009)	39.7%	42.0%

Bathgate, with just over 21,270 residents, is the second largest town in the predominantly rural Local Authority area of West Lothian.⁷⁴ There are plans for the town to grow rapidly over the next ten years. Glasgow and its surrounding metropolitan area account for 34 percent of Scotland's population and 35 percent of its jobs.⁷⁵ Glasgow is a major part of the Scottish economy with a high density of employment and businesses (see Figure 8).

73. Telephone interview with Sam Edwards, Conference Organiser, Ramada Birmingham/Solihull

74. See www.gro-scotland.gov.uk/statistics/

75. Metropolitan Glasgow (2003) Our vision for the Glasgow City Region 2008-2013. Available from: www.glasgow.gov.uk/en/Business/Businesssupport/Research_statistics/metropolitanvision.htm

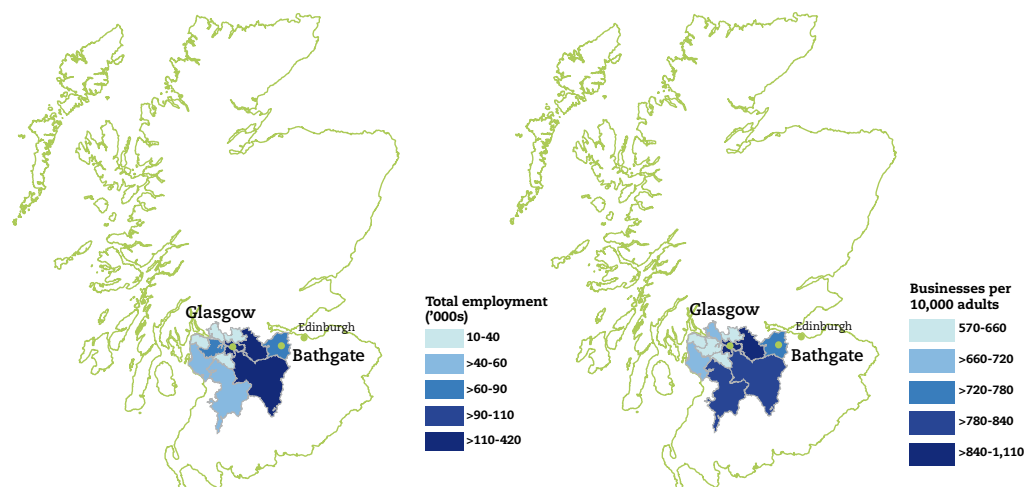
"Rail has the potential to unlock economic activity in our cities and towns"



“Bathgate and Glasgow are only 33 kilometres apart and links between the two areas have traditionally been strong”

Over the past decade Glasgow has added almost twice as many private sector jobs than Edinburgh.⁷⁶

Figure 8: Business density & employment in Bathgate & Glasgow & their hinterlands



Source: Gavurin (2010) 2008 data

Bathgate and Glasgow are only 33 kilometres apart and links between the two areas have traditionally been strong. In fact, many of the residents of Bathgate and neighbouring new towns, such as Livingston originally moved to the area from Glasgow.⁷⁷ However, since the rail link between Bathgate and Glasgow closed in 1956 links between the two areas have diminished and the reopening of the rail link between Bathgate and Edinburgh in 1986 has led to a reorientation of Bathgate residents towards the Edinburgh labour market.⁷⁸

Glasgow is currently over 100 minutes from Bathgate station by train with Bathgate residents having to travel to Glasgow via Edinburgh or Linlithgow. Alternatively, Bathgate residents can travel to Glasgow via other stations to the North or South of the town. For example they can drive to Livingston South station (20 minutes) and take the Shotts line into Glasgow (between 45-64 minutes) or they can drive to Linlithgow station (17 minutes) and take the Edinburgh/Glasgow line to Glasgow (33-37 minutes). The trip to Glasgow from Bathgate with the X14 bus takes 70 minutes,⁷⁹ while the car journey takes 37 minutes via the A8/M8, which is often heavily congested. The figure below sets out some of these options in comparison with the travel time on the new railway line.

Passenger benefits from the new line

Bathgate to Glasgow			
	By rail only	By bus only	Journey time via new rail link: 45 mins
Depart	08:00	08:00	
Arrive	09:47	09:10	
Journey time	107 mins	70 mins	
Changes	1	0	

76. Webber C & Swinney P (2010) *Private sector cities: a new geography of opportunity*. London: Centre for Cities

77. Telephone interview with Ben Condry, Passenger Demand Forecasting Manager, ATOC

78. Scottish Transport Studies Group (2005) *Scottish Transport Review Special*. Theme “Transport Tourism and Events”. Available from: www.stsg.org/str/str28.pdf

79. This refers to the 7.20am service, via Armadale Cross, Whitburn Cross, Hartshill Salsburgh, Newhouse Roundabout and Buchanan Bus Station. Later buses on the route take 55 minutes.



The Airdrie Bathgate investment project differs from the other case study projects which examine improvements to existing lines, not the construction of a new electrified railway. The new railway that is currently built between Drumgelloch and Bathgate will reinstate the direct rail link between Glasgow and Bathgate that was closed in 1956.

It therefore has real potential to strengthen the economic links between Bathgate and Glasgow again. It will give Bathgate residents better access to the Glasgow labour market, a labour market that much better matches the occupational structure of people living in Bathgate than Edinburgh. This is illustrated by the percentage of employees working in high skill occupations, which is 51 percent of residents in Edinburgh, but only 44.5 percent in Glasgow and 39 percent in West Lothian.⁸⁰

The new line will significantly reduce the time it takes to travel by rail between Bathgate and Glasgow. The new line will be 62 minutes quicker than the existing rail line which means travelling to Glasgow via Edinburgh or Linlithgow and it will also be quicker than driving to Livingston South or Linlithgow and taking the train from there.⁸¹ This decrease in rail journey times will make commuting by rail more attractive, giving commuters an alternative option to commuting on the congested A8/M8. It will give other Bathgate and West Lothian residents (especially those that do not own a car) the chance to take up jobs in Glasgow. It will also make access to stations to the East of Glasgow easier serving the Commonwealth games area.

In addition to better access to Glasgow, the reopened link will also provide more services, with four trains per hour in each direction between Glasgow and Edinburgh via Bathgate. This will take the pressure off the already congested M8 motorway, and lead to environmental benefits due to reduced carbon emission. Better park-and-ride facilities will add to this⁸² and there will also be three new stations, at Blackridge, Caldercruix and Armadale. The project also includes a doubling of frequency from Bathgate to Edinburgh, further strengthening the area's links with the Scottish Capital.

Assessing future flows on a railway line yet to be completed is extremely difficult. For this reason, we have based our estimates of time savings to users of the new line on two separate groups of data: 1) the currently relatively small number of journeys made between Bathgate and Glasgow (around 1,200 in 2009⁸³); and 2) the number of trips made to Glasgow from other stations in West Lothian that can be accessed by Bathgate residents. As in the other case studies these stations are highlighted in the figure in light green.

Based on the current journey trips between these stations and Glasgow and past patronage growth rates, we have estimated aggregate time savings for passengers could be 5,370 years in 2025, rising to 27,140 years over the 60 year time horizon to 2070.⁸⁴

80. NOMIS 2010, Annual Population Survey workplace analysis, Oct 2008-Sep 2009 data

81. This is based on the comparison of journey times along the line with new journey times forecasts from ATOC. Journey time figures from February 2010.

82. See: www.airdriebathgateraillink.co.uk/faq/#the-project/

83. Data from ATOC, Ticket Sales Database, 2008/09 financial year

84. Forecast again based on patronage growth at a quarter of the 2002-2009 patronage growth. Note that this is likely to slightly overestimate overall time savings, because it includes trips by non-Bathgate residents that live close to stations such as Addiewell or Kirknewton. However, because we do not estimate additional trips that will be created through the new railway line, our estimate should still be reasonable.

“This decrease
in rail journey
times will make
commuting by rail
more attractive”



“These firms can expect to see a boost to their productivity, with better access to the Glasgow market”

Bathgate / Glasgow

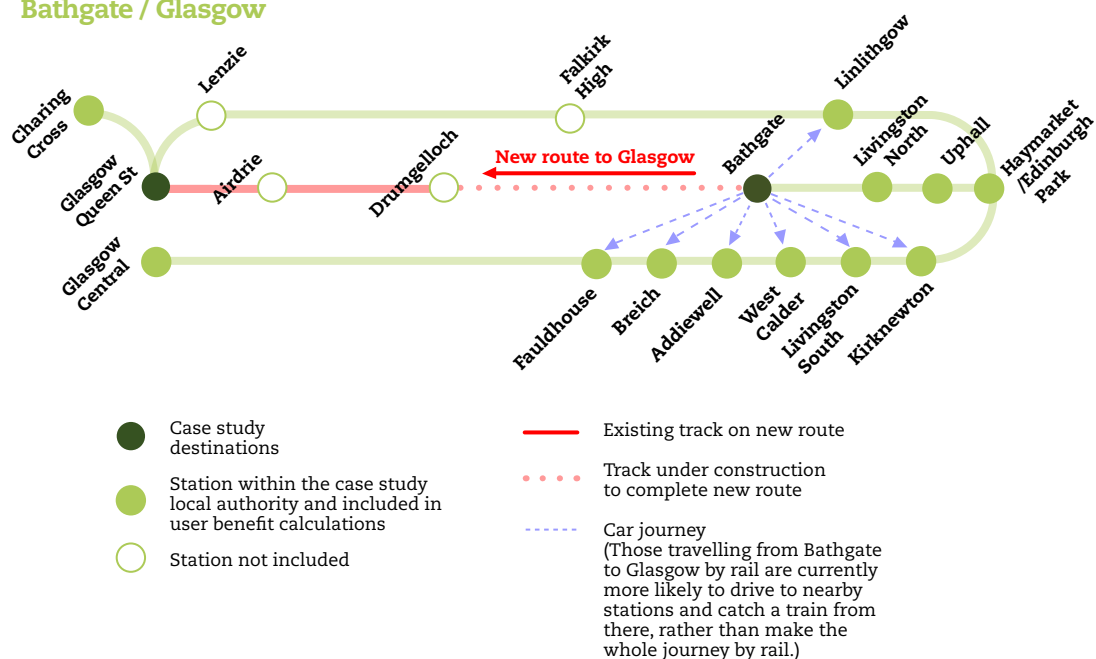


Table 10: Time savings

User benefits: Time Savings for passengers travelling between Bathgate & Glasgow

	Aggregate trips (000s)	Aggregate time savings (yrs)	Aggregate time savings (£m, 2010 prices)
After 15 years (2025)	6,500	5,370	45.15
After 30 years (2040)	13,800	11,390	74.89
After 60 years (2070)	32,800	27,140	119.69

Sources: Own calculations based on www.dft.gov.uk. Data from ATOC (2010), Ticket sales data, 2002-2009 financial years. Note: Monetary value refers to time savings for trips made between Bathgate and Glasgow only and naturally excludes the monetary value of other benefits to of the scheme to passengers, such as new stations.

Agglomeration benefits

We have calculated that about 75 percent of the businesses within West Lothian could benefit from productivity improvements through rail investment in general (see Table 11). A large percentage of these are likely to benefit from the better links to Glasgow that the new line and associated improvements will lead to.

Transport services, including logistics, is one of the sectors that benefits most from better transport infrastructure, and Bathgate is home to many logistics centres for companies like Aldi, Morrisons and Wincanton Logistics. These firms can expect to see a boost to their productivity, with better access to the Glasgow market and less congestion on the M8.

But the Airdrie to Bathgate project is mainly about people. Bathgate residents, who might struggle to find an appropriate job locally, will be able to access newly created private sector jobs in Glasgow. As shown in Table 11, we estimate that almost 900,000 people in West Lothian and Glasgow could derive indirect wage benefits from rail transport improvements in general.

Overall, out of this pool of potential beneficiaries there is likely to be a higher percentage of people benefitting in Bathgate than in Glasgow from the specific case



study improvement. This positive impact for residents in West Lothian is because access to Glasgow is more important for West Lothian than vice versa. Of those likely to benefit in West Lothian a high percentage are employed in administrative occupations, transport and mobile machine related occupations and personal care.

Table 11: Potential beneficiaries from agglomeration in Bathgate & Glasgow

Agglomeration: People and businesses benefitting from rail improvements in general

People who could experience wage benefits working in:

	Medium skill occupations	Higher skill occupations
Bathgate (West Lothian)	56,200	18,700
Glasgow	165,000	64,300
Hinterland	435,600	150,600
Total	656,800	233,600

Businesses with potential productivity benefits:

	Number	Percent
Bathgate (West Lothian)	3,600	75.1
Glasgow	15,600	75.2
Hinterland	29,600	73.1
Total	48,800	73.9

Sources: Own calculations based on Graham (2006) and Northern Way (2010). Data from NOMIS (2010), Annual Population Survey, July 2008-June 2009 data; NOMIS (2010) Annual Business Inquiry, workplace analysis, 2008 data. Hinterland calculated based on expected journey time decrease of scheme.

New opportunities in Glasgow

The Airdrie-Bathgate Rail Link project newsletter has reflected the positive views of local residents expecting to benefit from the reopened rail line. Those interviewed were looking forward to the opportunity to travel by train rather than along the congested M8 to Glasgow. As well as changing their commuting patterns, respondents spoke about the improvement in their quality of life as a result of being able to visit family in Glasgow more easily, as well as visiting the theatres, museums and galleries that the city has to offer:

“At the moment, it’s not very convenient for me to get to Glasgow, but when the new line opens, I’ll be able to hop on a train from Uphall Station and be in the centre of the city in 53 minutes. I’m a big fan of Runrig and also the Celtic Connections festival, meaning concerts in Glasgow will be easier to get to.”

“For me personally, it could change my commuting habits. When the new link opens, I hope to travel by rail more often. It’ll be great for the meetings I go to in Coatbridge and Glasgow. I can jump on the train without having to worry about parking when I get there.”

“Until five years ago I commuted daily from Bathgate to Glasgow by car. The Airdrie-Bathgate line would have been useful back then! I now travel to Edinburgh by train everyday and enjoy the quick, stress-free journeys. It will be exciting to go to Glasgow theatres or for shopping without wrestling with other drivers on the M8.”⁸⁵

85. See: www.airdriebathgaterailink.co.uk, Airdrie-Bathgate Rail Link project newsletters, Winter 2008 to Spring 2010

“Of those likely to benefit in West Lothian a high percentage are employed in administrative occupations, transport and mobile machine related occupations and personal care”



“Rail has the potential to unlock economic activity in our cities and towns”

Conclusion

The UK is slowly emerging from a deep recession. To sustain the fragile recovery, the coalition Government must prioritise the creation of private sector jobs. The main source of such economic growth will increasingly be industries and sectors that locate in cities and towns. Cities and their surrounding functional economic areas will therefore play a vital role in the economic recovery.

Transport is the glue that binds cities together. An efficient and reliable transport infrastructure plays an essential part in stimulating growth and jobs in cities and towns. The railway network plays a key part in this, facilitating economic interactions, allowing businesses to access wider labour and supplier markets and helping people to access jobs.

This report looked at a variety of benefits to people who travel between two cities and towns on different parts of the rail network in the UK. The report illustrates three important points:

- **People** can derive significant benefits from targeted investments in the rail network. Rail passengers can benefit through timing savings on their journey, allowing for a more productive use of their time. They will also benefit from increased frequencies and longer trains on overcrowded commuter routes.

Those people who live in cities and towns where rail investment is taking place will also gain from this investment by having the potential to access higher wages, with the largest potential beneficiaries being those who work in medium skill occupations such as nursing or administrative roles.

- **Businesses** can derive significant benefits from investments in the rail network. Better rail links help them become more productive through accessing a larger pool of labour and exposure to a higher level of competition. Business will also benefit from a wider choice of suppliers which can lead to potential cost savings.
- **For cities and towns**, rail investment means being better connected to one another and to wider economic areas. Rail investment can therefore play a role in strengthening economic linkages and activity in the UK. This will allow cities and towns to develop particular sectors in their economy that they have a competitive advantage in whilst complementing growth in surrounding cities.

Although there will be a severe reduction in Government spending, the Government will still have comparatively significant spending power. What the Government chooses to invest in will have an impact on cities and towns in the UK. Investment in rail infrastructure should be part of the Government's solution to economic growth. Such investment will help to underpin economic activity within and between our cities and towns. It will deliver real benefits in terms of supporting business interaction, connecting people to jobs, opening up new markets for companies, increasing competition and productivity, and widening the labour market.

July 2010

© Centre for Cities 2010

Centre for Cities is a registered charity (No 1119841) and a
company limited by guarantee registered in England (No 6215397)



Enterprise House
59 - 65 Upper Ground
London SE1 9PQ

t 020 7803 4300
www.centreforcities.org