

Thought
Leadership



UK Infrastructure: Unlocking UK Cities and Commercial Property

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Foreword



Sir Richard Leese
Leader of Manchester City Council

As this excellent report from Bilfinger GVA makes clear, the time has come to give our cities a greater say on what infrastructure is needed, how it is funded and when and how it will be delivered.

If we do this we can help rebalance our economy, solve the productivity puzzle and create thousands of jobs.

We estimate devolving more spending over infrastructure to places and putting in place the right financing mechanisms could help to add £66 billion to our economy – significantly narrowing the productivity gap between our cities and the UK average.

Transport is a classic example – our congested road network and painfully slow rail connections mean that commuting between big cities in the North of England is the exception rather than the rule.

Just 0.2% of commuters to Manchester come from Leeds, despite the cities being just 44 miles apart.

And as this report makes clear, it's not about all about roads and rail. We must not neglect digital infrastructure where we are already falling behind competing cities from across the globe.

It's time to really use our local knowledge and expertise. To let us all implement innovative funding mechanisms like tax incremental finance, business rate growth retention and local authority bonds.

Our cities all have a proud track record of working in partnership with partners across the private sector to deliver everything from office blocks to tram extensions.

But it's time to fully realise their potential and give cities a greater role in building the new hard and soft infrastructure our nation so badly needs.

Introduction

In the age of globalisation, greater connectivity and digitalisation, infrastructure is more important than ever as a driver of economic growth.

The quality and availability of infrastructure helps to determine the pace, scale and scope of industrial and economic activity that takes place in our cities, but while spending in the UK has increased, much of it has been focused in a few key markets at the expense of other locations.

The definition of what constitutes infrastructure can be split between hard and soft. Hard infrastructure includes rail, road, air and sea ports, the telecoms and digital network, electricity generation, housing and sanitation.

Soft infrastructure focuses on providing the necessary education facilities, support for skills; healthcare and amenities that help provide services to ensure communities and businesses can function.

The lack of housing and the issues facing the energy network are major topics in their own right. Instead, the focus of this report will be on the key aspects of the hard infrastructure investment that will help increase productivity and enable the development of commercial property, namely road, rail, international connectivity and digital connectivity.

This report is set out in two parts. The first part will look at UK infrastructure, including how much is spent and where, what is driving the need for investment, and the major infrastructure projects currently being built or proposed.

The second part of the report will look at the role that infrastructure has to play in helping to rebalance the UK economy and support much needed gains in productivity within the core cities. London and the South East remain the focal point of transport spending in the UK and more spending needs to be directed at improving connectivity within the regions and the core cities.

The report will look at how delivery of infrastructure in the core cities can be improved, how it should be targeted to boost economic growth, and where current proposals fall short. The report also identifies the major infrastructure projects for each core city and the potential commercial property developments that could be unlocked by this investment, highlighted by **figure 13** on **page 24**.

For the purposes of this report, we refer to the 'core cities plus'. This constitutes the eight long-standing members of the core cities network that were part of the 2012 City Deal, plus Cardiff and Glasgow which joined the Core Cities UK in 2014. We also include Edinburgh, which although not a member of the core cities group, it is currently in the process of bidding for £1 billion of city deal funding.

The 'Core Cities plus' Group

Birmingham	Nottingham
Bristol	Sheffield
Leeds	Cardiff
Liverpool	Glasgow
Manchester	Edinburgh
Newcastle upon Tyne	

Infrastructure investment in the UK

The UK population is set to reach 71 million by 2031, compared to 64.6 million in 2014.

If the country is to meet its full economic potential in a sustainable and balanced way so that all regions benefit, it needs the necessary infrastructure to cope with this increased demand.

We have identified three major challenges for infrastructure in the UK:

- We need to improve delivery, especially for projects outside of London and the South East. Because of finite public investment, hard choices must always be made and as with the recent Heathrow decision, the economic case is most often a major determining factor.
- The overall level of investment lags behind that of our major global competitors, largely due to a combination of political interference, no clear long term vision, a lack of devolved power and limited local finance options that would enable cities and regions to determine their own infrastructure choices.
- The third challenge facing infrastructure in the UK is balancing competing investment needs. The current method does not account for the economic contribution or potential of the core cities.

Delivery

Since 2010, more than 60 major infrastructure projects have completed in the UK across a broad range of sectors: energy, sanitation, flood defences, rail, road and air. Based on 2013/14 prices, an average of £47 billion per annum was invested in infrastructure from 2010/11 to 2013/14, compared to £41 billion each year for 2005/6 to 2009/10 (HM Treasury).

In recent history, some notable high profile projects have been delayed or come in vastly over budget, leading to the impression that the UK is not very good at delivering major infrastructure projects, especially when compared to other countries.

Project	Initial cost	Delay	Overspend	% over budget
HS1	£5.2 billion	One year	£1 billion	18%
Jubilee Line extension	£2.1 billion	One year	£1.5 billion	67%
Scottish parliament building	£40 million	Three years	£374 million	935%
Edinburgh Tram	£375 million	Three years	£625 million	110%
Heathrow T5	£4.2 billion	On time	none	n/a
Heathrow T2	£2.5 billion	On time	none	n/a
Wembley Stadium	£640 million	One year	£517 million	81%
London Olympics	£2.4 billion	On time	£6.9 billion	288%
London Gateway Port	£1.5 billion	On time	none	n/a

Source: Bilfinger GVA

A recent example is the postponement of £38 billion of rail improvements, which were set to be the largest investment in the UK rail network since Victorian times. This included improvements to the Trans-Pennine network, dubbed the Northern Hub, and is therefore a major setback for the core cities in the north.

Of course, a project that is behind schedule or over budget can still ultimately be a success, just as much as one that is on time and on budget can be riddled with problems. For example, the new Terminal 5 building was one of the longest planning applications this country has witnessed, but was completed in 2008 on time and on budget.

However it opened at full capacity and a lack of testing meant that a catalogue of problems soon arose. As a result, the project was initially greeted with a great deal of scepticism. Lessons were learnt with the new Terminal 2 project which opened in 2013 at just 10% capacity, following a long period of stress testing.

The understanding of costs, schedules and the processes involved in delivering and project managing major infrastructure has increased significantly in the UK, and both the public and private sectors have had greater exposure and experience of managing these types of projects in recent years.

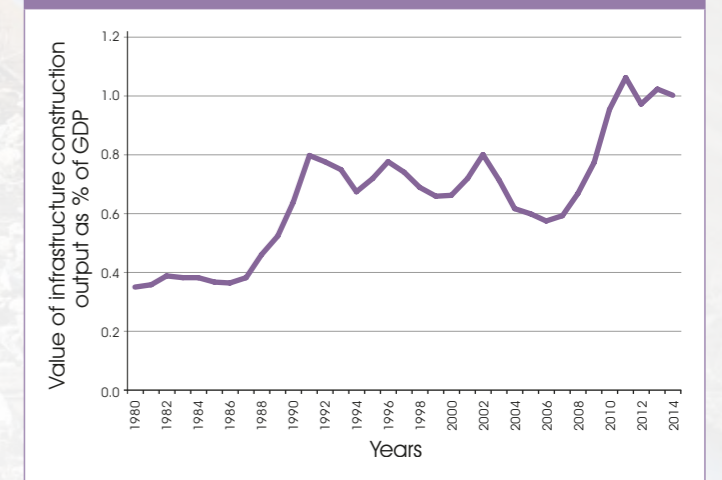
A 2008 study of public-private partnership infrastructure projects showed that only 28% of projects ran more than 5% over schedule, and just 30% were more than 5% over budget, based on the original estimates at the start of the project. That means that over 70% of projects were delivered on time and on budget.¹

The amount spent on total infrastructure (defined by ONS as water, sewage, rail, road, air, harbour, electricity, gas, air and communications) as a percentage of GDP has increased steadily since 1980, and even more so in the last decade. The value of construction output for infrastructure in the UK is £15.2 billion, equal to 1% of GDP (see figure 1).

¹ Infrastructure Australia, National Forum PPP benchmarking study, December 2008.

Maintaining this level of output at 1% of GDP over the next five years would help to stimulate economic growth as well as improve the quality of infrastructure. It is estimated that for every £1 billion spent on infrastructure, GDP is increased by £1.3 billion. Additionally, every 1,000 direct jobs created by the delivery of new infrastructure boosts wider employment by over 3,000 jobs (CEBR 2015).

Figure 1 - Infrastructure as a share of GDP



Source: ONS

So is the UK poor at delivering infrastructure? Recent history suggests that there have been clear successes, with examples of several projects delivered on time and on budget. Furthermore, some ambitious major projects currently under way, such as Crossrail, have so far avoided any significant setbacks.

International comparisons

In an international context, the UK is ranked 10th on the latest global competitiveness index for infrastructure quality (World Economic Forum 2014/15). This benchmarks the quality of transport, power and communications infrastructure (see figure 2).

A common mistake is to compare the much publicised level of infrastructure investment taking place in countries such as the UAE and China and think that in some way, the UK is behind the curve.² The top three ranked countries for infrastructure quality are all city states, with high levels of wealth per capita, sovereign investment funds and concentrated economic power.

China, despite being one of the fastest growing major economies, still only ranks 46th in terms of infrastructure quality, highlighting the scale of modernisation needed to meet the challenges of rapid urbanisation, and connecting an expanding middle class with domestic markets and the rest of the world.

A better comparison is to see how the UK compares alongside neighbouring European economies which are similar in size. Both Germany and France were amongst the best ranked nations for infrastructure in 2007/8, but the pressures of the Eurozone crisis on public spending have resulted in both countries falling to 7th and 8th place respectively.

Over the same period, the UK has increased its standing from 13th to 10th, helped by a strong economic outlook, an open business environment which encourages foreign direct investment (FDI) and a set framework of projects at a local, regional and national level.

When comparing the UK's infrastructure with other countries, the differing political landscapes also have a major role to play. A popular anecdote is that in the six years of debate over Heathrow's new runway, China has completed 44 new airports.

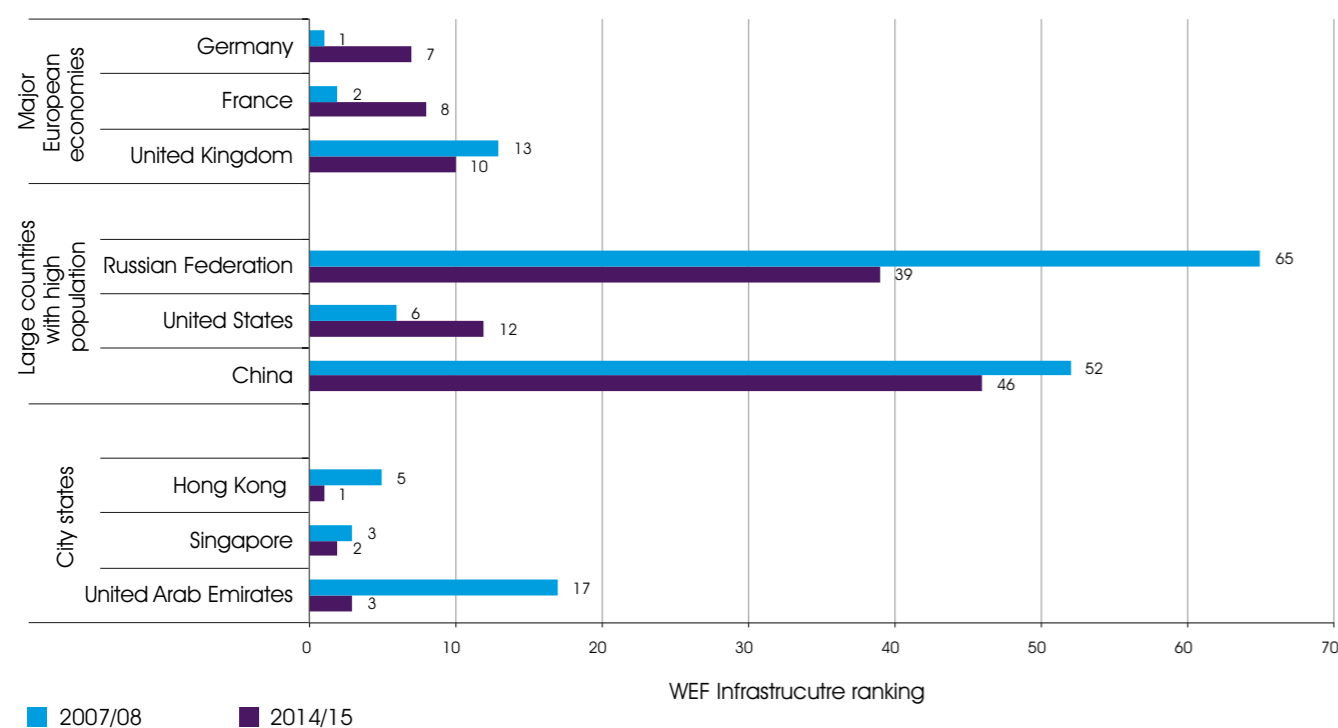
Addressing the issue of air capacity is of vital importance to the UK. The CBI, for example, estimates that a new runway could add an extra £150 billion to economic output.

Yet despite the 2008 Planning Act which enables the Secretary of State to directly approve nationally significant infrastructure projects, the process is still open to challenges and objections, environmental impact assessments and disputes over compulsory purchase. China meanwhile is embarking on its 11th five year plan aimed at boosting economic growth, at a cost of \$4.25 trillion.

A new runway at Heathrow is still not completely guaranteed, while before the 2015 election, there was still a degree of uncertainty over whether HS2 would actually go ahead, depending on which party gained a majority. The need for government, county councils and local authorities to keep an eye on electoral popularity and the voting cycle is just one of the challenges that infrastructure faces in the UK that may not be applicable in other countries and hampers its progression.

² The ability to accurately compare infrastructure spending as a share of GDP with other countries is limited due to varying definitions of what is included as infrastructure, incomplete datasets and a lack of data for key economies including the USA and China.

Figure 2 - Global infrastructure quality rankings



Source: WEF

UK infrastructure: regional spending

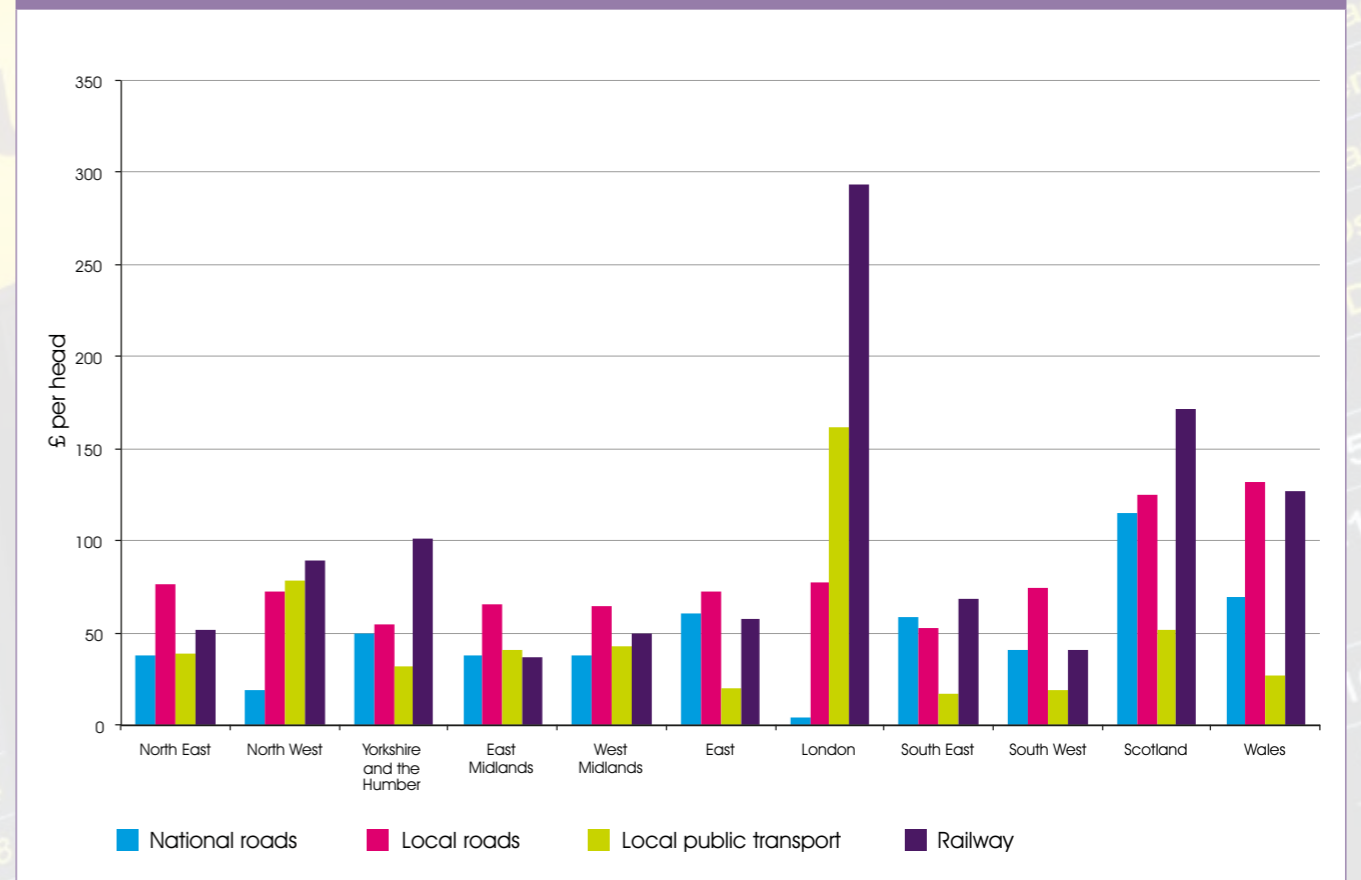
The third challenge facing infrastructure investment in the UK is balancing competing investment needs, and in particular achieving the optimum balance between London and the other regions.

London is the main beneficiary in terms of the amount of spending it receives for infrastructure compared to other regions. When looking solely at transport spending, London is the clear winner, accounting for 40% of UK local public transport spending and 37% of railway expenditure in 2012/13.

London received £545 per head in 2012/13 (see figure 3). Over 80% of this spending is on local public transport (£162 per head) and rail (£294 per head). The money spent on the capital is more than double that of any other English region, including the North West which receives the second most at £265 per head.

Scotland and Wales are also beneficiaries of higher transport spending than the UK average of £288 per head. Overall, Scotland received £539 per head in 2012/13, and Wales £365. Both countries have the highest spend on local and national roads, as well as the most spent on rail after London. However, much of this is due to the challenges faced with large rural and highland areas.

Figure 3 - Total identifiable spending on transport per capita (2012/13)



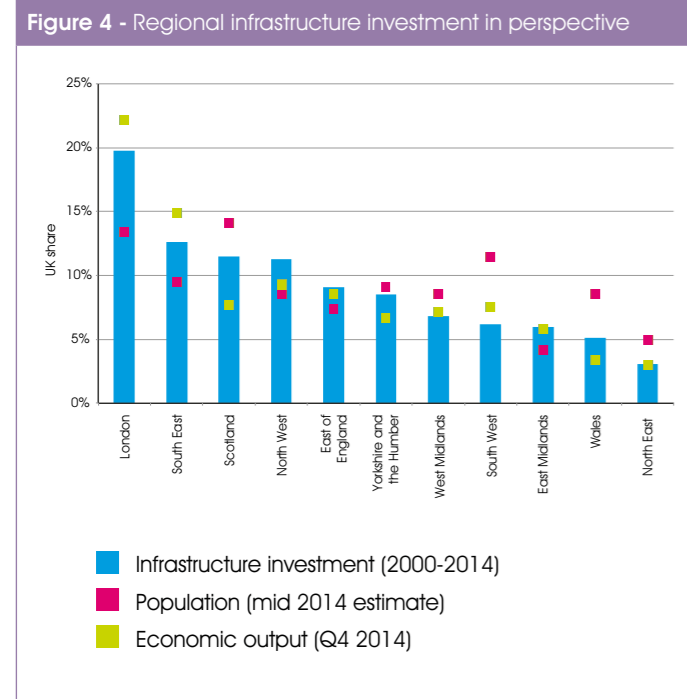
Source: ONS

Since 2000, London has accounted for 20% of UK spending on all types of infrastructure. This total figure includes a broad range of components such as flood defences, telecoms, sanitation and electricity provision, as well as the different forms of transport (see figure 4).

While that is greater in per capita terms than many other parts of the country (London's population is 13% of the UK total), it is broadly in line with London's proportion of UK output (22% of the total).

The issue with looking at spending from a share of GDP is that London's economy is the biggest driver for economic growth in the UK. Even though some of the regions have spending closely aligned with GDP share, current levels of economic output per capita are below the UK average.

Allocating infrastructure investment from this perspective creates a perpetual problem that could be holding infrastructure back, as does population share which fails to take into account commuting and where jobs are concentrated.



Source: ONS

This is the challenge that needs to be addressed. London is a leading global city which pulls in commuters from a broad number of destinations, not just within the South East. Just as many commuters make the journey from the core cities to London on a regular basis as travel between Sheffield and Leeds or Liverpool and Manchester.

Any reduction in spending on transport in the capital could damage London's ability to cope with increasing demand, with the capital's population set to increase by almost 20% in the next 15 years. Instead, increasing spending per head across each region needs to be the priority, using new financial mechanisms.

The core cities and local authorities are starting to receive more devolved powers and with the support of private finance, these powers can be used to improve infrastructure. There is evidence that devolving services by enabling governance across functioning economies could increase productivity by up to 3%.

Financing mechanisms such as tax increment financing (TIFs), Section 106 or CIL payments, business rate and stamp duty retention and the devolution of transport funding blocks should help attract private investment and give regional infrastructure spending the boost that it needs.

The £1 billion TIF to extend London's northern line by 3.2 km to Nine Elms and Battersea is a good example of this, using future business rate growth, S106 agreements and CIL payments to repay the government-backed loan. This provided the finance to pay for the new rail infrastructure that enabled the redevelopment potential of the area to be maximised.

Manchester has been granted 100% retention of growth in business rates as part of its latest devolution deal, building on the earn-back scheme, while there are several TIFs or variants in Bristol, Newcastle, Nottingham and Sheffield.

In addition to this, there are 15 enterprise zones across the country which enable local authorities to keep all new business rates. Although these can effectively act like TIFs, permission from the Treasury must still be sought to enact any TIF locally that runs across business rate revaluations, and TIFs for major infrastructure projects would need to typically operate on a timeline of 20-plus years.

The process is still not as dynamic as it is in other countries such as the USA where use of TIFs has been widespread since the 1980s, and Canada, which has a particularly sophisticated approach. Using the experience gained by other countries should enable the UK to develop a suitable product for helping deliver much needed infrastructure to all regions.

The role of private finance

One of the driving forces behind the increase in infrastructure spending in the last decade has been the increased role of private investment.

The level of investment required in providing new infrastructure means that even in less austere times, the cost to the public purse is unviable.

In June, the Chinese government announced a £228 billion fund to invest in infrastructure within the EU, via the Asian Infrastructure Investment Bank vehicle. The political argument for HS2 is still divisive, but it would be even more contentious if the estimated £50 billion cost was not covered in some way by Chinese sovereign wealth.

Private involvement in infrastructure investment is a growing worldwide market, with an estimated \$1,800 billion per annum required in the next decade (OECD). In a report looking at private sector participation in infrastructure, the OECD recognises that despite a number of examples of failing or flawed public-private partnerships across the world in recent years, there are still considerable benefits from private sector investment beyond the weight of providing additional funds.

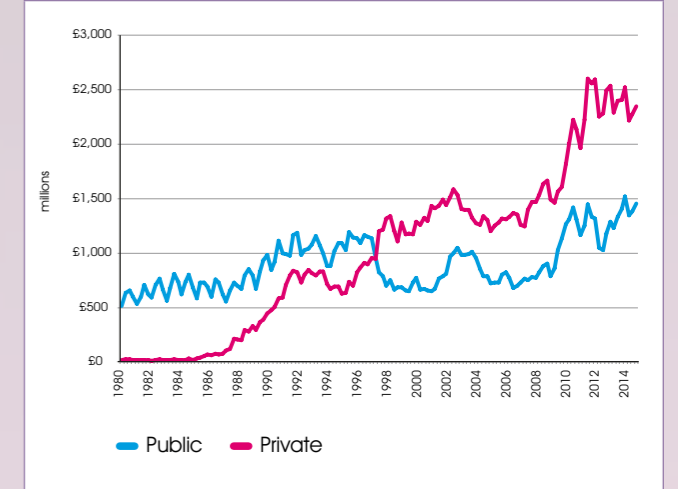
The principle benefits include a more competitive process, as well as making use of private sector expertise and management for public works. The growing role of private investment across the OECD group of countries over the last 20 years has resulted in an increase in both the scale and efficiency of infrastructure services.

In the early 1980s, private investment in infrastructure in the UK was minimal. By the end of the Major government in 1997, private investment had increased to over 40% of all infrastructure funding, before quickly overtaking public funding ever since.

By 2014, for approximately every £1 invested by the government in UK infrastructure, £1.67 was invested by the private sector (see figure 5). Core infrastructure schemes account for £8.4 billion out of a total of £50 billion of current PFI projects across the UK.

In 2011, the Pensions Infrastructure Platform was established as a way of attracting investment by pension funds into the infrastructure sector. The initial plan was for the scheme to raise £20 billion to invest into 500 building project across the UK over a 10 year period. Yet to date, the fund has only raised £1 billion. The sector was considered suitable for pension funds due to low risk, long term index inked returns for the right types of assets, but government underwriting is also deemed necessary if more funds are to invest in the product.

Figure 5 - Infrastructure investment by type of provider (quarterly)



Source: ONS

³ What makes countries more productive? Agglomeration economies and the role of urban governance – Evidence from five OECD countries, SERC 2015

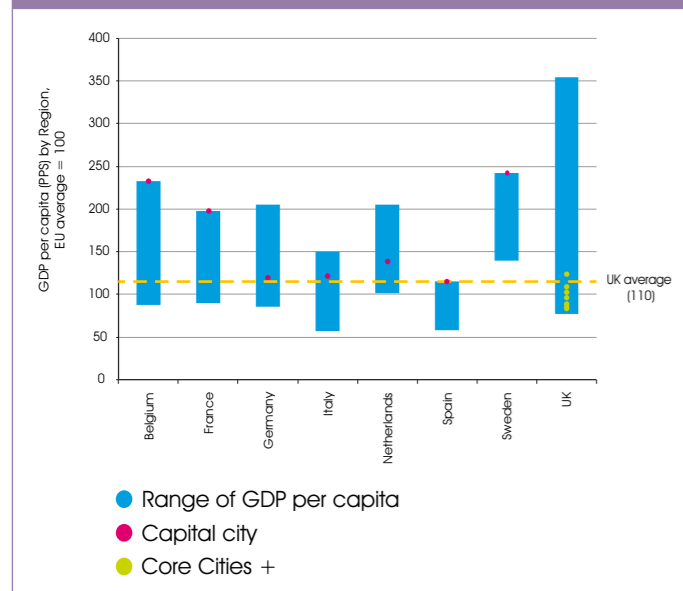
What is driving the need for investment?

In the wake of the economic downturn, there has been a significant focus on the need to rebalance the UK's economy and reduce the reliance upon London and the South East.

The Chancellor, George Osborne, has made clear his desire to see the establishment of a "Northern Powerhouse" which will play a greater role in delivering an increase in growth and productivity in regions where output per capita is below the UK, and in some instances the EU, average.

Central to this is addressing the issue of low productivity. The UK's core cities account for 25% of the economy, although output per capita remains below the national and EU average in each city bar one (see figure 6). This means that the UK has the broadest range in output per capita of all the major EU countries. The gap in productivity between London and Manchester, the two largest city economies in the UK, is the greatest within the G7 and more than double that of the equivalent gap for Germany.

Figure 6 - GDP per capita by region against EU average (2013)



Source: Eurostat

If the core cities were to close the gap in terms of output and match the UK average, an additional £66 billion would be added to the UK economy (Core Cities Group). Creating conditions for the type of higher value employment and innovation that will raise productivity in the core cities requires a range of measures, but first and foremost, investment in transport infrastructure and digital connectivity.

The transport network plays a key role in connecting people to jobs and markets, supporting supply chains and logistics and promoting trade at home and abroad. By 2040, the Department for Transport estimate that up to 100 million working days could be lost to congestion unless action is taken, while the number of rail passengers has increased by 57% in the last 10 years, with over 4.3 million rail journeys daily.

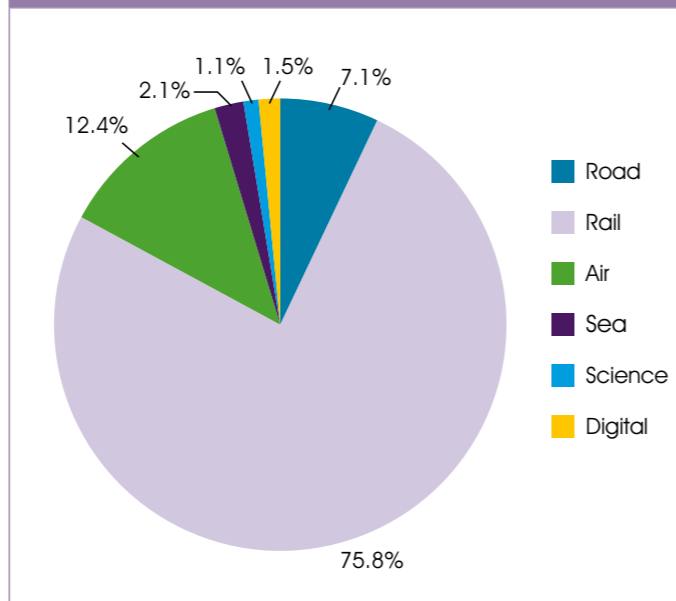
A key project for supporting an increase in regional productivity is HS2. While it will decrease journey times, a key benefit is the increase in capacity between London, the Midlands and the North, by easing pressure on existing routes such as the West Coast mainline. There is also discussion taking place in relation to a possible HS3 network improving connectivity between the cities of the North West with Yorkshire and the North East.

However, there is evidence that the UK may be directing too much investment towards the wrong type of connectivity, with the focus on improving travel and only a limited amount in comparison on digital infrastructure (see figure 7), as frequently suggested by the government's digital Tsar, former dotcom pioneer Martha Lane-Fox.

Of the major infrastructure projects currently identified by the Treasury, the £1.8 billion cost of improving digital connectivity only accounts for 1.5% of total expenditure, compared to £91.5 billion on rail (75.8%).

Investment in information and communication technology is a major driving force behind increased productivity. Many developed and emerging economies are investing heavily in digital infrastructure and the UK is at risk of being left behind if average broadband speeds do not match those in competing cities in Europe, the Americas and Asia.

Figure 7 - UK Major infrastructure project spending by type

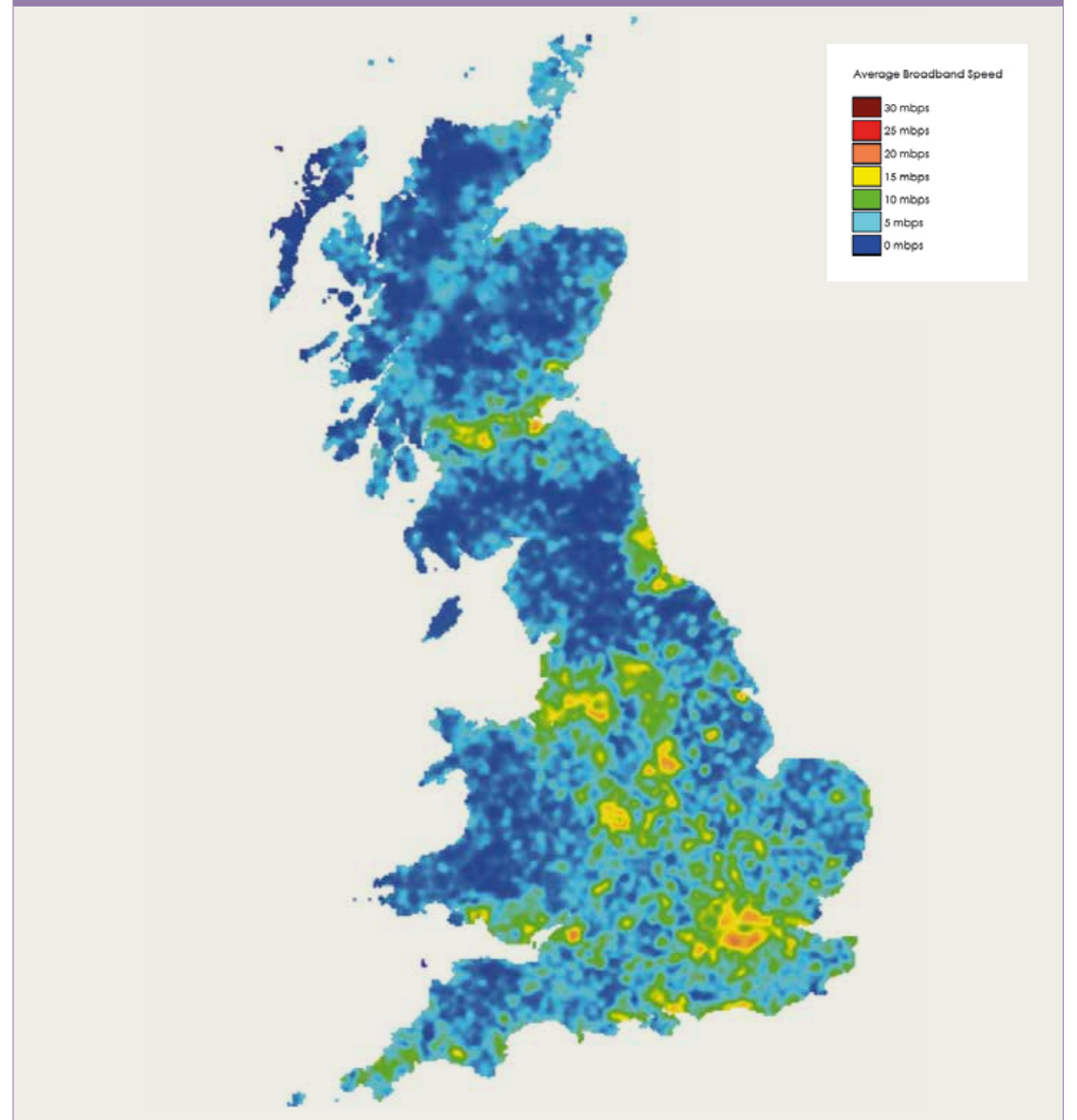


Source: HM Treasury

The UK needs to have high speed internet in excess of 100 mbps within the next five years to remain globally competitive. This infrastructure must also be able to cope with even faster demands in the future. As it stands, only limited parts of the country meet the EU average speed of 30 mbps, with large swathes even slower (see figure 8).

Despite this pressing need to improve broadband across the country, European state aid regulations mean that it is easier and cheaper to install new broadband infrastructure in rural areas than it is for urban locations where the regulations come into force. Yet it is urban areas where the need for faster broadband speeds is greatest, creating a clear challenge to delivering the quality of digital infrastructure needed to boost productivity and maintain global competitiveness.

Figure 8 - Average broadband speeds by postcode sector



Source: Ofcom

What are the major infrastructure projects?

The government has identified what it considers to be the 40 most important infrastructure projects currently under way or set to start in the near future.

Each project includes multiple local level improvements which are deemed to be either strategically significant in supporting wider objectives or carry the highest level of risk if they go undelivered.

Some of the improvements may appear to be only minor adjustments, while others are clearly nationally significant projects with benefits that spread far beyond the local area. However, each has the potential to help create further employment growth and thereby enable or unlock commercial property development that would otherwise be unviable (see figure 9 on page 14).



Rail

The rail network is the biggest recipient of expenditure, with over £95 billion of projects underway or in the pipeline. The most prominent of these is the £50 billion HS2, while Crossrail and the Thameslink upgrade account for a further £20 billion.

The Northern Hub is part of a wider £6 billion programme of improving capacity and connection times along with the South West route, the Great Western railway, the east-west electric spine linking Oxford and Cambridge, as well as the Midland and East Coast mainlines.

Improving the scale and speed of connectivity between the northern core cities in particular is a major building block for economic growth and job creation. So it is perhaps telling that there are calls from some quarters for a Newcastle-Hull-Leeds/Sheffield-Manchester-Liverpool HS3 route to be established in conjunction with improving connections with London.

There is also a long shopping list of improvements on top of what is already proposed, for example four-tracking the West Anglian network and high speed connections from Newport, Swansea and Cardiff to Bristol and London.



Road

The most expensive individual road projects already identified focus on improving capacity and reducing congestion on major existing bottlenecks. For example, improvements to the A14 between Huntingdon and Cambridge will enable easier movement of freight from the key ports of Felixstowe and Harwich to the rest of the UK.

Tackling major delays are the main focus of the works to the A1 around Newcastle upon Tyne and the A303/A30/A358 triangle around Wiltshire, one of the main arterial routes into the South West aside from the M4 and M5 motorways.

Other major projects revolve around improving access to Manchester and Birmingham airports. Manchester airport is currently seeing significant development in conjunction with Airport City, a major mixed-use development part funded by China's Beijing Construction Engineering Group. Also included are connectivity improvements for the Port of Liverpool, including the £600 million Mersey Gateway Bridge.



Sea

With globalised trading increasing demand for deep sea container shipping, improving the scale and efficiency of sea ports is vital. The newly completed London Gateway container port aims to create over 12,000 new jobs and has planning consent for up to 9.5 million sq. ft. of logistics space, creating the largest logistics park in Europe.

Other proposals include increasing capacity at the two largest container ports in the UK. Southampton opened its £100 million new berth in late 2014, while Felixstowe has consent to extend its container handling facility. Additionally, the development of Liverpool 2 is underway. When it opens at the end of 2015 it will use barges to deliver freight along the Manchester ship canal.



Air

The most important issue facing the UK's airport infrastructure is the need to increase runway capacity, particularly in south east. The Airports Commission has recommended the addition of a third runway at Heathrow, in preference to Gatwick or a new airport in the Thames Estuary, although the Government is not due to make a final decision until the end of this year. Heathrow's owners are already preparing to challenge any policy led ban on adding a possible fourth runway to the site.

Network Rail is also looking into a feasibility study to improve access with the Southern rail franchise, potentially opening up the possibility of a direct rail link with Gatwick airport.

A £4.2 billion capital investment programme is seeing improvements at Heathrow and Gatwick, including station upgrades. This follows on from other notable improvements including the new Terminal 2 building at Heathrow, the addition of new stands for the larger A380 Airbus and resurfacing Heathrow's northern runway.

At Birmingham airport, the runway has been extended as part of a £40 million project to increase the number of long haul destinations, while junction 6 of the M42 is set for a major upgrade in conjunction with the increased capacity at the airport and the new HS2 station.

Major improvements are also underway at Manchester Airport to double capacity with £1 billion investment, and with the Airport City development a key part of increasing connectivity with China and the Middle East. New facilities are being built at Edinburgh for Emirates airlines to cater for the additional destinations being served.



Digital

In addition to the £1.7 billion superfast broadband programme aimed at getting 95% of UK household's access to fast broadband, the government has committed £150 million to its Super Connected cities programme. This is aimed at increasing the speed and quality of broadband provision for small businesses and to provide wireless coverage in public buildings and city centres. The original 22 cities in receipt of these vouchers have since been increased to include a large number of major towns as well on a first come, first served basis.

Summary

Existing infrastructure in the UK is coming under increasing pressure, with a growing population and the need to support economic growth driving a new wave of major projects.

The economic case for investing in infrastructure is clear, and the country is spending more on infrastructure as a share of GDP than at any time in over 30 years, supported by a greater degree of private sector investment.

Much of the focus of investment has been on London, with its status as a leading global business centre and fast growing population.

This should now be re-assessed given the pressing need to rebalance economic growth towards the key regional cities. Infrastructure investment can provide extra impetus to help ensure that economic prosperity is not just focused on London and the South East.

However, spending priorities should not be seen as a choice between London and the rest of the UK. In order to rebalance funding over time without risking London's success, the real priority for the UK is to employ innovative financing mechanisms that increase the overall level of investment available, and bring in further private sector investment.

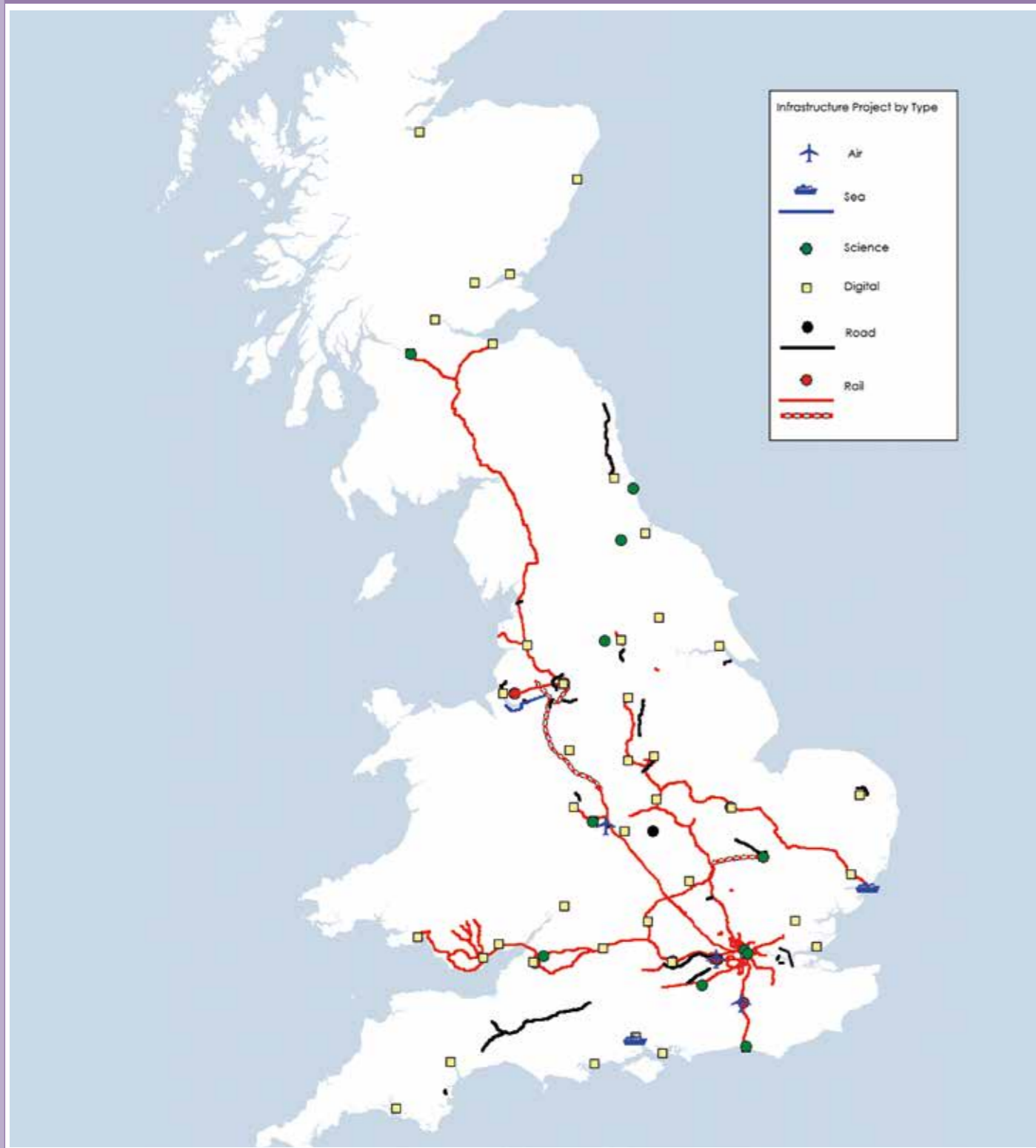
Simplifying appraisal schemes, devolving transport funding blocks and other decision making powers to the cities will also increase investment by speeding up decision-making and reducing costs.

A settled long term vision for delivering vital infrastructure remains a challenge for the UK, with political, environmental and financial pressures all contributing to uncertainty for larger projects that have the potential to be transformational and essential to Britain's global competitiveness.

Having witnessed some high-profile examples of budget overspends and delays, infrastructure in the UK has gained an image that is perhaps unfair, at a time when other countries are investing heavily in improving transport networks and digital connectivity.

For every project that has been deemed a failure, there are many examples of successful projects that can help the UK to deliver economic growth and job creation where it is needed most.

Figure 9 - Major UK infrastructure projects



Source: HM Treasury

Type	Infrastructure Programme	Value (billion)	Impact	Status	Sector Total (billion)
Road	Accelerated roads project	£0.56	Regional	Started	£8.52
	Strategic road network capacity	£0.75	Regional	Started	
	Smart motorways	£1.20	Regional	Started	
	Cambridge to Huntingdon A14	£1.50	Local	2016	
	Lower Thames crossing	n/a	Regional	Proposed	
	A303 / A30 / A358	£2.10	Regional	Proposed	
	A1 north east	£1.10	Regional	Proposed	
	Manchester airport, Birmingham airport and Port of Liverpool connectivity improvements	£0.12	City	Started	
	Mersey Gateway bridge	£0.60	Regional	Started	
	Local major schemes	£0.60	Local	Started	
Rail	Intercity express upgrade	£5.70	National	Started	£91.50
	HS2	£50.00	National	2017	
	Strategic rail freight	£0.25	Regional	Started	
	Crossrail	£14.50	Regional	Started	
	Thameslink	£6.50	Regional	Started	
	Northern hub	£5.90	National	Started	
	Great Western Programme		National	Started	
	South West route capacity		Regional	2017	
	Midland mainline		Regional	2017	
	East-West electric spine		Regional	2016	
	East coast mainline		National	Started	
	Major regional station upgrades	£1.70	Regional	Started	
	Heathrow & Gatwick rail improvements	£0.12	Regional	Started	
	TfL major schemes	£4.80	City	Started	
	Northern line extension VNEB	£1.00	City	2015	
Local major schemes	£1.00	Local	Started		
Air	Airport improvements at Heathrow, Birmingham & Gatwick	£15.00	Regional	Started	£15.00
Sea	Port capacity at Southampton, Felixstowe and Liverpool 2/MSA	£2.50	Regional	Started	£2.50
Science	Francis Crick Institute & Pirbright Institute	£1.20	Regional	Started	£1.30
	Innovation centres (Catapults)	£0.09	Regional	Started	
Digital	Super-connected cities	£0.15	National	Started	£1.85
	Superfast broadband	£1.70	National	Started	

Source: HM Treasury



The Core Cities and Infrastructure

Rebalance the UK economy

The heart of the argument that has been put forward by the core cities group, local enterprise partnerships (LEPs), city leaders, and local businesses is the message that the cities themselves need to have a greater say on what infrastructure is needed, how it is funded, and how and when it will be delivered.

Nationally significant infrastructure projects such as HS2 are aimed at supporting the core cities, while as part of the City Deal, each core city has identified more local schemes that can improve productivity, support business or unlock potential development and address the inherent deficit in transport infrastructure spending.

One of the major challenges facing the core cities is promoting intra-core city commuting and increasing the number of people from surrounding areas coming to the cities to work (see figure 10). There are just as many people in the 'core cities plus' group who commute into London on a frequent basis (4,100) as there are who commute between Sheffield and Leeds (4,190) or between Manchester and Liverpool (4,150).

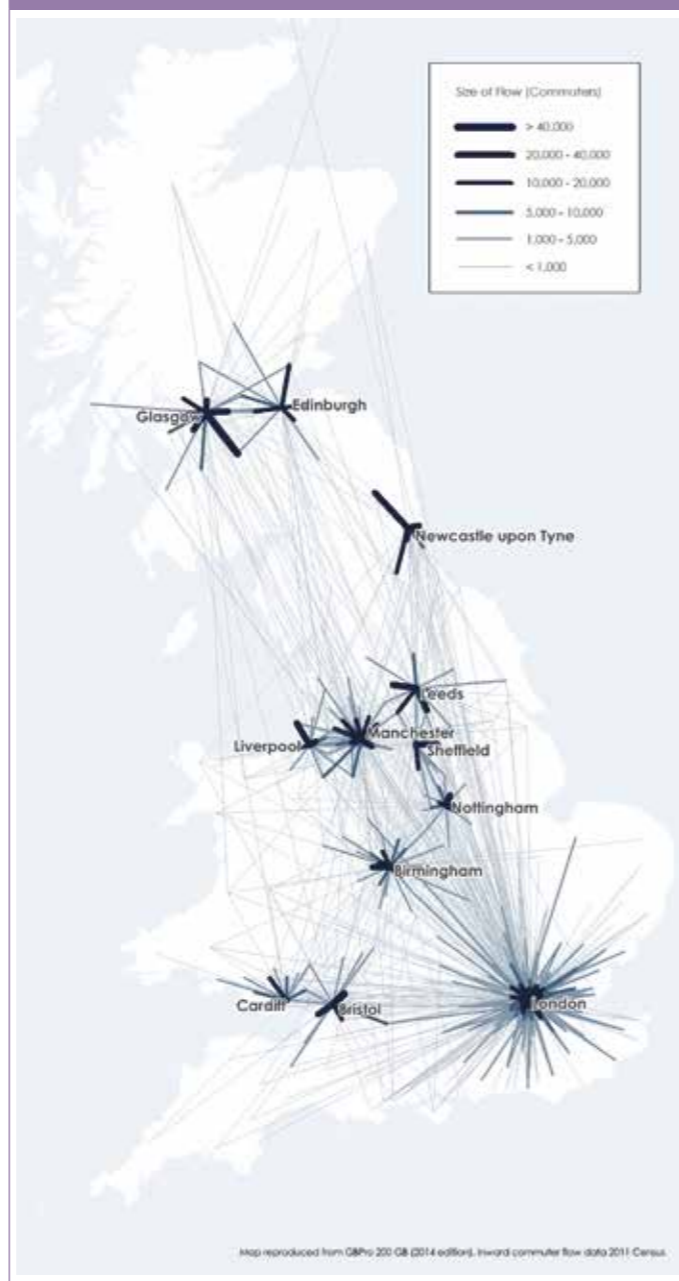
The comparative lack of intra-urban commuting between the core cities can be blamed in part on the quality and type of infrastructure, such as slow rail connections and a congested road network, as well as a lack of available jobs. Within 40 miles of Manchester, there is a potential catchment of 10 million people, yet only 0.2% of commuters to Manchester come from Leeds, despite it being at the edge of this potential catchment.

In London, high housing costs and the limited housing supply in relation to the size of the workforce mean that long-distance commuting is a viable alternative for many workers. This may partly explain the distortion in spending per capita on public transport and particularly rail in the capital compared to other regions.

The total workforce in the regional cities is considerably smaller on an individual basis, while the lower cost of housing means that employees are able to live closer to their place of work and are less compelled to travel longer distances.

Greater investment to increase capacity between the core cities and reduced journey times will help job creation that will come from higher economic growth and increased productivity. At the same time, the level of connectivity with the rest of the country and global markets needs to be improved.

Figure 10 - Commuter flows for UK cities



Source: Bilfinger GVA using ONS

How can delivery of infrastructure be improved?

As part of the bid process for the City Deal in 2012, each of the eight English core cities submitted proposals. These were based more on new ways of working and devolved freedoms than extra resource, but that also included elements of funding, which identified the necessary infrastructure schemes that each city thought necessary to support and improve economic growth. More recently, Cardiff and Glasgow have joined the core cities group.

The basis behind these proposals is that the cities themselves have the best understanding of what infrastructure improvements are required, having been assessed by both the local authorities and private business as part of Local Enterprise Partnerships.

Most of the key proposals centre on improving the speed and scale of connectivity, either locally, regionally or in some instances, internationally. A summary list of the major schemes for each city is set out in figure 13 on page 24, alongside potential commercial property schemes that are likely to be developed partly as consequence of infrastructure investment.

With the exception of HS2 and a potential HS3, the majority of these schemes are on a scale that can be implemented at a local level. Even so, some schemes are still dependent upon a national framework or a specific policy before any approval can be granted.

A relevant example of this is the improvements to Manchester airport. Much of the recent focus of the Davis Commission into new airport growth was on London and the South East. Although a recommendation has been made for a new runway at Heathrow, there is still little clarity with regards to future aviation policy over the long term.

As a result MAG, the owner of both Stansted and Manchester airports, has asked the government to set out a clear policy vision for the next 25 years that will enable it to plan and implement improvements and expansion at both airports.

One of the main priorities for the core cities is the devolution of powers from central government to enable the cities to be more proactive in shaping their own growth. Tentative steps have been taken with various business rate retention powers and other funding measures, but more can be done to help this process along (table 2).

The greater challenge though is enabling the cities so that they can plan, invest in and deliver the infrastructure they need to improve connectivity. In some limited aspects, this is currently within their grasp, but in many situations, higher approval is still required.

This is partly due to the range of parties likely to be involved, such as the Civil Aviation Authority, the Highways Agency and Network Rail, as well as the necessary government departments and county authorities.

With Greg Clarke the secretary of state at the CLG, the core cities have an established relationship with a minister who has been part of the process of increasing devolution and promoting growth within the core cities, while there is also now a dedicated Minister for the Northern Powerhouse, James Wharton.

The process of devolving responsibility for the transport network across the north of England has started, but more details are set to be revealed in the Spending Review in November 2015 and the Budget in 2016. The core cities across all regions will undoubtedly keeping a close eye on how this unfolds.

Table 2 - further devolution: ways of transferring power to the core cities

Infrastructure investment funds	Single investment pots in local control to include housing, energy, transport, digital and other capital pots, structured in a way that allows cities to benefit from uplifts in tax and land values and reinvest.
Devolved transport funding	Funding for maintenance, alongside the National Joint Infrastructure Plan, with strategies built around the priorities of the core cities allowing for simplified appraisals which understand the local economic context.
Land commissions/ Single public estates	Enable local authorities and public bodies to get the best value from assets and extend compulsory purchase powers.
Intermediate body status	Enhanced status which allows cities to take decisions regarding EU funding, utilising other funding pots for capital investment.
Fiscal reform	Local retention of more of the tax base within the core cities, allowing greater levels of investment into necessary infrastructure projects that will enable an increase in future tax revenues.

Source: Core cities group

How should infrastructure be targeted to boost the regional hubs?

One of the clear messages from all of the city deal proposals is the need for improved access with other regional centres. The need for improved connectivity across the trans-Pennine route in particular is one of the most prominent items as it impacts on the regional cities within the group that form the basis of the Northern Powerhouse, as well as improving accessibility to smaller, neighbouring locations.

The government has set up Transport for the North (TfN), much like Transport for London (TfL), to oversee multi-regional and multi-franchise issues to improve rail travel. One proposal is for a Noyster (Northern oyster card) to make rail travel more affordable and harmonised across the network, although a potential sticking point is the number of competing franchises across this area. So far £30 million has been set aside for this body, although it should be noted that this sum is equal to one day's running costs for its London based cousin.

Other pan-city projects based partly on transport connectivity are emerging, like Midlands Connect, across the Birmingham-Nottingham axis and Great Western Cities, seeking to build on economic flows between Cardiff and Bristol.

A stronger argument, and one with a growing number of supporters, is for a dedicated east-west HS3 route that either follows existing routes or takes a newly built tunnel under the spine of England.

A key issue is the current time it takes to move between the core cities. Travelling from Newcastle to Liverpool by the fastest rail route possible takes nearly ten minutes longer than it takes to get from Newcastle to Kings Cross, despite London being almost twice the distance.

TfN has set out the target travel times it hopes to achieve for connecting the north of England (see figure 11), although the delays to the trans-Pennine rail improvements mean that this issue is unlikely to be addressed by 2020.

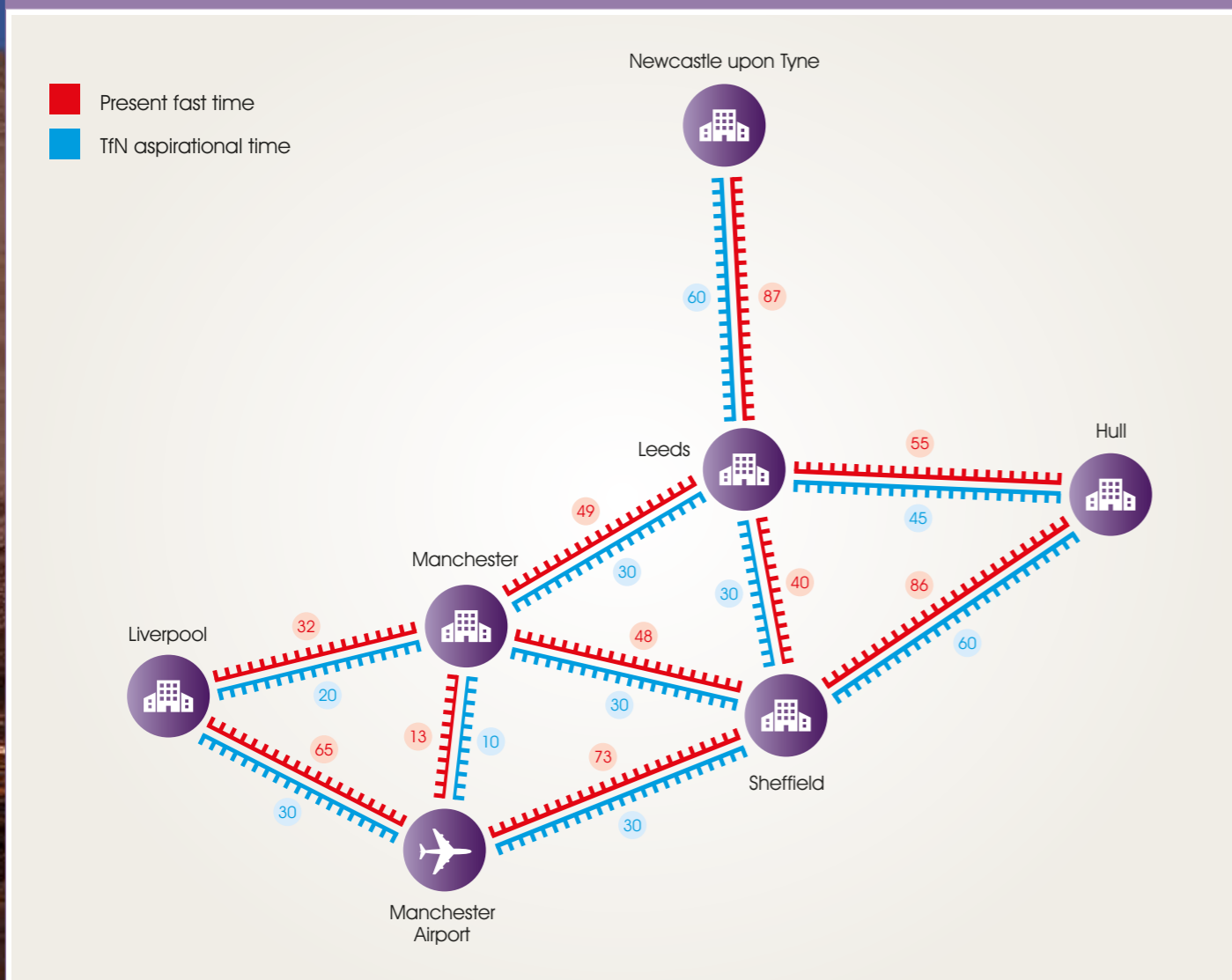
Access to high speed broadband is also a vital component for improving connectivity and just as importantly, competing with other cities in the UK and overseas. According to the Core Cities group, ultrafast broadband (100 mbps) is set to become just as important for supporting commerce as shipping and rail were in the past.

In terms of priorities for businesses looking to relocate, telecommunications infrastructure is the third most important consideration after access to markets and quality of staff, but importantly, ahead of transport links (European Cities Monitor). The quality of broadband has an impact on competitiveness. When broadband speeds are doubled, GDP increases by 0.3%, suggesting that it is a major component of job creation and economic growth (World Economic Forum).

There is currently an EU wide target that all populated areas will have average broadband speeds in excess of 30 megabytes per second (mbps) by 2020, with over half of all customers having access to superfast broadband with speeds of 100 mbps or more. None of the core cities have an average broadband speed higher than 24.5 mbps, with several slower than 20 mbps.

Broadband provision is one area where the core cities need freedom to act and be competitive against other global cities, but their hands are tied by red tape and barriers to investment. The government has set out a strategy for advanced digital communications infrastructure but planning policy, state aid issues, EU regulations and the laborious process of installing subterranean cabling means that upgrading and future proofing broadband is costly and time consuming.

Figure 11 - Target rail journey times for the Northern Hub



Source: Transport for the North



Where are the shortfalls in what has been proposed?

Much of the emphasis of the proposals is to improve transport to varying degrees and scale. Although each city has identified key projects that will bring about these aims, some schemes fall outside of the city region influence which could still have a major impact on work and travel conditions for those cities.

A recent example of this is a proposed road tunnel in the Peak District National Park (PDNP) to improve driving times between Sheffield and Manchester. The £6 billion scheme is not under the control of either Sheffield or Manchester city regions, so therefore it falls to the PDNP, along with the Department for Transport and Transport for the North (TfN) to make a decision. A feasibility study has been commissioned to see if the tunnel, one of the longest in Europe if completed, is both viable and can be adapted to include rail connections.

This highlights an important issue for the core cities as a concept for delivering local growth. Each city is primarily focused on improving its own outlook whereas the core cities group is focused on enabling all of the core cities to have greater powers, infrastructure and skills. In this instance,

TfN is able to act as an overseer for both Sheffield and Manchester, increasing the chance that an important piece of infrastructure that benefits both cities can be implemented.

However, this raises questions for the core cities outside of the TfN scope of influence. It could be argued that there is a reasonable case for a similar transport body for the South West and the Midlands.

With each city looking to take an active role in planning new infrastructure, a clear long term vision is required for government, the relevant transport agencies, the cities and other stakeholders. Without an agreed vision, there is a greater risk of replication, inefficiencies and other problems that are likely to increase overspending and delays in delivering key local and regional infrastructure.

Transport is not the only area where the cities have ended up in direct competition with each other. The Connected cities broadband programme has a £150 million fund that was initially set up to provide grant vouchers for improving Wi-Fi provision in 22 cities and major town centres.

Since its inception though, the number of places eligible for these grants has increased to nearer 40, with little change to the budget available and complaints from the cities involved that the scheme is not working.

What schemes or developments might be unlocked by improved infrastructure?

The Core Cities Group estimates that with additional local financial controls and freedom to invest, one million additional jobs could be created in the English regional cities by 2030, which would add a potential £222 billion to the economy but also have major implications for commercial property.

Much of the new infrastructure proposed over the next decade will help unlock development sites, raise the potential for employment growth, and increase the potential amount of investment into the commercial property sector.

Indeed, this is indeed already happening, for example with the £800 million development of Airport City over the next 15 years offering over 5 million sq. ft. of office, logistics, leisure, retail and hotel space.

Central London provides a good example of the importance of transport infrastructure for commercial development. Over the last decade, the four office sub-markets with the highest increases in stock have all been focused around those railway stations which have seen major improvements.

This trend of station-centric development is likely to replicate itself in the core cities, given their strategic importance. Such schemes are already in the pipeline, for example a potential 600,000 sq. ft. development of mixed-use space at New Victoria, adjacent to the recently refurbished Manchester Victoria station, is looking to secure £150 million in forward funding.

At present, there is almost four years' worth of office supply under development in Manchester, almost 1.3 million sq. ft., the largest of any of the core cities (see figure 12). Both Glasgow and Bristol have seen a number of speculative developments recently complete, while the 350,000 sq. ft. development of Paradise Circus in Birmingham is expected to start soon.

All of this reflects renewed investor confidence in the regional commercial property markets following the downturn in the market. This has been assisted in part by the large number of major infrastructure projects linked to the core cities which are likely to contribute towards an increase in demand as a result.

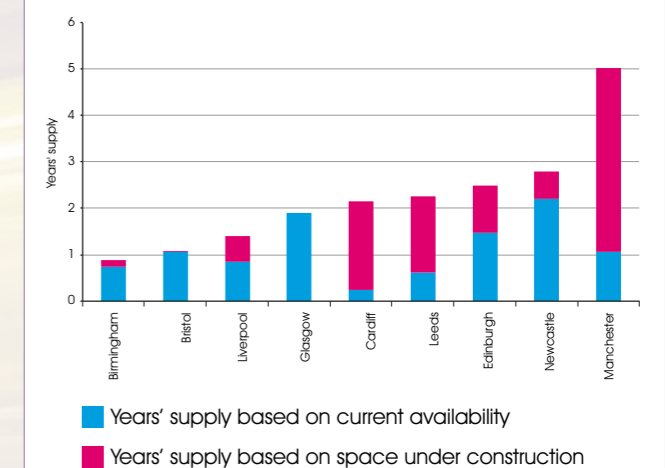
The Prime Minister recently took a trade delegation to Singapore, including a number of property firms, to encourage similar levels of investment from Asia that London has witnessed in recent years, with the core cities at the forefront. Airport City is receiving a high degree of investment from China, while Middle Eastern funds are investing in the centre of Manchester and Liverpool.

Investing in new infrastructure and improving existing resources has several benefits for property development. Brand new sites which were previously undevelopable or lacked sufficient access become feasible with a new road or station.

New infrastructure encourages regeneration of existing markets close to major termini, interchanges and ports of the sort that Manchester is currently witnessing and is starting to take place in cities such as Birmingham and Liverpool. It also increases the attractiveness of a location, with improved transport allowing labour supply from a wider catchment area or improved broadband speeds.

Figure 13 provides a detailed guide of the key infrastructure improvements each of the 10 cities is looking to deliver and the potential commercial property developments we believe could be unlocked.

Figure 12 - Grade 'A' office supply / demand ratio (Years' supply)



The supply / demand ratio is a ratio of current availability (end of 2014) and speculative completions under construction, against the 10 year average annual take-up (2005 to 2014). The ratio is equivalent to the number of years' supply and gives an indication of market balance, with a low figure indicating a greater likelihood of undersupply.

Source: Bilfinger GVA

Figure 13 - Key core city infrastructure and potential commercial property development

Source: Bilfinger GVA, HM Treasury, CLG

Liverpool	
Key infrastructure improvements	Property development and opportunities
Mersey gateway bridge	Peel's Liverpool Waters – including a new Cruise Liner Terminal with leisure, hotel and retail
HS2 (stage 2)	Liverpool 2 port opens in late 2015, providing increased access to UK markets and has enabled new freight and distribution sites nearby
Expansion of Mersey multimodal gateway	
Atlantic gateway port/Mersey waters	
Liverpool 2	
Northern rail connectivity (Northern hub)	

Glasgow	
Key infrastructure improvements	Property development and opportunities
Glasgow Airport Rail Link	Airport rail link potentially unlocking 13Ha/45acre Hub site at J29 M8
Clyde Valley public transport improvements	Commonwealth Games Athletes Village - 6000 houses and over next 10 years
M74 Link and East End Regeneration Route	Shawfield/Riverside business district in Clyde Gateway will develop 1 million sq. ft.
A8/M8 corridor improvements	Investment in improved north south access across M8 will be catalyst to major regeneration of large sites at Port Dundas & Sighthill
Govan and Clyde regeneration	Potential bridge across Cart River linking in to Airport creating opportunities for further expansion and development at Westway Business Park Renfrew

Edinburgh	
Key infrastructure improvements	Property development and opportunities
£150m Airport expansion	Garden District to provide office, leisure, retail, education and residential at 650 acre site
New Edinburgh Gateway station	320,000 sq. ft. of office development at the £200m Haymarket, adjacent to tram stop and direct access to airport
New berths and land reclamation at Leith Port	New Waverley mixed use development
East Coast Main Line	17,000 sq. ft. of office space as part of Shrubhill redevelopment at former Tram depot
HS2 possible third phase connection	Potential bridge across Cart River linking in to Airport creating opportunities for further expansion and development at Westway Business Park Renfrew
Tram extension to Leith and Ocean Terminal	
M8 M73 M74 Motorway improvements project	
Edinburgh Glasgow Rail Improvement programme (EGIP)	

Newcastle upon Tyne	
Key infrastructure improvements	Property development and opportunities
A1 Western bypass improvements	Stephenson Quarter and redevelopment of area around station
Broadband improvements	Science Central at the former Scottish and Newcastle brewery
Transatlantic route from Newcastle airport	Office, retail and leisure led scheme on East Pilgrim Street
Metro upgrade	
Trans-Pennine electrification	
East Coast mainline improvements	
Newcastle to Liverpool Northern Rail Connectivity (HS3)	

Manchester	
Key Infrastructure improvements	Property development and opportunities
Manchester City airport improvements to increase from 25million to 50 million passengers with T2 expansion and T3 improvements	Victoria station and New Victoria regeneration
M56 link road to airport	Airport City
HS2 (stage 2)	6.2 acre site brownfield site at the former Mayfield station, next to Piccadilly station (HS2)
Manchester Cross City bus	Office development along the Corridor, life sciences and tech cluster
Rochdale bus interchange	Ship Canal – logistics between MSC port and east-west connections
MetroLink extensions	
Trans-Pennine electrification	
Port Salford	

Birmingham	
Key infrastructure improvements	Property development and opportunities
HS2 to Birmingham (stage 1)	Redevelopment around New Street station
Birmingham New Street station enlargement	Freight, logistics, office and hotel around Birmingham International station as part of HS2 and airport expansion
M6 managed motorway from Birmingham to Manchester	Paradise Circus unlocked due to road improvements funded by EZ
Improvements at M42 Junction 6 and A45 corridor	Office, retail and leisure development in Curzon as a result of Metro extension
Increase Birmingham airport	Refurbishment of Grand Central retail following New Street station work.
Extend metro to Broad Street and connect New Street and Snow Hill	

Leeds	
Key infrastructure improvements	Property development and opportunities
HS2 fork (stage 2)	East Leeds enterprise zone, big shed requirements on city owned land
Trans-Pennine Express electrification	Vickers site on East Leeds orbital relief road, linking up with J46 on M1
Leeds station enlargement and two new stations	Central park – potential HS2 station and associated development
M1 Junction 39-42 improvements	Southbank – Tetley Brewery site close to potential HS2 station – mixed use
A6182 White Rose Way dual carriageway	Whitehall Road and South West corridor
£1billion West Yorkshire Transport + fund	
Leeds Bradford international rail link/HS3 route	
East Leeds Orbital Relief road	

Sheffield	
Key infrastructure improvements	Property development and opportunities
Midland Mainline electrification	Heart of the City St Paul's Phase 3 by CIP on site and under construction, 10 stories of speculative development Grade A office space
HS2 to Sheffield and Leeds (stage 2)	£600m Sheffield City Region Investment Fund (SCRIF)
HS3 and key role in the Northern Hub	Sheffield Retail Quarter – procurement underway for development partner for major city centre retail scheme
UK's first tram-train (Sheffield to Rotherham) from 2017	Sheffield Business Park with Advanced Manufacturing Research Centre 2 Campus including Factory 2050
M1 improvements around Junctions 31-32	Further development on the Advanced Manufacturing Park, Waverley
Bus Rapid Transport North – Sheffield to Rotherham	The Diamond University of Sheffield Engineering Building, due for completion Sept 2015
Robin Hood Airport Doncaster Sheffield relief road	HS2 station Masterplan for Sheffield Victoria in the city centre, unlocking further development

Cardiff	
Key infrastructure improvements	Property development and opportunities
M4 relief road, Newport	Logistics and freight park at Cardiff airport
Southern PDR/Eastern Bay link road	Central Square redevelopment
Cardiff metro	Conference centre, Arena, leisure and hotels at SA Brains Brewery site
Electrification of Cardiff, Swansea and Valleys line	Pengam Moors retail, office and leisure opened up with new road connections on M4
High speed connection with Bristol	
Severn Crossing and tidal barrier	
Cardiff airport development	
Cardiff Bay to City Centre tram	

Bristol	
Key infrastructure improvements	Property development and opportunities
Bristol bus rapid transit scheme	70ha of underused sites targeted by infrastructure improvements, with £20million of investment committed already
South Bristol Link – radial road route connections	Office redevelopment around Temple Meads including 98,000 sq. ft. speculative development at Glass Wharf
Electrification of Great Western Line between Paddington, Bristol and Cardiff	Other schemes include Temple Gate, George & Railway Hotel, Engine Shed 2, and Glassfields with as much as 250,000 sq. ft. combined
Bristol airport expansion	12,000 seat arena at former diesel depot for Temple Meads
Bristol port/Avonmouth deep sea container terminal	180,000 sq. ft. of speculative office development at Bristol Parkway station
Greater Bristol metro	1,000 acres of development for deep sea port at Avonmouth (EZ)

Nottingham	
Key infrastructure improvements	Property development and opportunities
Connect East Midlands with HS2	Redevelopment of lace market into Creative Quarter
Midland mainline improvements	Life sciences and physics lab and incubation space
Nottingham Express Transit (NET 2)	Logistics and distribution following improved access with airport, rail, and motorway
Road improvements between M1, Nottingham and East Midlands Airport	
Superfast broadband in Creative Quarter & expand district heating	



Conclusion

The UK is better at infrastructure than some reports would suggest, especially given the relative bureaucratic ease and speed at which projects can be delivered in other countries.

Yet looking at the profile of recent major projects, it is clear that the majority have focused on supporting London and the South East. With only a handful of projects completed in the core cities in recent years, our recent track record outside London is debateable.

While investment in London has traditionally been justified in economic terms as part of an 'only so much in the pot to go round' argument, it is clear that the status quo is no longer tenable, particularly given the Government's commitment to rebalance the economy.

More needs to be spent in the rest of the country if the focus of economic growth is to move away from the South East, as current levels of spending per capita on public transport are massively distorted against the core cities.

The real 'value-added' debate is about what will grow the national investment pot, for example through innovative financing mechanisms linked to fiscal reforms, and devolution of powers and funds to speed up and reduce the costs of development.

Some key projects remain too long term and uncertain when they are needed now. Transport infrastructure between the core cities, and in the Northern Hub in particular, need to be improved immediately if the economy is to be rebalanced. Indeed, trans-Pennine improvements should take place in a similar time-frame to HS2, in order to reap the full benefits of an improved north south link and increase capacity.

Infrastructure projects in the UK suffer from a lack of long-term vision and remain too vulnerable to national political dispute. This results in uncertainty over delivery, a lack of clarity and some trepidation from investors.

The heavily centralised role of governance in the UK adds further weight to this problem, limiting the level of local reinvestment from taxation and diluting the extent to which cities are able to influence the decisions that affect them the most. Instead, there needs to be greater consensus from the bottom up, with core cities building a political vision that can help determine future infrastructure strategy.

Increasing the flow of people between all the core cities and reducing journey times will help create more opportunities for growth, particularly when they are in relative proximity. This will also help encourage the development of strategic corridors rather than individual clusters.

The initial focus has been on the northern cities of Liverpool-Manchester-Leeds / Sheffield-Newcastle with Transport for the North, but the same applies to the Scottish urban belt, the Midlands and the South Western cities, many of which are collaborating in a similar way across meaningful economic geographies.

Aviation policy and infrastructure also remains heavily reliant upon the South East, compounding the capacity and congestion issues that airports such as Heathrow face, but driven by the economic benefits.

The regional airports linked to the core cities need to become a greater focal point for international travel, taking some of the pressure away from the London airports, helping to improve trade and opening up new economic benefits. Initial steps are being taken to increase capacity and develop new routes but again, a lack of a coherent long-term policy vision on aviation limits what can be done.

There is a growing view that the current focus on physical connectivity should be rebalanced towards virtual connectivity. High speed rail in the UK is slow by international standards, but broadband speeds are even slower. Another issue is the degree to which the broadband infrastructure currently being installed is future-proof and can cope with an expected fivefold increase in average speeds.

The benchmark set by the UK government and the EU for average speeds by 2020 is a fraction of what is currently being achieved by competing cities in other parts of Europe, America and Asia and as a country we clearly need to invest more in this area. But rather than portraying this as an 'either/or' argument against other types of infrastructure, a solution needs to be found so that this investment can be delivered in conjunction with other projects taking place.

The use of innovative funding mechanisms such as local authority bonds, TIFs and capturing future uplifts in land value are all essential in freeing up the core cities to invest in new infrastructure. The fiscal reform that will enable this is still in its early stages in the UK and there will inevitably be some useful lessons learned along the way as well as what can be gleaned from their use in other countries.

There is no reason to doubt that with greater devolution and financial firepower, the core cities will be able to start investing in the necessary infrastructure to boost productivity. Determining how successful they are will only be possible once their use becomes widespread and the physical benefits of the new infrastructure they deliver can be seen.

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Cardiff
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