SHEFFIELD CITY REGION TRANSPORT STRATEGY 2018 - 2040

November 2017

DRAFT FOR CONSULTATION

Sheffield City Region

Sheffield City Region

CONTENTS

FOREWORD

We are pleased to present the Sheffield City Region Transport Strategy 2018 – 2040. Transport has an impact on everybody's life and is central to us achieving our ambitions for economic growth, guided by our Inclusive Industrial Strategy. This strategy defines our vision for the future – that by 2040 we will continue to be a forward-looking City Region with integrated transport connections that support economic growth and improve quality of life for all. To realise our vision this strategy defines the goals we must achieve, the policies we will adopt to do this, and the conditional outcomes by which we will measure our success.

This strategy is part of the Fourth Local Transport Plan for South Yorkshire, in conjunction with an Implementation Plan which will be produced subsequently and which will explain how the strategic priorities identified here will be delivered. In producing this strategy we have drawn extensively on the 2011 Sheffield City Region Transport Strategy, refreshing it to reflect the changes that have transpired since it was published; greater devolution of powers and creation of the Sheffield City Region Combined Authority; establishment of Transport for the North; progress on delivering national infrastructure programmes; and our own successes in implementing transport improvements across Sheffield City Region.

People's travel patterns do not always match the administrative boundaries between South Yorkshire and its adjacent counties. We have therefore developed this strategy across the economic geography of Sheffield City Region, which reflects the travel to work area for Sheffield and its neighbouring towns. Sheffield City Region includes the whole of South Yorkshire, and also parts of Derbyshire and Nottinghamshire, including the Peak District National Park.

As the Local Transport Body for South Yorkshire, the Sheffield City Region Combined Authority has worked in collaboration with authorities across the Sheffield City Region to create this strategy. The Local Enterprise Partnership for the Sheffield City Region has a key role in developing our policies to support the area's prosperity and economic growth, which are at the heart of this strategy, and which we have reflected in its development.

In preparing this strategy we have consulted with business groups, local authority partners, national infrastructure providers, the health sector, universities and transport operators. We have sought to strike the right balance between encouraging investment and increasing productivity, whilst at the same time increasing economic inclusion and access to employment, creating healthy streets where people feel safe, enhancing our environment, and embracing new technologies and ways of doing things. Following the twelve-week public consultation period we will also incorporate feedback received from wider stakeholders and the general public.

This is a long term strategy for a forward-looking City Region. It clearly sets out our priorities and ambition within a flexible framework which will prove resilient over time – allowing us to plan for the future with confidence.

EXECUTIVE SUMMARY

INTRODUCTION

This Sheffield City Region (SCR) Transport Strategy sets out the transport priorities for our City Region up to 2040.

This Transport Strategy updates and supersedes the policies and measures of our previous Transport Strategy, published in 2011. It forms part of our Local Transport Plan (LTP) and is adopted by the SCR Combined Authority, as the Local Transport Body for South Yorkshire.

OUR VISION

WE WILL CONTINUE TO BE A FORWARD-LOOKING CITY REGION WITH INTEGRATED TRANSPORT CONNECTIONS THAT SUPPORT ECONOMIC GROWTH AND IMPROVE QUALITY OF LIFE FOR ALL
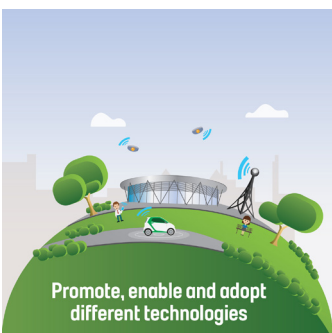
OUR GOALS

Support inclusive economic growth

Create healthy streets where people feel safe

Improve the quality of our outdoors

Promote, enable and adopt different technologies

Goal	Policy	Conditional Outcome (by 2040)
Support inclusive economic growth	1. Improve access to jobs, markets, skills and supply chains 2. Enhance productivity by making our transport system faster, more reliable and more resilient 3. Invest in integrated packages of infrastructure to unlock growth and support Local Plans	a. Increase GVA by £500m through increasing the number of economically active people living within 30 minutes of key employment locations and universities by public transport b. Increase rail commuter flows with Greater Manchester and Leeds City Regions by 4,950 incoming & 7,400 outgoing residents c. 90% of our population located within 1.5 hour journey time by public transport of an international airport that offers long-haul flights d. Increase productivity by £500m through reducing delays on our transport network e. 70% of people living in the most deprived areas are brought within a 30 minute journey time by public transport of an urban centre, growth area or university
Create healthy streets where people feel safe	4. Make our streets healthy places where people feel safe 5. Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel 6. Improve sustainable and inclusive access to our green and recreational spaces	f. Achieve mode share targets of 47% private car, 33% public transport, 9% walking and 11% cycling g. 95% public opinion that our local transport choices feel safe h. Reduction of reported casualty rate of 6% pedestrians, 3% cycles, 3% private transport and 7% public transport
Improve the quality of our outdoors	7. Actively improve air quality, especially in designated AQMAs 8. Deliver a low carbon transport network, including a zero carbon public transport network 9. Work in tandem with the planning and development community to create attractive places	i. Eliminate AQMAs in our City Region j. Reduce tailpipe carbon emissions in line with targets for the UK and have a zero carbon public transport network by 2040 k. Increase footfall in the main retail and leisure areas within our urban centres by 15% through improvements to our public realm
Promote, enable and adopt different technologies	10. Be at the forefront of transport innovation 11. Enable different solutions to create a fully integrated and inclusive transport service 12. Adopt technology solutions to stimulate change	l. £330m cumulative additional transport-focussed research and development investment within our City Region m. Increase productivity by £75m through technology based efficiencies and reduced journey times

Table 5.1 - Our transport policies and conditional outcomes

1.0   INTRODUCTION

1.1   PURPOSE OF OUR TRANSPORT STRATEGY

This SCR Transport Strategy sets out the transport priorities for our City Region up to 2040.

This Transport Strategy updates and supersedes the policies and measures of our previous Transport Strategy, published in 2011. It forms part of our Local Transport Plan (LTP) and is adopted by the SCR Combined Authority, as the Local Transport Body for South Yorkshire.

This Transport Strategy is accompanied by an Integrated Assessment and Habitats Regulations Assessment.

1.2   REFRESH OF OUR TRANSPORT STRATEGY

Our existing Transport Strategy was published in 2011, and describes the transport priorities for our City Region for the 15 year period up to 2026. Since then, we have made a devolution deal with Government and have worked hard to develop the SCR Inclusive Industrial Strategy, which is our strategic plan for economic growth to 2040. In light of this development in our regional policy, it is necessary to refresh our Transport Strategy so that it aligns with, and supports our Inclusive Industrial Strategy, as well as the following wider policy and strategy drivers:

-   Transport for the North has now been established to speak with one voice for the North on Pan-Northern Transport requirements and has a Strategic Transport Plan for the North.
-   Highways England has changed its operational status and updated its Road Investment Strategy.
-   Local Plans have moved on in the last seven years and the Transport Strategy needs to catch-up.

Furthermore, the rate of technological change over the last decade has been unprecedented, which means that our opportunities, challenges and possible solutions have changed. This refresh of the Transport Strategy will make us more prepared and better able to achieve our regional ambitions in a coordinated and coherent manner.
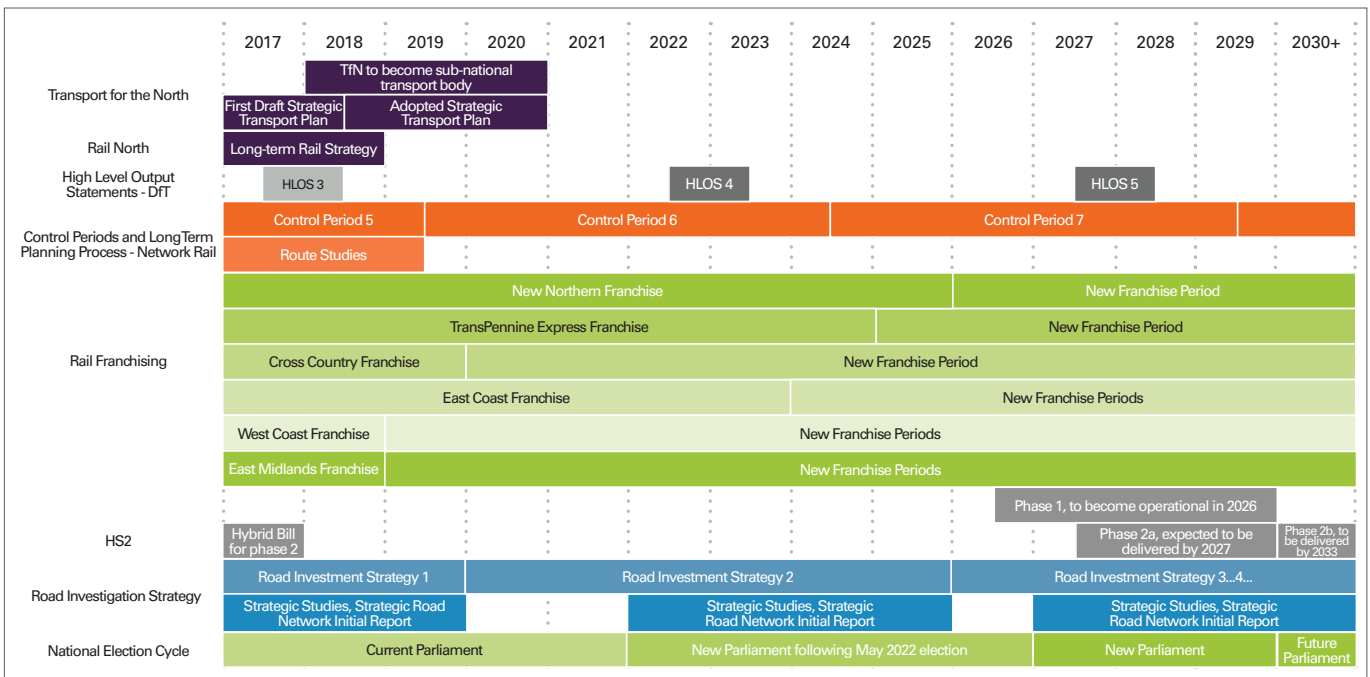
Figure 1.1 -Wider Strategy & Policy Drivers influencing this Transport Strategy Refresh

The process of refreshing the Transport Strategy is shown in Figure 1.2. It builds on the previously agreed Transport Strategy and reflects changes to national, regional and local policy. It also reflects an update to the evidence base which describes how SCR has changed since 2011 and how we plan to continue to change in the future.

Figure 1.2 - Transport Strategy refresh process

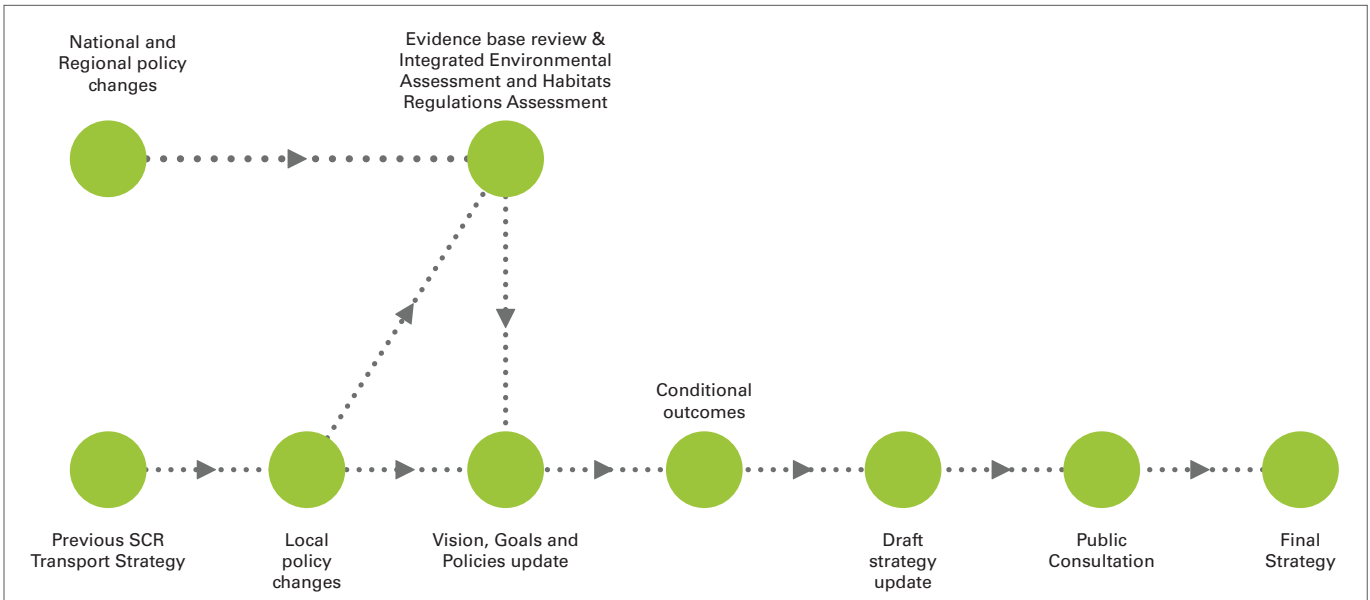## 1.3   THE ECONOMIC GEOGRAPHY OF OUR CITY REGION

The goals and policies of this strategy apply to South Yorkshire as part of its LTP. Our economic geography is wider than South Yorkshire, and therefore, the measures of success in this strategy cover the wider SCR, which functions as a coherent economic area with strong economic linkages and travel to work patterns. Figure 1.3 shows the South Yorkshire and SCR boundaries. The influence and benefits of this strategy also extend further as part of the Northern Powerhouse and National Infrastructure Programmes. The strategy includes interventions that will benefit the economies of our neighbouring Combined Authority areas and UK plc.

South Yorkshire shares strategic links with its neighbouring counties and we recognise that Local Authority districts are distinguished by boundaries but should not present barriers to economic growth. Nottinghamshire County Council and Derbyshire County Council are aware of this Strategy and our proposed goals and policies. We are actively seeking their input through this consultation.

Nottinghamshire County Council and Derbyshire County Council also have their own LTPs, and therefore there is a degree of geographical overlap between all three regional LTPs. We will work in a coordinated way to bring forward schemes and programmes that benefit businesses and communities, and seek opportunities to strengthen linkages and jointly invest.
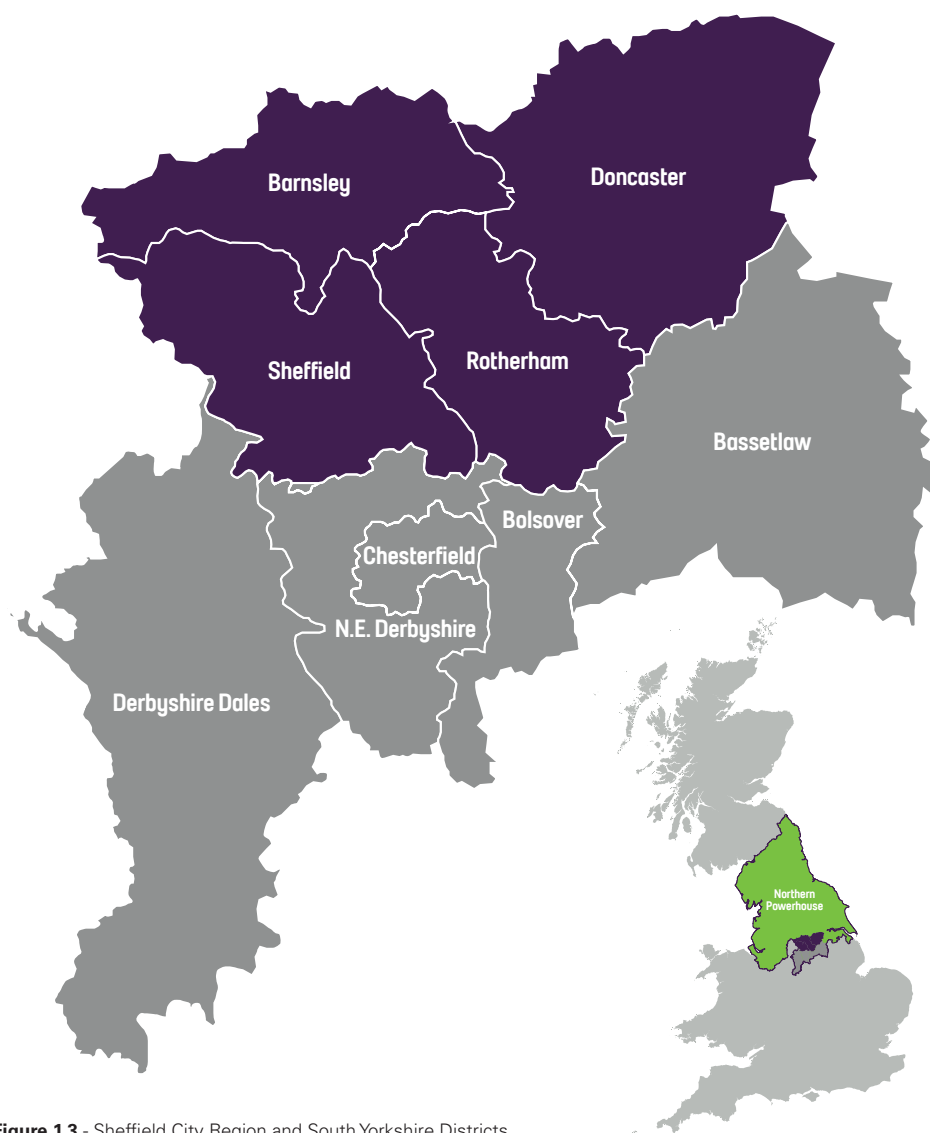

Figure 1.3 - Sheffield City Region and South Yorkshire Districts

1.4   OUR TRANSPORT PROSPECTUS

In May 2017 we published our Transport Prospectus as the first stage of refreshing the Transport Strategy. The purpose of the Prospectus is to:

- highlight the fundamental role that transport will play in delivering our plans for economic growth;

- reaffirm our steadfast commitment to supporting national transport infrastructure programmes that benefit our City Region;

- confirm our ambitions for improved connectivity to the wider North, as a core part of the Northern Powerhouse; and

- set out priorities for improving our City Region's transport network through investment and devolution, building on our successful Infrastructure Fund programme.

This Transport Strategy document builds on the priorities that are stated in the Transport Prospectus and provides overarching goals, policies and conditional outcomes for our transport system.

1.5   STRUCTURE OF THIS TRANSPORT STRATEGY

This Transport Strategy is structured as follows:

- Chapter 2 provides the **evidence base** for the Strategy, which is built upon existing data;

- Chapter 3 sets out our **vision** for the future transport provision in our City Region;

- Chapter 4 sets **our goals**;

- Chapter 5 explains **our policies** and how we will seek to achieve them;

- Chapter 6 describes how we will **deliver** our Transport Strategy.

2.0   SCR TO 2040 – THE EVIDENCE BASE

2.1   INTRODUCTION

This evidence base provides the foundation for the Transport Strategy; it informs us of the current challenges, opportunities, strengths and weaknesses in our City Region, and how they may change in the future.

A significant amount of work has been undertaken since the 2011 Transport Strategy through various studies. The Transport Strategy is informed by the comprehensive evidence base gathered from various data sources such as national and regional strategies set out by Highways England, Network Rail and Transport for the North, our Local Plans, the SCR Inclusive Industrial Strategy and Integrated Infrastructure Plan (SCRIIP), existing transport strategy evidence base and open source datasets as illustrated in Figure 2.1 and identified in the subsequent sections. We have therefore drawn this evidence base from these sources and have analysed global trends to identify those which are likely to be important to our City Region to 2040.
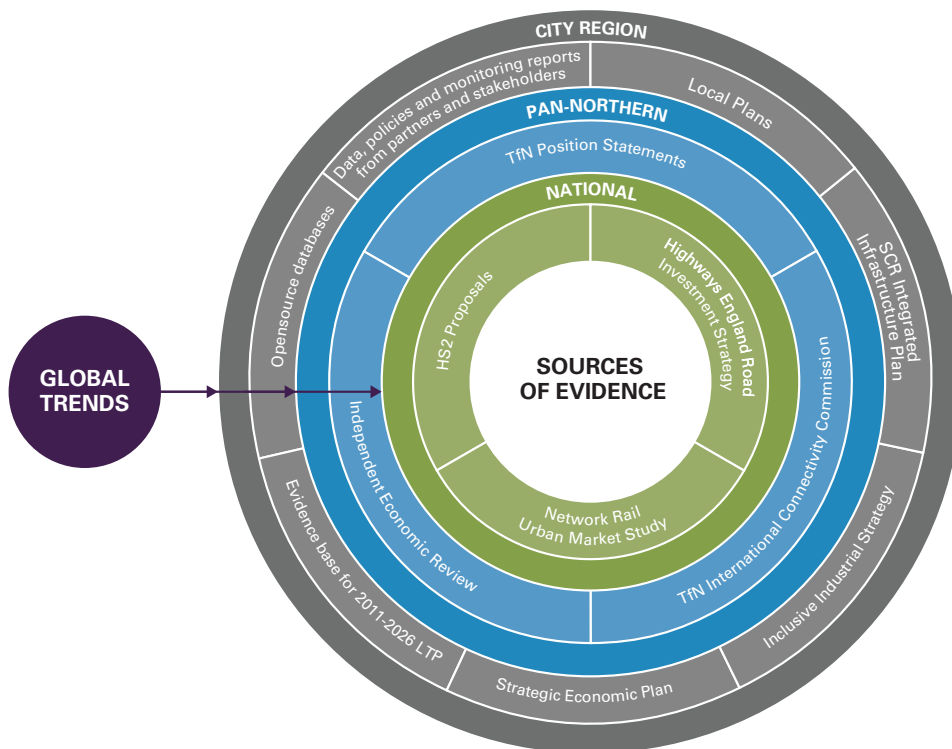

Figure 2.1 - Evidence base

We have structured these trends under the 'STEEP framework', which is commonly used to evaluate external factors and covers social, technological, economic, environmental and political influences (Figure 2.2). Supporting economic growth is our central objective, and therefore the Economy theme is structured first.
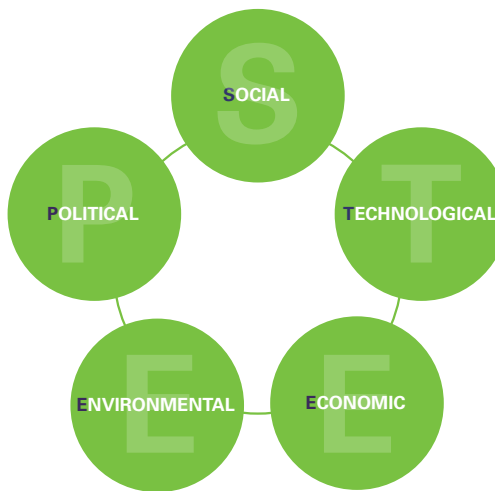
Figure 2.2 - STEEP framework

2.2 ECONOMY

2.2.1 PEOPLE, JOBS AND PRODUCTIVITY

Our City Region is home to 1.8 million people, providing 842,000 jobs and an annual Gross Value Added (GVA) of over £30bn; GVA is the measure of the value of goods and services produced in an area. Figure 2.3 shows that our City Region is performing well with the actual GVA growth ahead of the growth targets in our 2014 Strategic Economic Plan (SEP). This has triggered a refresh of the SEP through the SCR Inclusive Industrial Strategy to be proactive in setting more ambitious targets for economic growth in our City Region.
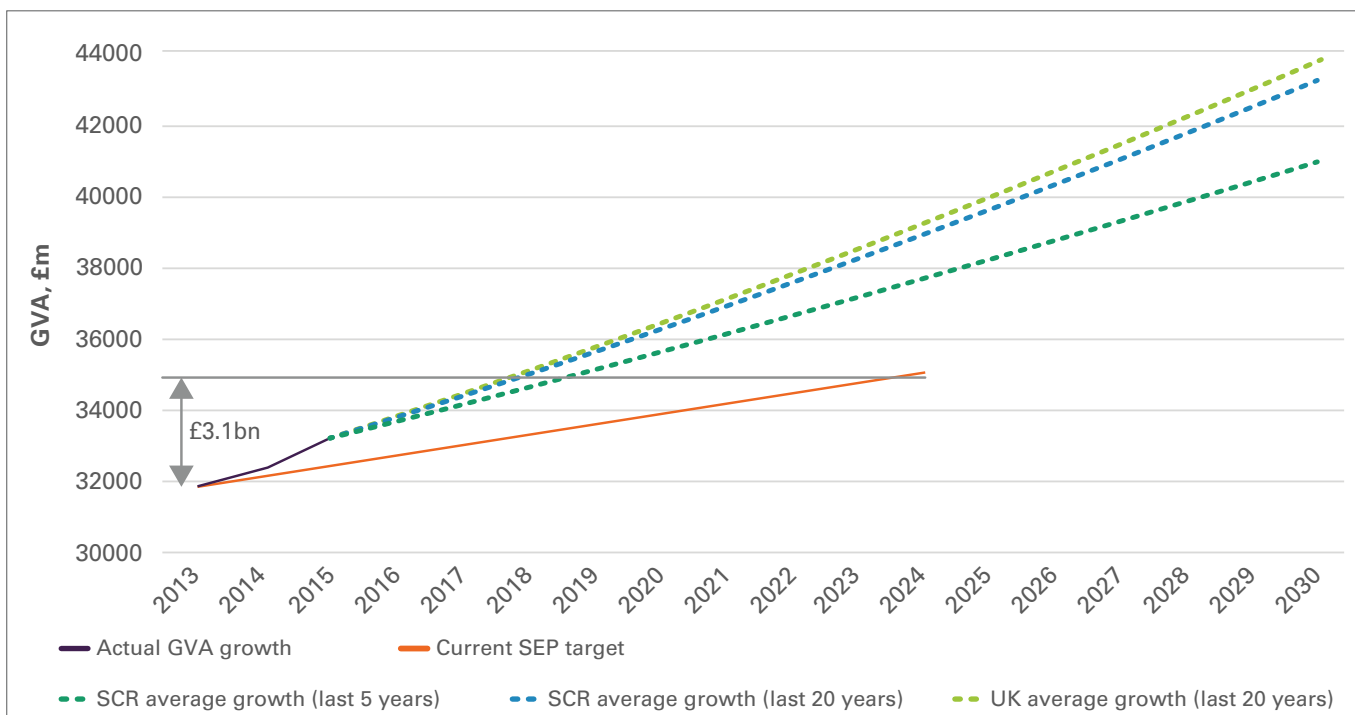
Figure 2.3 - Actual GVA Growth in SCR vs. SEP target[1]

Despite good recent performance in actual GVA growth, GVA per person remains low relative to our peers and the wider UK (see Figure 2.4), and our City Region is ranked 36th out of 39 LEP areas in England for GVA per person[2]. The GVA per head of population in SCR in 2015 was £17,984 compared to £21,341 per head for Leeds City Region (LCR) and £21,626 per head for Greater Manchester. We must focus on increasing highly skilled jobs to meet the productivity levels of other LEPs. This presents an economic challenge to match the right people with the right jobs, which can be achieved through making our built-up areas denser and through improved connectivity as people travel further to access specific employment and training opportunities.
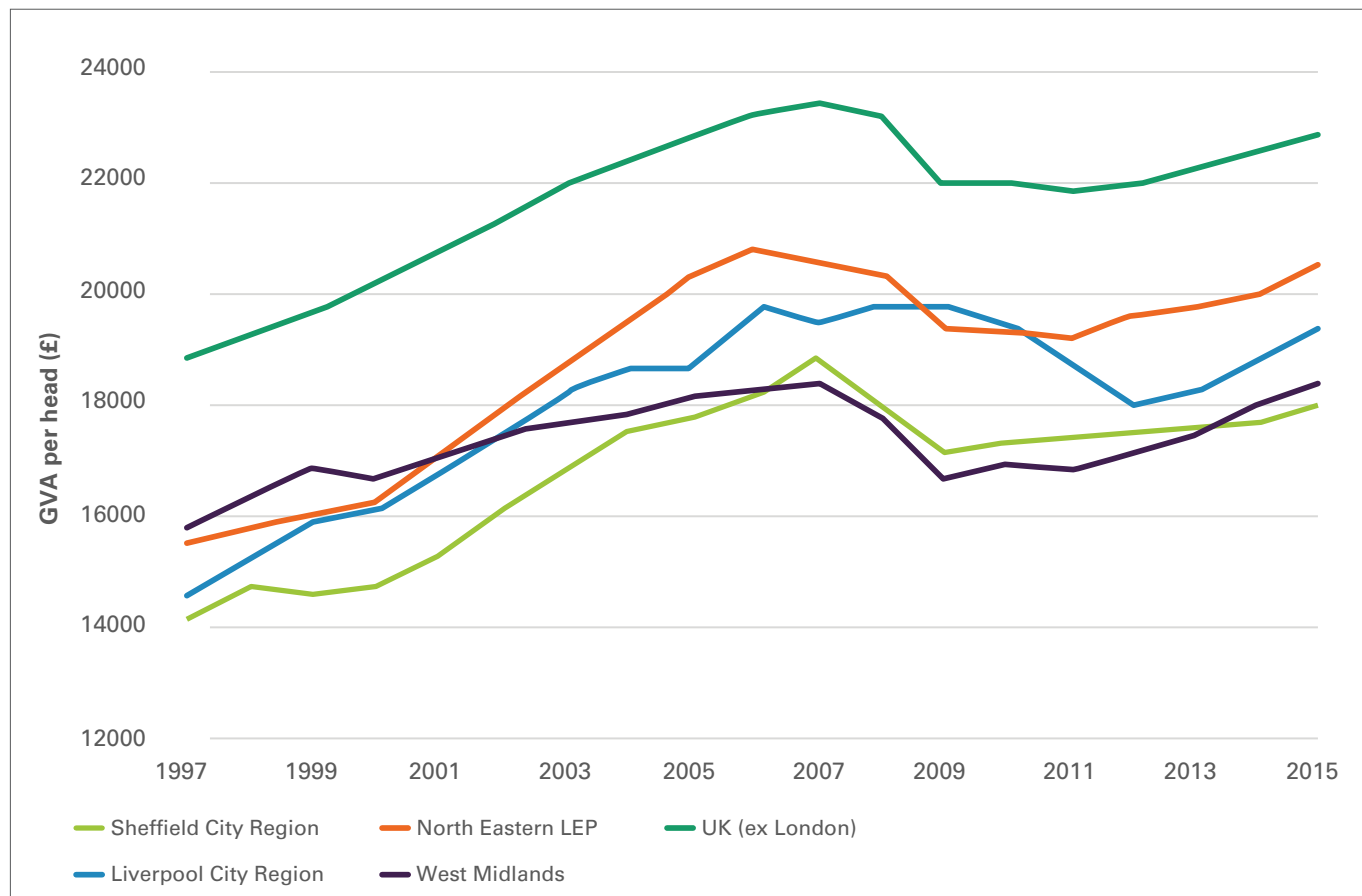
Figure 2.4 - GVA per head[3]

2.2.2   HOUSING

Our population is forecast to grow by 11%[4] between 2011 and 2039. However, Figure 2.5 shows that growth in housing is below target and despite there being a number of contributing factors, transport infrastructure plays a significant role in terms of unlocking new development sites. Predicted trends in housing and population growth (Figure 2.6 and Figure 2.7) suggest that the average household size will reduce and population growth will continue to be positive. Therefore, delivering more houses remains a priority to support forecast growth, and to meet the demands of an ageing population and the changes in the way we live.

	2011-12	2012-13	2013-14	2014-15	2015-16
Total number of new dwellings	3,550	2,880	3,290	3,550	3,880
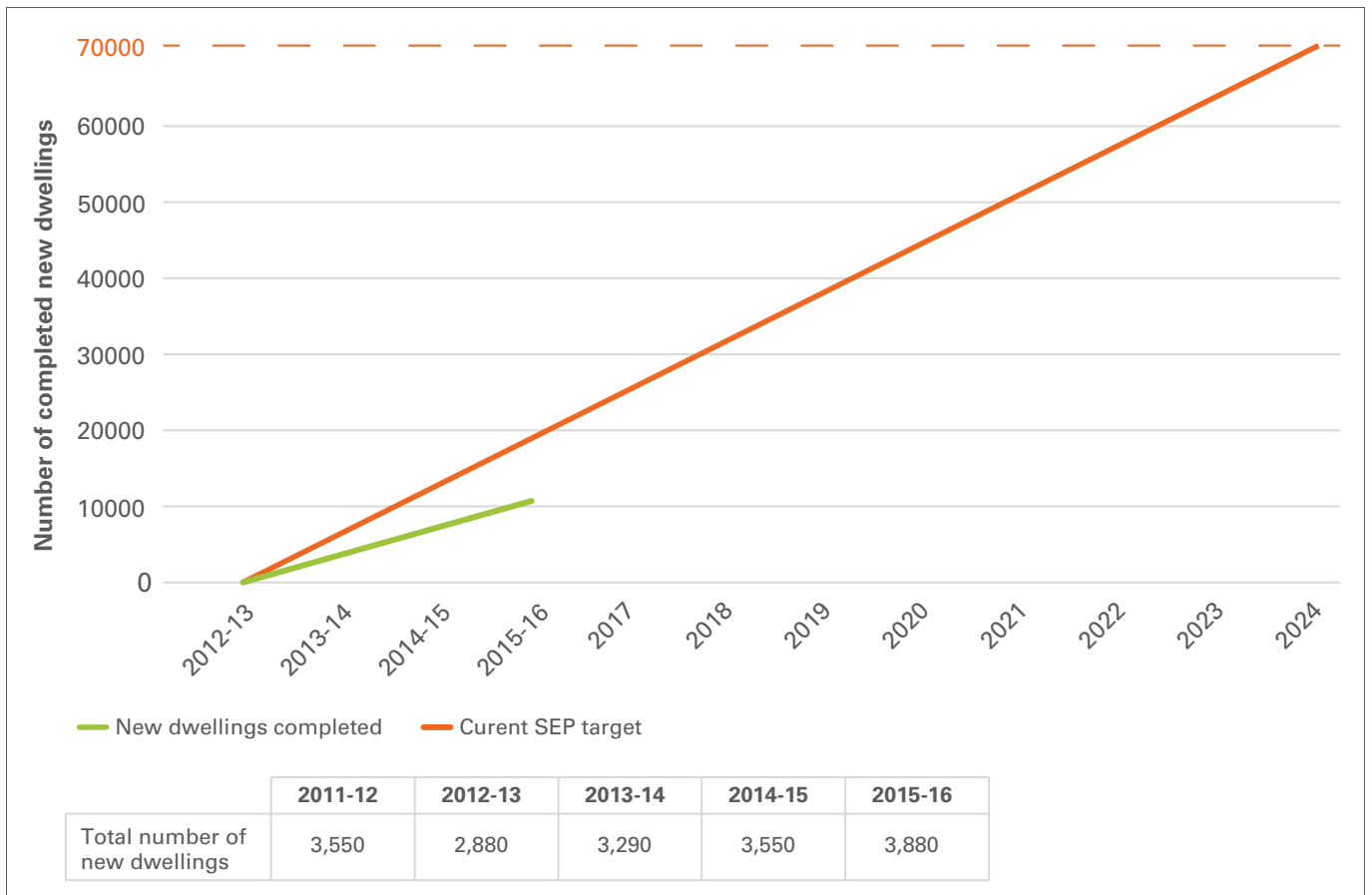
Figure 2.5 - Number of dwellings completed across SCR vs. SEP target[3]

Figure 2.6 - Average household size projection[5]
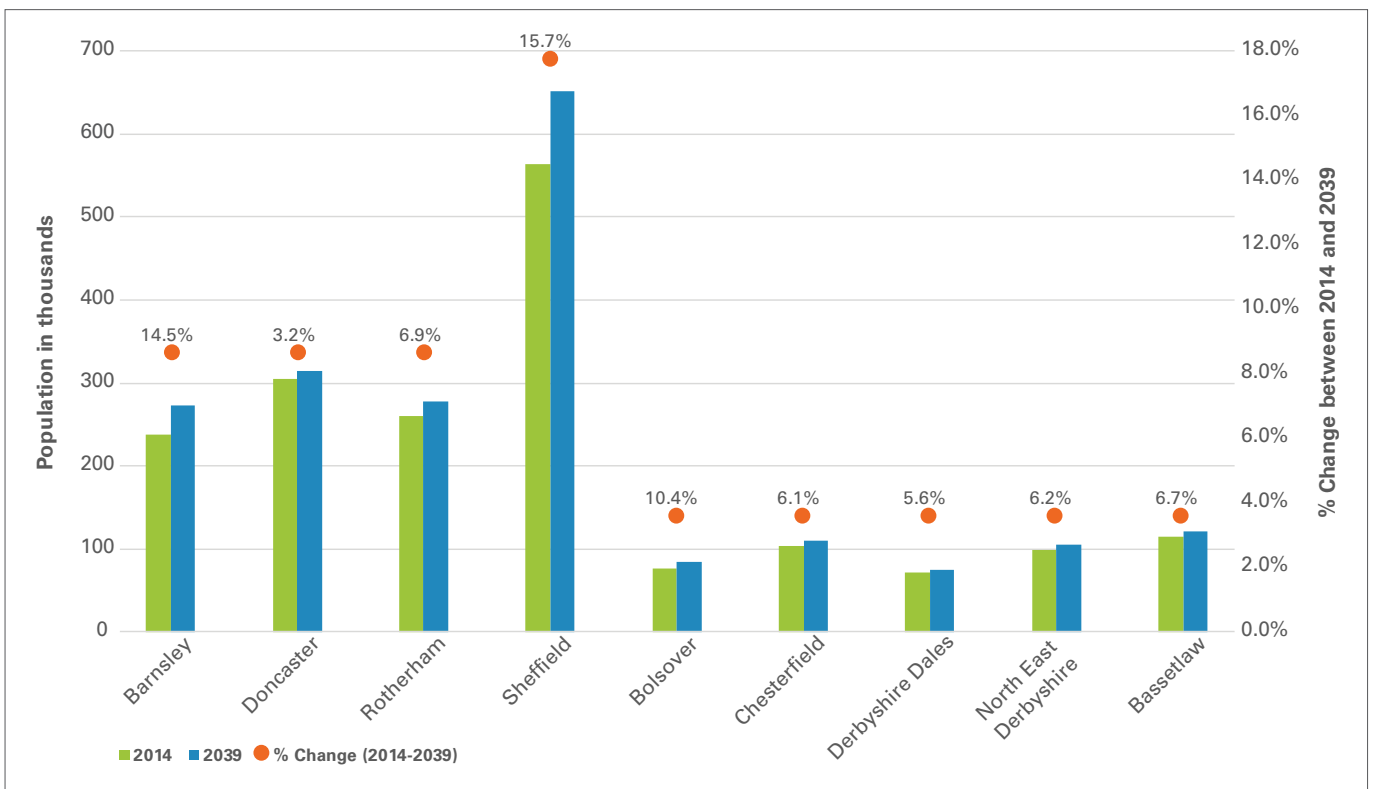
Figure 2.7 - Projected Population Growth between 2014 and 2039[6]

[5]Table 427: Change in average household size, local authority districts and England, 2014- 2039 (Department for Communities and Local Government, 2012)

[6]Table 2: 2014-based Subnational Population Projections for Local Authorities and Higher Administrative Areas in England (Office for National Statistics, 2016)

2.2.3 AGEING POPULATION

Along with an overall growth in population, our City Region is forecast to experience an ageing population; over the next 25 years the old age dependency ratio (people of pensionable age per thousand people of working age) will increase by 19%[7]. Figure 2.8 shows that between 2014 and 2039 the number of children aged 0-5 is forecast to remain constant in our City Region, but population aged 65+ will increase to 0.35 million. These demographic changes will have implications for transport as older people tend to have different travel patterns and travel needs to younger generations, such as travelling during off-peak periods for purposes other than work, and generally being less digitally connected[8].

Figure 2.8 - Population pyramid for SCR 2014 and 2039 forecast comparison[9]

[7]National Population Projections: 2014-based Statistical Bulletin (Office for National Statistics, 2016)

[8]Communications Market Report (Ofcom, 2016)

[9]Population projections - local authority based by single year of age (Office for National Statistics, 2016)

2.2.4   URBANISATION

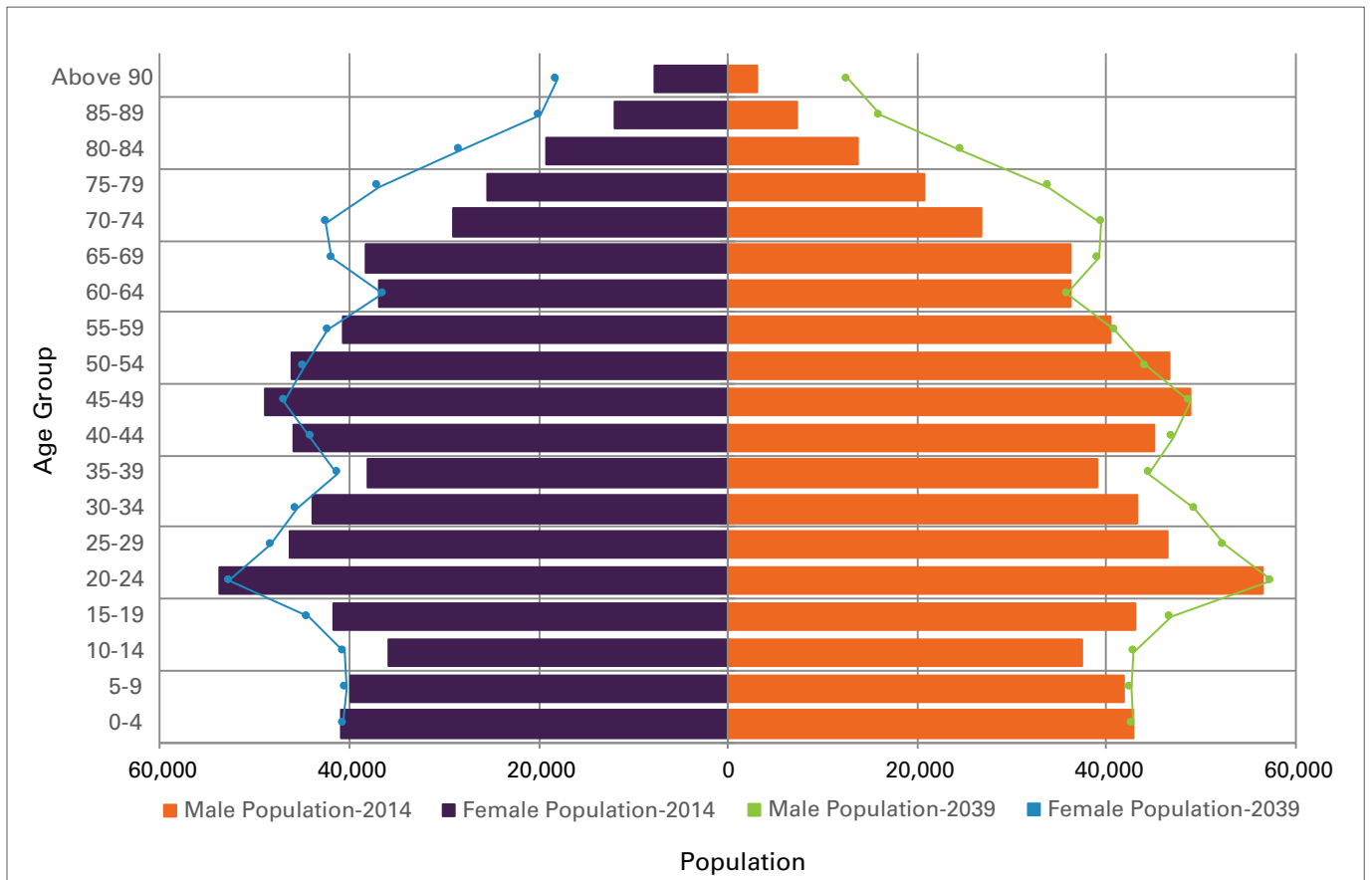Figure 2.9 shows the population and employment distribution across our City Region. 75% of our residents live in the four main urban areas of Sheffield, Doncaster, Rotherham and Barnsley. Between 2001 and 2011, the population of each of these urban areas grew by more than 10,000 people, except Rotherham[10]. Although the spatial distribution of employment shows a similar pattern to population, Figure 2.10 shows that in reality people travel throughout our City Region to access jobs, and this puts pressure on the existing transport system.

Analysis of the Census Journey to Work data shows that the majority of SCR's residents (75%) commute within the City Region boundaries. The inflow of commuter trips to SCR is low compared to the outflow. The inbound commuter flow to SCR from Greater Manchester accounts for 27% of movements between the two City Regions, with 73% of the movements being from SCR to Greater Manchester. A similar pattern is observed for movements between SCR and LCR, with 35% of the movements being inbound (i.e. from LCR to SCR), as opposed to 65% being outbound (from SCR to LCR).

As our population and employment grows, the transport system will need to accommodate further demand in order to match the right people with the right jobs, and the level of additional demand will depend on where within our City Region growth occurs.
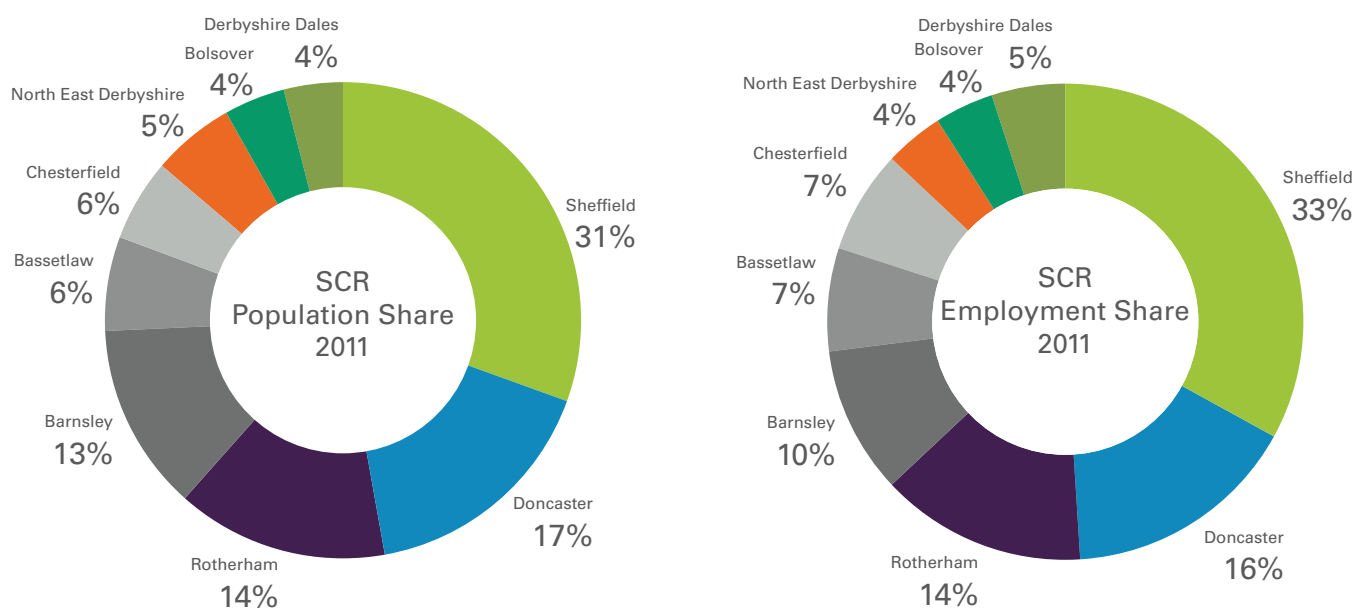
Figure 2.9 - Population and employment distribution across SCR Districts (2011 Census)[11]

[10]Usual Resident Population, Office for National Statistics (Census, 2011)

[11]Census data 2011 (Office for National Statistics)

LEEDS CITY REGION

31.7
17.9

Barnsley

1.7 | 3.1

3.3
8.2

Doncaster

4.0 | 2.4

3.9
8.3

7.4 | 5.6

3.3
2.2

22.5 | 11.7

Sheffield

Rotherham

GREATER MANCHESTER   4.5 | 1.7

1.7 | 2.1

1.4
0.9

8.7
3.6

3.1
3.2

1.8 | 0.8

Bassetlaw

3.3 | 1.6

Chesterfield

1.0 | 1.6

Bolsover

8.3
4.4

N.E. Derbyshire

Derbyshire Dales

1.5 | 0.7

WEST MIDLANDS

Figure 2.10 - Travel to work movements within and beyond SCR by all modes (in thousands)

2.2.5   IMPACT OF GROWTH ON TRANSPORT

There is an ever increasing need for greater transport network connectivity and capacity as a result of, and enabler to, growth. This is the case intra-regionally (i.e. within the City Region), and with our economic growth being dependent on matching the right people with the right jobs, connectivity on an inter-regional scale (i.e. between City Regions) will become increasingly important.

The SCRIIP identified the top 20 highway corridors forecast to experience increased delay resulting from population and economic growth by 2025, which are shown in Figure 2.11.

On the rail network, passengers in excess of capacity is a relative measure of train crowding and shows the proportion of standard class passengers that are above a nominal capacity level (allowing for both seated and standing passengers) on services at their busiest point. Trains arriving and departing from Sheffield station in the morning peak period were crowded over capacity by 1.6% in 2015 and the station is ranked fifth worst in terms of overcrowding, when compared to other major cities in the country[12].

The Public Performance Measure (PPM) combines figures for punctuality and reliability of rail services and the PPM scores for r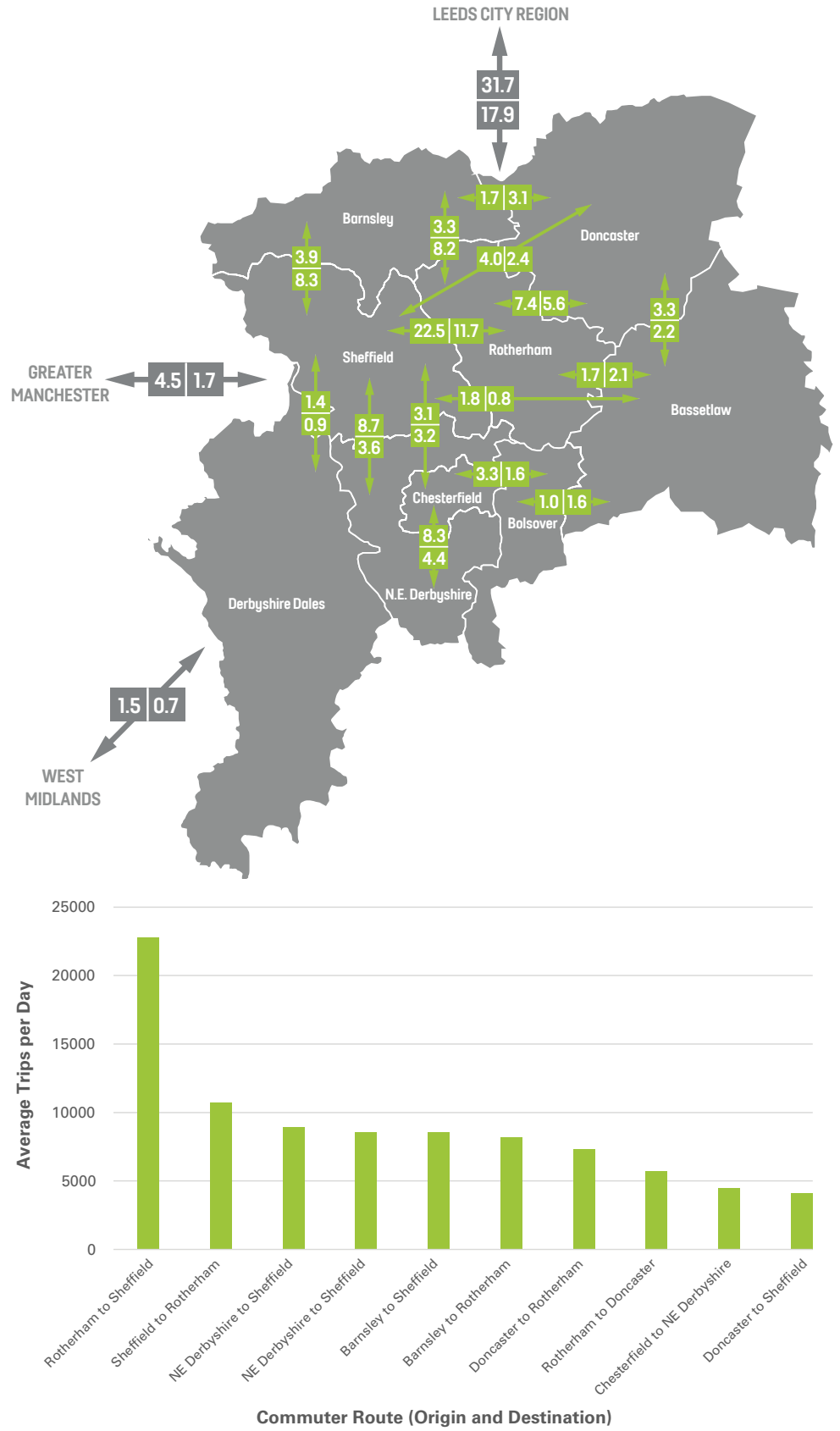egional services is 90.2% and 92.1% of local services[13]. The average delay experienced by rail passengers for the delayed services in 2015 is 15 minutes[14] for regional (Cross Country) and local services (Northern).

With forecast growth in both employment and housing, without intervention the congestion experienced on our road and rail networks will increase, and more commuters will be delayed on their journeys.
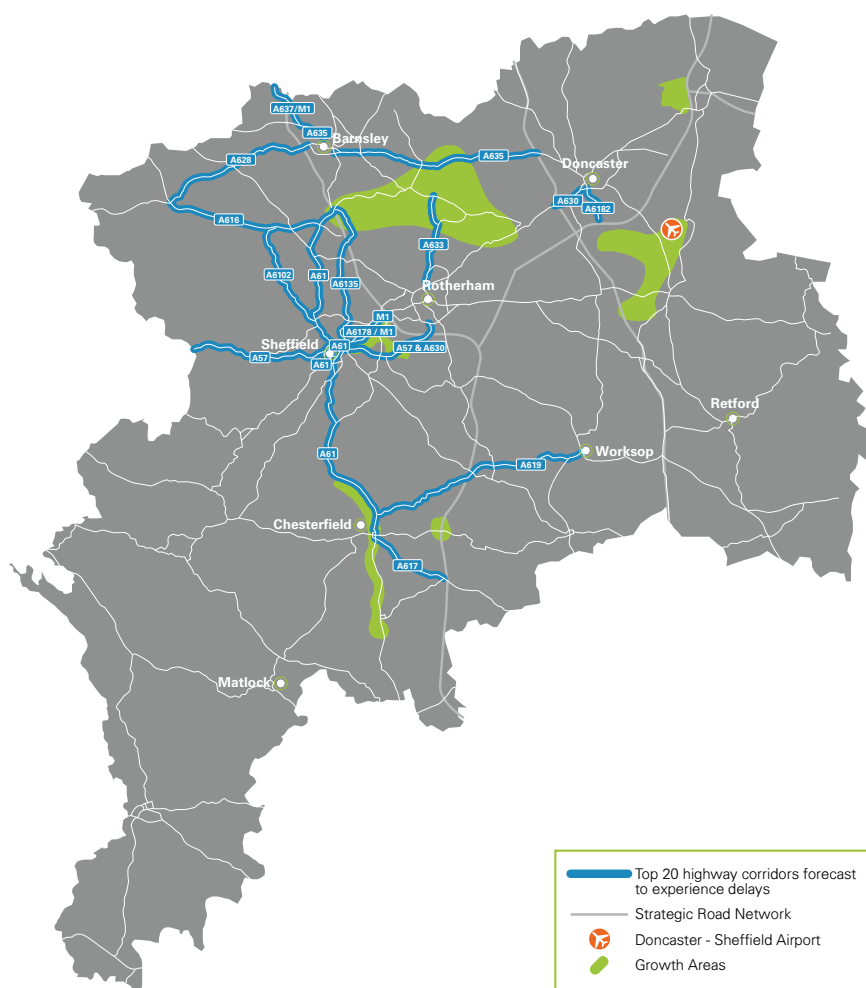
Figure 2.11 - Top 20 corridors forecast to experience delay by 2025

[12]Table RAI0214, Peak crowding on a typical autumn weekday by city and train operator (Department for Transport statistics, 2015)

[13]The public performance measure (PPM) shows the percentage of trains which arrive at their terminating station within 5 minutes (for London & South East and regional services) or 10 minutes (for long distance services).

[14]National Rail Passenger Survey (Transport Focus, 2015)

2.2.6   TRAVEL TO WORK MODE SHARE

Figure 2.12 shows the travel to work mode share in our City Region in 2011. 71% of our residents travelled to work by car, and this trend has actually increased since 2001 (as shown in Figure 2.13) which is contrary to the general UK trend of decreasing car use. This trend supports the need for investment in sustainable transport to reverse this trend and encourage mode shift from car.

Public transport has a 12% mode share in our City Region, which has reduced since 2001. Cycle mode share remained fairly constant between 2001-2011 at 1.5%, and is lower than other northern LEP areas.
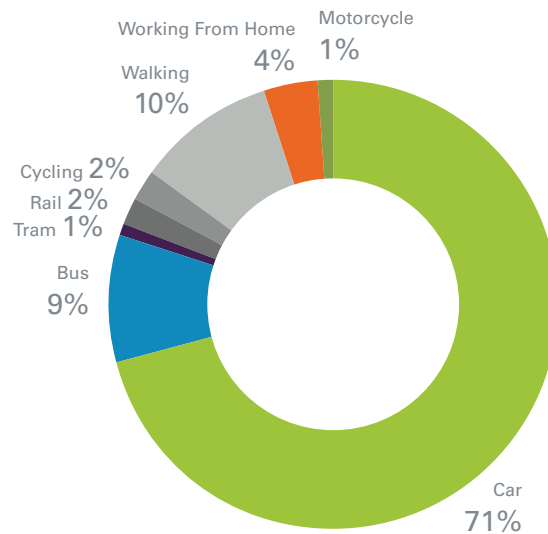
Figure 2.12 - Travel to work mode share for SCR[15]
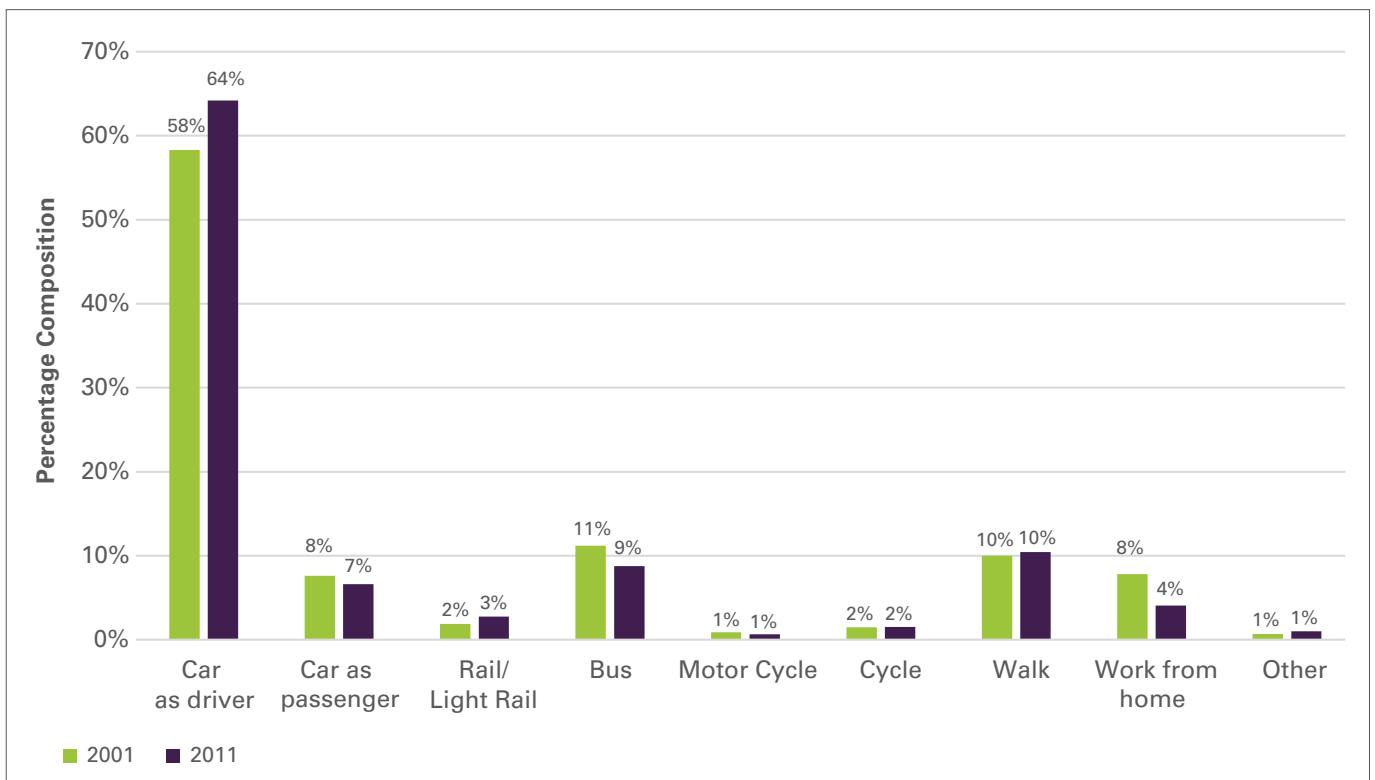
Figure 2.13 - SCR journey to work mode share comparison[16]

[15]Census data 2011 (Office for National Statistics)

[16]Census Journey to Work Data 2001 and 2011 (Office for National Statistics)

CAR

The comparison chart (Figure 2.14) shows that our City Region has a higher car mode share than other LEP areas in the North. This reliance on car travel could have adverse implications on the economy and quality of life, through congestion cost, worsening air quality, increasing carbon emissions and rising obesity levels (due to lack of walking and cycling).

Car
71%
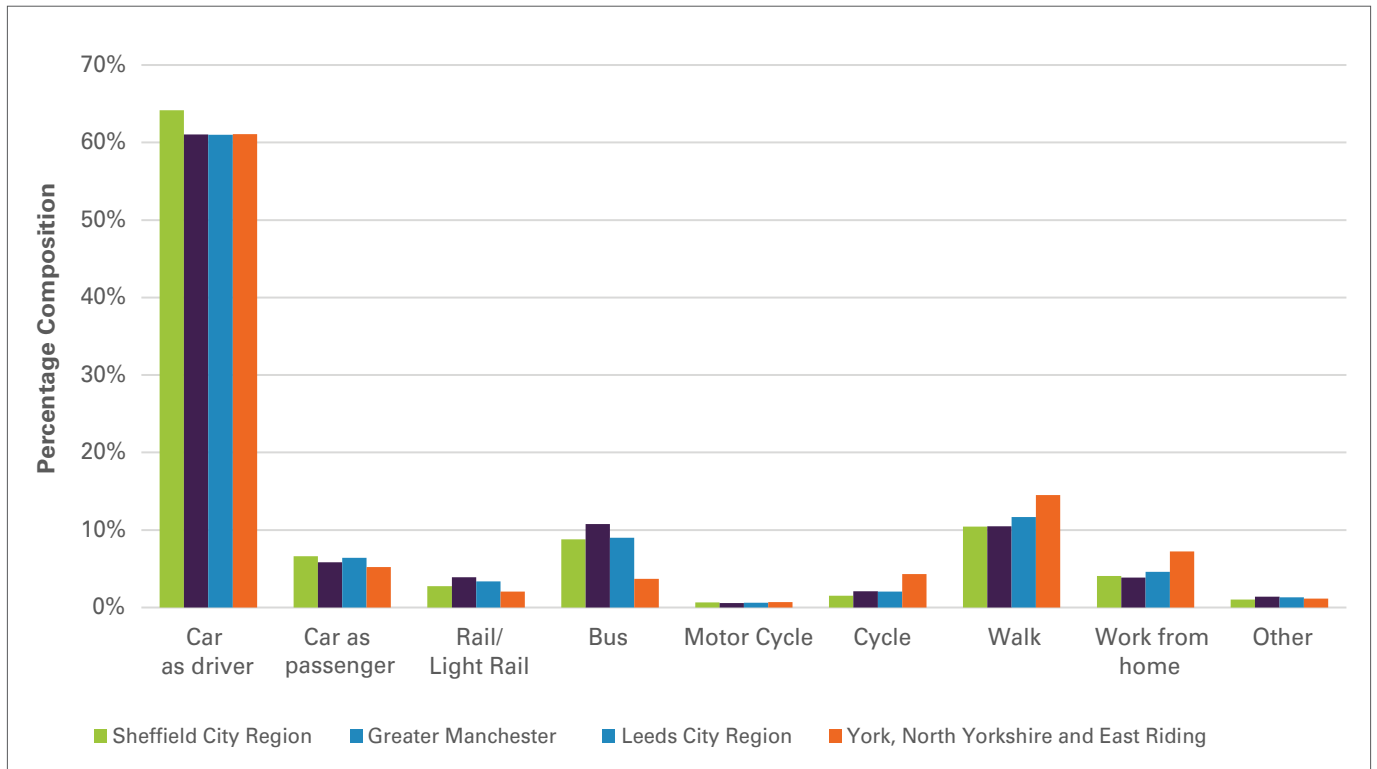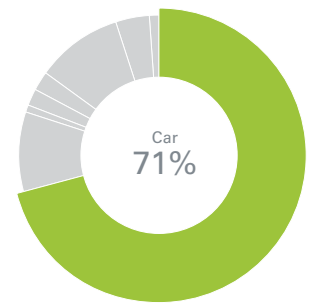
Figure 2.14 - Mode share comparison of SCR with other LEP areas[17]

Bus
9%
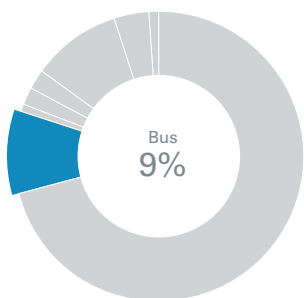
BUS

Since 2008 there has been a general decrease in both Government and local subsidy for bus services (see Figure 2.15), which has resulted in a decrease in the extent of the network due to the limitations it places on the ability to provide tendered bus services. This decrease in subsidy and reduction in network extent coincides with a general reduction in bus use across South Yorkshire (see Figure 2.16). Many social groups rely on bus services as an accessible and affordable mode of transport, and a reduction in funding and use poses a risk to maintaining a sustainable public transport network that engenders inclusive economic growth and presents a viable alternative to car travel.

── South Yorkshire ITA   ── % of National spend
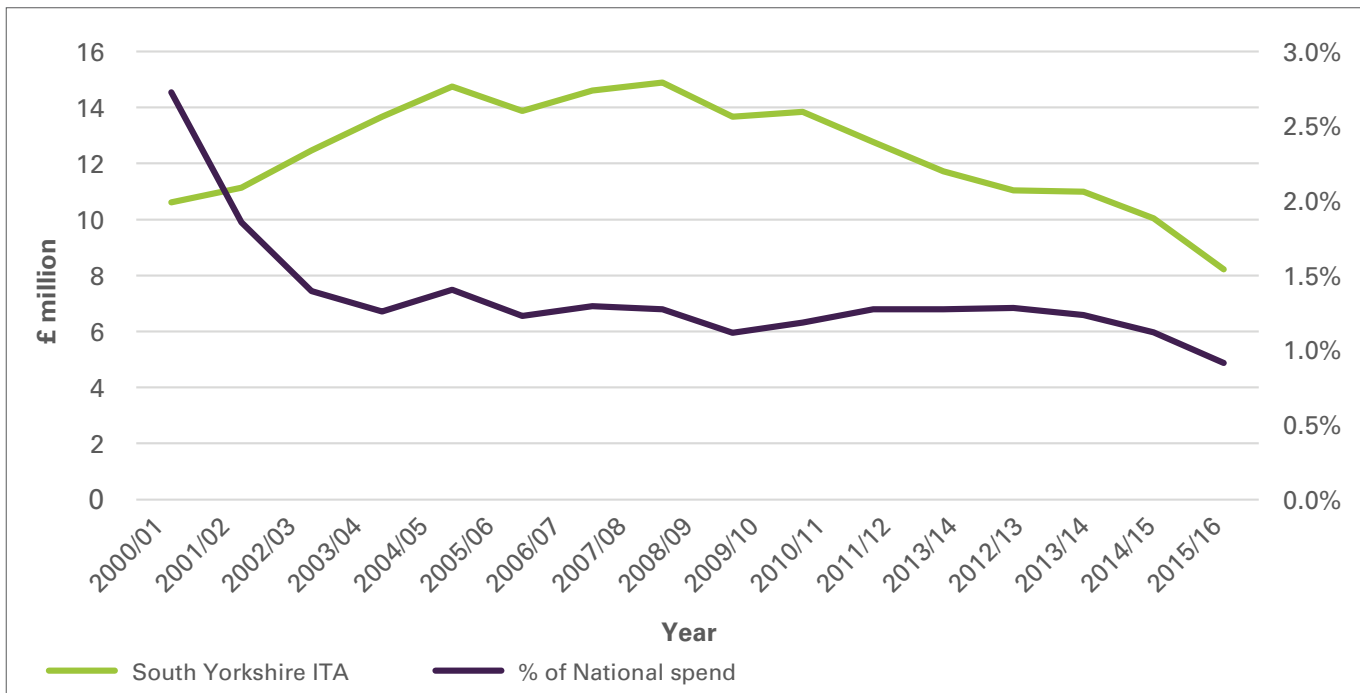
Figure 2.15 - Estimated net support paid by central and local government for local bus services[18]

Figure 2.16 - Change in bus use (patronage)[19]

[18]Table Bus0505b: Estimated net support paid by central and local government (in 2015/16 prices) for local bus services: England, annual from 2000/01 (Department for Transport statistics, 2017)
[19]Bus Patronage data 2003/04 to 2016/17 (SYPTE, 2017)

TRAM

The Supertram light rail system has been a vital part of the transport network in our City Region since it opened in 1994. It is supported by a network of Park & Ride sites at key locations, which support patronage of the network and encourage modal shift away from car use for commuting in to the urban centre of Sheffield. However, in recent years the number of passengers has decreased (see Figure 2.17) as the service has faced planned suspensions to deliver asset renewals – although more recently passenger numbers are recovering and are expected to increase with the introduction of tram train. Further investment of over £230m is needed over the next ten years to bring the network up to standard and secure its ongoing operation[20].
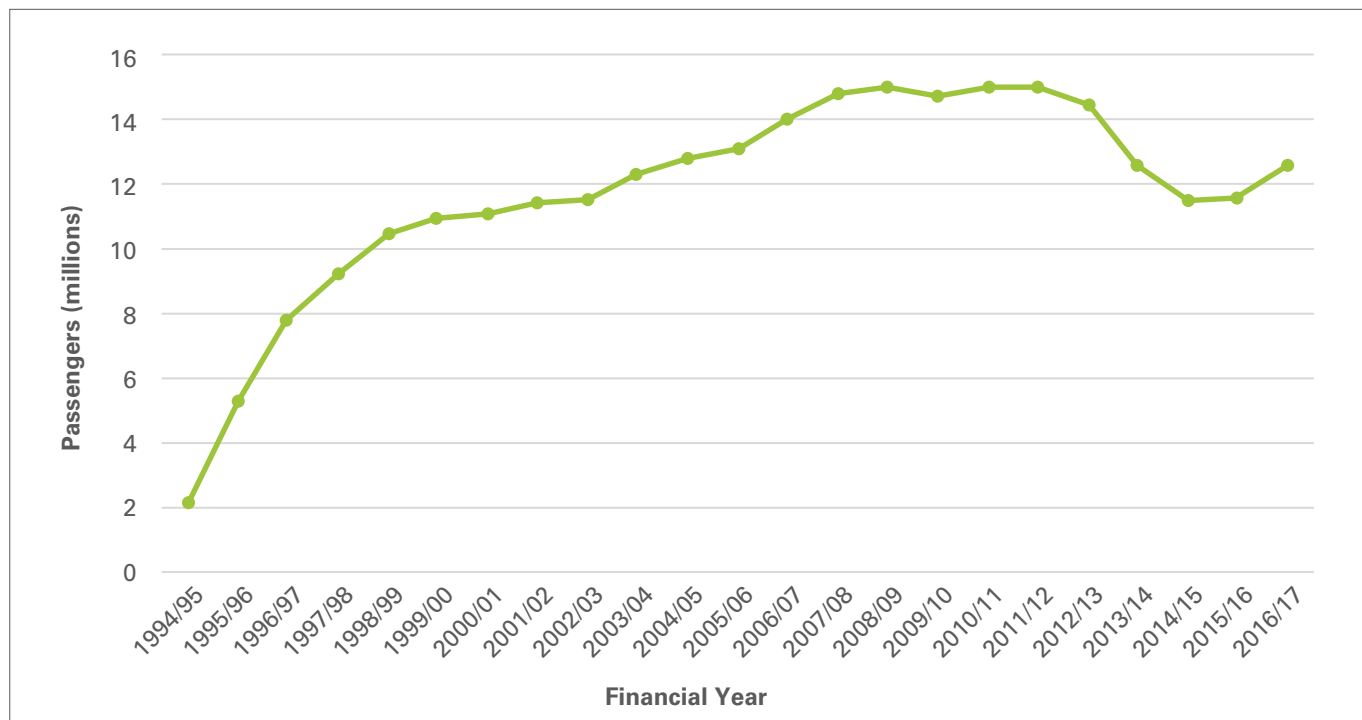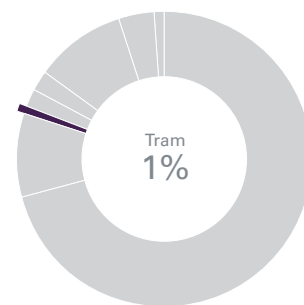
Tram
1%

Figure 2.17 - Change in passenger numbers on the Supertram (SYPTE)
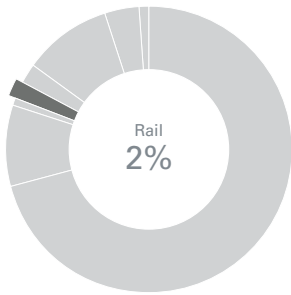
Rail
2%

RAIL

Rail mode share increased between 2001 and 2011. This is indicated by more people using our rail stations (entries & exits) between 2005 and 2016, with seven out of the top ten stations in our City Region recording more than 50% growth (Figure 2.18). With proposed service improvements being delivered through the Northern, TransPennine Express and East Coast franchises, along with a number of rail improvement schemes in the pipeline, including High Speed 2 (HS2) and Northern Powerhouse Rail (NPR), rail use will likely continue to increase in the future.
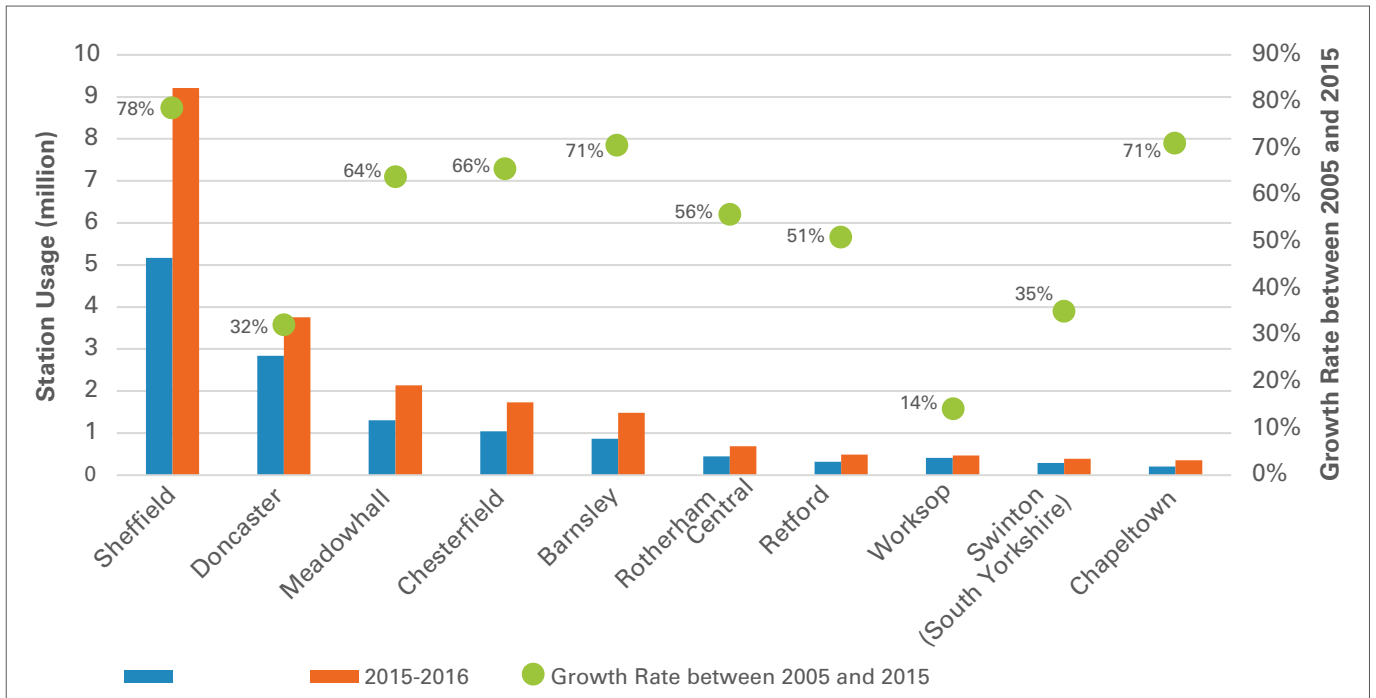
Figure 2.18 - Change in people using rail stations (entries and exits) for the top 10 stations in[21]

[21] Estimates of station usage (Office for Rail and Road, 1997-98 to 2015-16)

WALKING AND CYCLING

We consider walking and cycling to be active modes of transport.

Figure 2.19 presents analysis of the Census journey to work data for South Yorkshire (2011) by mode and trip length. The data shows that although walking is the predominant mode for trips less than 1 km in length, the reliance on car travel for short trips is high. Furthermore, cycle mode share for trips less than 5 km (considered to be the average commuting trip length for cycle trips) is between 2-3%, with car use continuing to dominate.

The dominance of car use over active modes for shorter trips demonstrates the high reliance of commuters on driving to work both within and beyond SCR.

Walking
10%

Cycling
2%
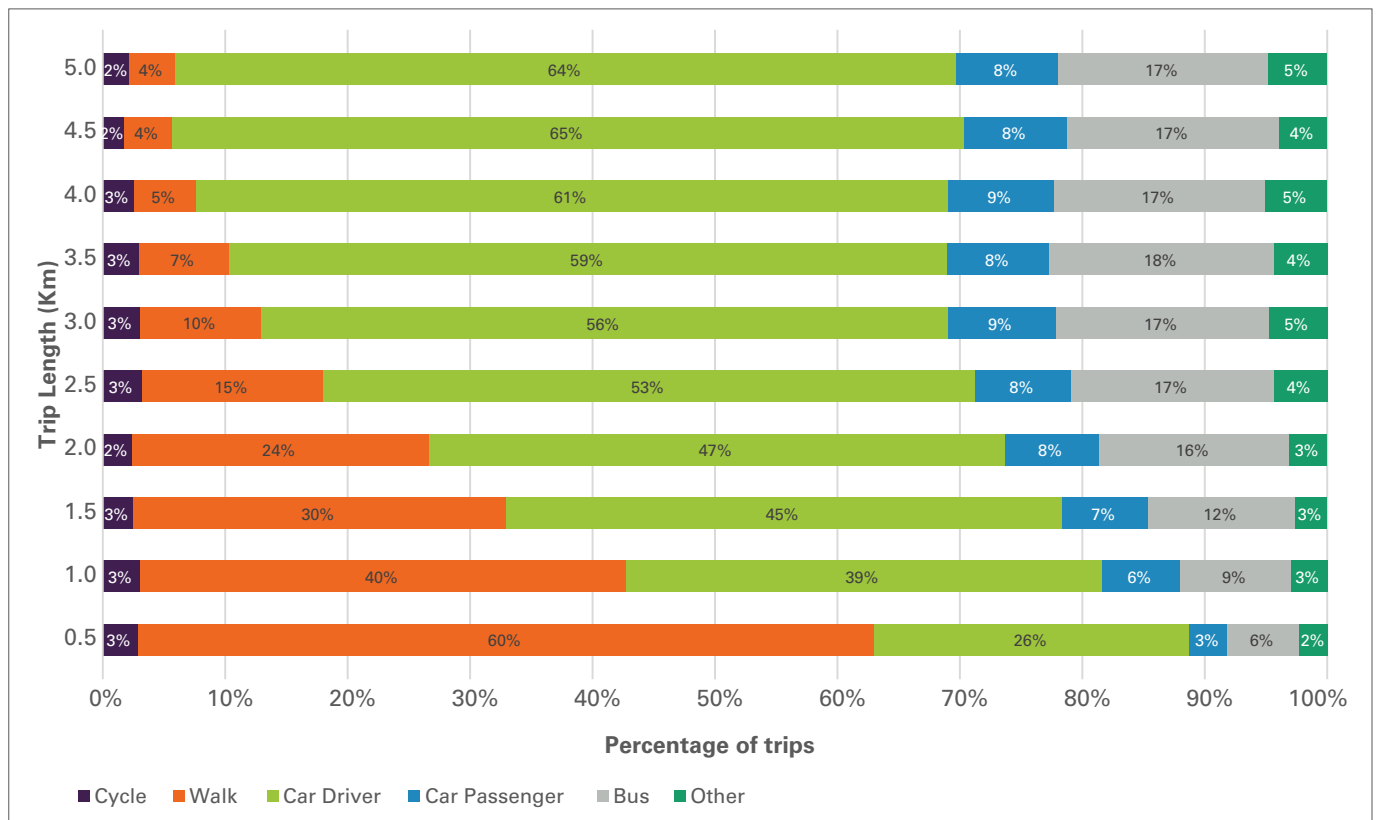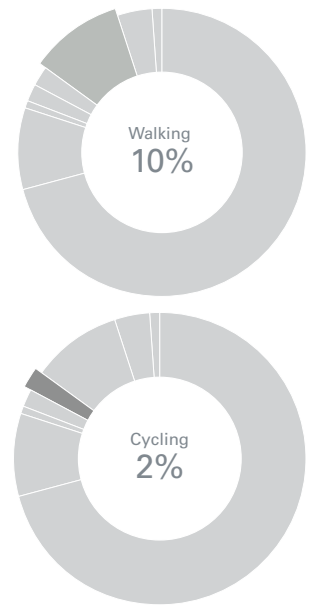
Figure 2.19 - Census journey to work data for South Yorkshire (2011)

Cordon count data is captured across a limited geographical area and time period, and offers a snapshot of cyclist movements into our urban centres. Whilst the accuracy of this is inevitably limited, the data suggests that the number of people cycling has increased by approximately 5% in South Yorkshire between 2011 and 2016 following a general increasing trend over the 11 year period from 2005 (see Figure 2.20).

However, despite a consistent increase in cyclists in Sheffield and Rotherham since 2011, the number of cyclists in Barnsley has decreased. Although Doncaster has 3% more cyclists now than in 2011 based on more recent analysis of cordon data, the analysis suggests that there has been a levelling off in this trend since 2014.

The DfT statistics for the proportion of residents who cycle for any purpose at least once per month by local authority area from 2010/11 to 2014/15[22] show similar trends at the local authority level. However, it is noteworthy that where targeted improvements are provided, there is significant growth in the number of cyclists. A particularly positive example is Blackburn Meadows towpath (Lower Don Valley) where the number of cyclists and pedestrians increased by 157% and 95% respectively, post intervention.[23] Anecdotal evidence from various Local Sustainable Transport Fund (LSTF) schemes like Cycleboost cycle training suggests that the number of people benefitting from such schemes are increasing year on year and targeted interventions are necessary to sustain and encourage mode shift from sedentary modes.
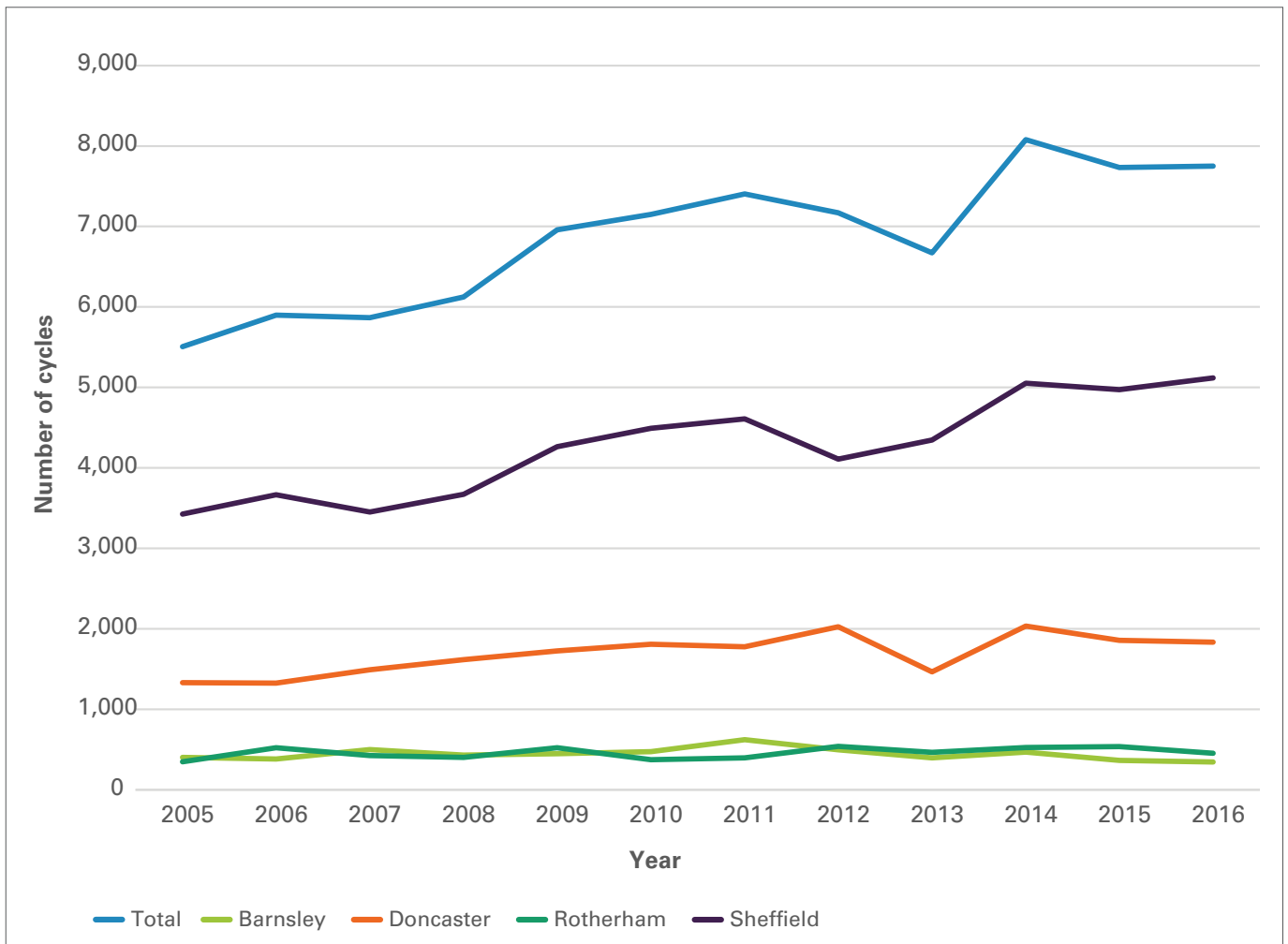
Figure 2.20 - Number of cyclists in South Yorkshire[24]

[22]Table CW0103, Walking and Cycling Statistics (Department for Transport, 2016)

[23]South Yorkshire LSTF Outcomes Monitoring Report (South Yorkshire LSTF Delivery Partners, March 2016)

[24]Annual cordon counts (SYPTE, 2005 to 2016)

2.3   ENVIRONMENT

2.3.1   AIR QUALITY AND DE-CARBONISATION

Our City Region faces significant air quality issues with 29 Air Quality Management Areas (AQMAs) and high levels of carbon emissions around the centre of Sheffield and along the motorways and A Roads. Poor air quality is linked to a variety of health concerns ranging from short term illness to serious diseases and premature death. It will also have an adverse impact on environment.

Across Sheffield there are 51 locations where the European Union's annual average limit value for NO_2 (40 μg/m³) has been exceeded in one or more of the three year period (2010-2012)[25], and a 30% reduction in NO_2 emissions would be needed in order to comply with the limit value. Analysis indicates that road transport is the single most significant contributor to Sheffield's NO_2 emissions at these locations.

To begin to address this issue SCR partners have been working together on a number of initiatives that improve air quality and reduce emissions. This includes the ECO Stars Fleet Recognition Scheme which is now the UK's intervention of choice. From its small beginnings in South Yorkshire ECO Stars is now been delivered across 27 authorities in the UK and 3 municipalities in Europe. It has a total a of 557 members with over 75,000 assessed and awarded a star rating.

The scheme specifically targets commercial vehicles, actively engaging operators at a local level with the specific aim of assisting and encouraging them to sustainable operations. South Yorkshire has a total of 155 members with 12,200 vehicles assessed and awarded a star rating.

SCR partners have also delivered a number of driver training initiatives, investment in clean vehicles and the ground breaking Bus Partnerships in South Yorkshire that have set progressive targets for vehicle investment. These interventions demonstrate our collective commitment to improve the environment, but more work on this is needed as Government's National Air Quality Plan now requires change.

The Government's National Air Quality Plan[26] aims to improve air quality in those cities and towns which make the greatest contribution to the NO_2 problem and to do so in the *shortest time possible*. The Government's approach aims to combine targeted intervention while creating economic opportunities and harnessing technological innovation (e.g. ultra-low emission vehicles; investment in the road network and public transport).

Sheffield has been identified as one of 29 cities that will have a duty to reduce NO_2 below the statutory annual average mean of 40μg/m³. This is an important challenge for Sheffield City Region and by meeting the requirements we will improve the health of people who live and work in our towns and cities.
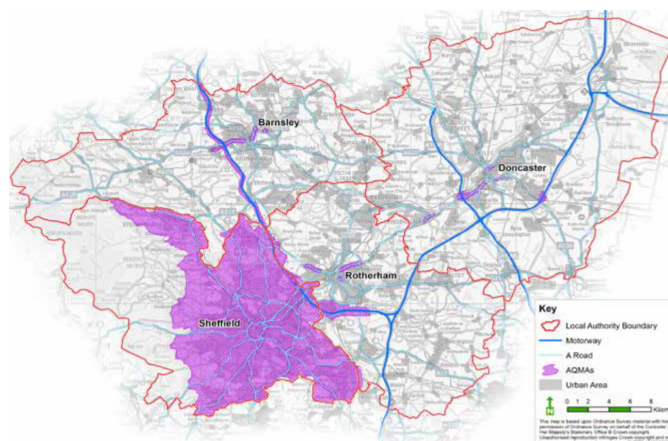
Figure 2.21 - Air Quality Management Areas (AQMAs) in South Yorkshire[27]

[25]Low Emission Zone (LEZ) Feasibility Study Phase 2-Final Report (Sheffield City Council, 2013)
[26]DEFRA (2017) UK plan for tackling roadside nitrogen dioxide concentrations (Defra, 2017)
[27]Low Emission Bus Scheme Application (SYPTE)
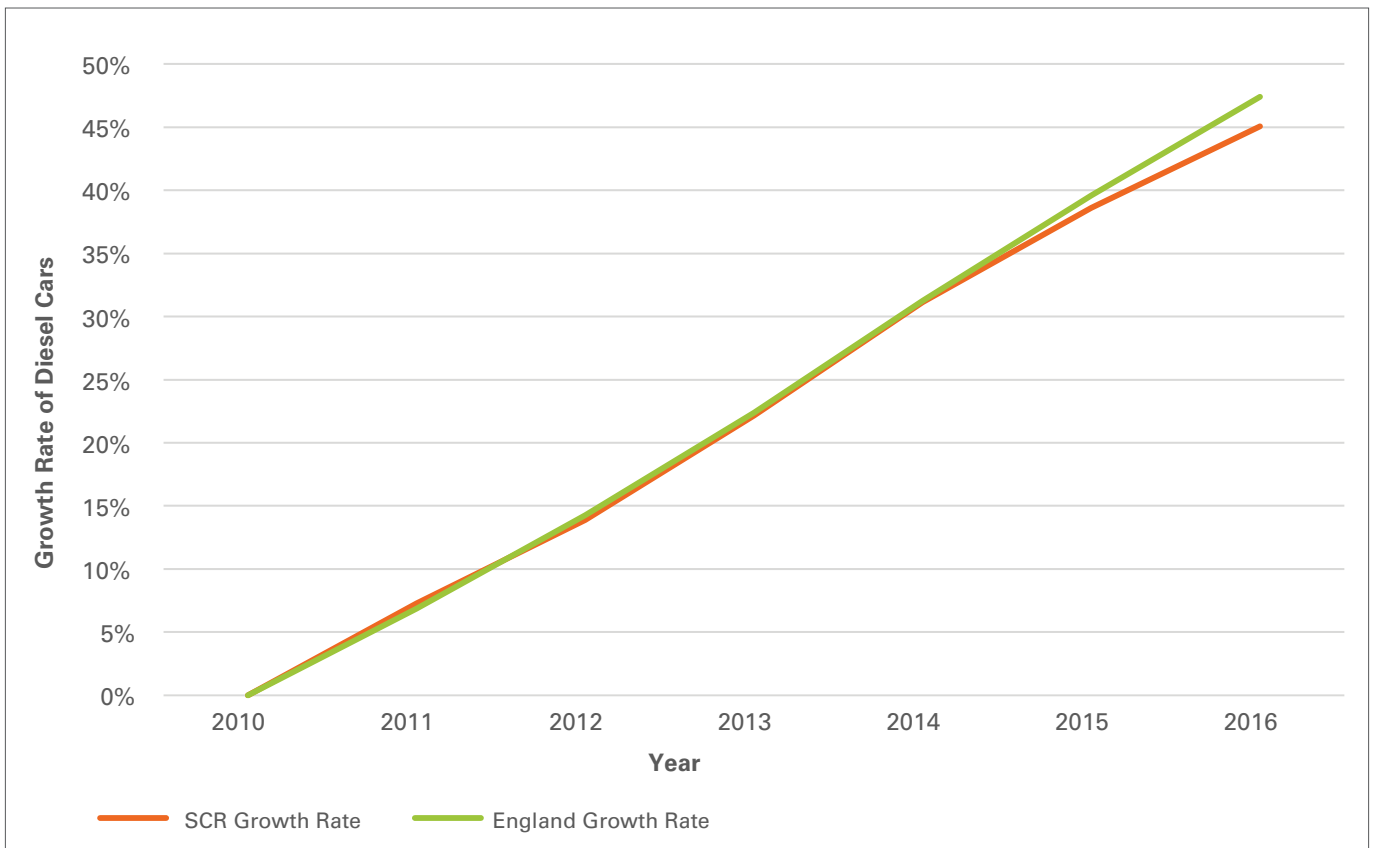
Figure 2.22 - Growth rate of diesel cars[28]

An emerging global transport trend is an increasing uptake of electric vehicles. Advances in battery and other storage technologies, further reductions in costs and improved efficiencies will mean that electrification is increasingly viable. Plans to make electric vehicle charge points more widely available and convenient for motorists were put forward by Government in October 2016 with all new diesel and petrol cars banned by 2040.

In UK the number of newly registered ultra low emission vehicles rose by 250% in just two years, and there has been a steady increase in plug-in vehicles in South Yorkshire since 2012 (see Figure 2.23).

Sheffield City Region is well placed to develop hydrogen refuelling, with a hydrogen refuelling station already in place at ITM Power in Rotherham, which sustainably electrolyses hydrogen from water using wind power. The ability to build on this and expand access to hydrogen as a fuel source is an important opportunity for SCR, both in terms of the reducing emissions from road transport, but also in developing our capability in the research and development of hydrogen refuelling technology – equipping us with skills and technology we can export elsewhere.

[28]Table VEH0105, Licensed vehicles by body type, diesel cars and vans, by upper and lower tier local authority, United Kingdom, annually (Department for Transport statistics, 2010 to 2016)
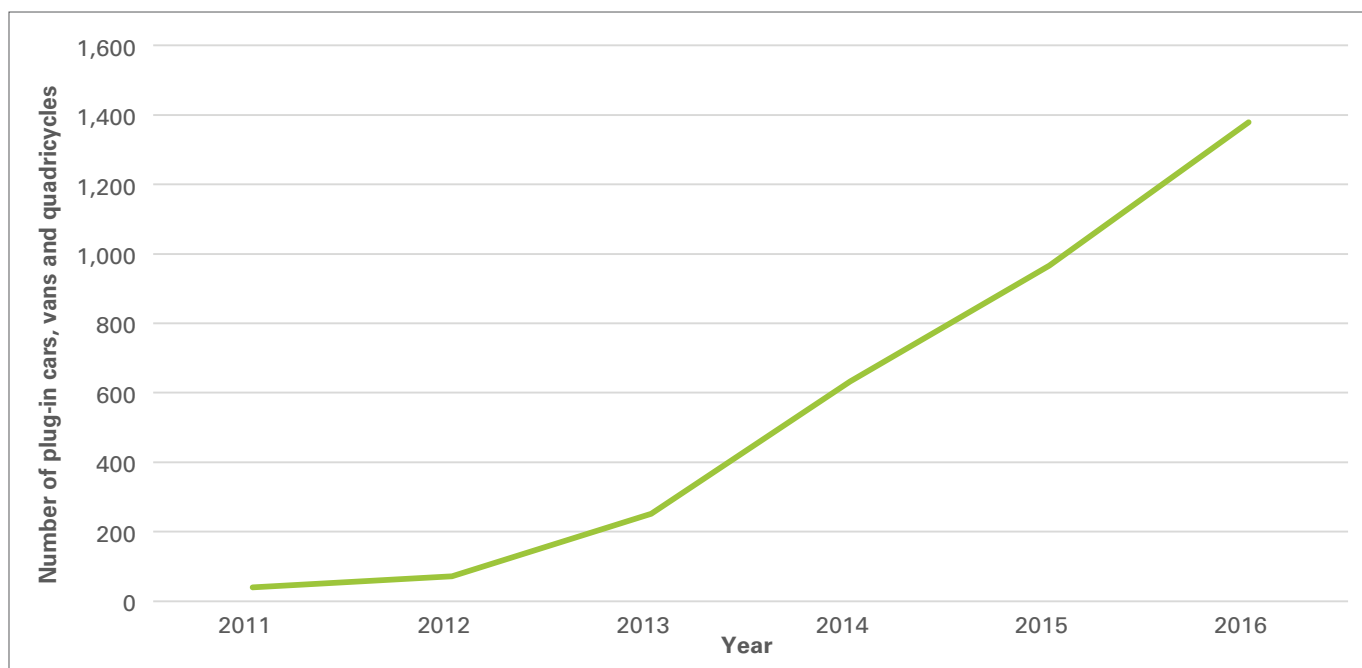
Figure 2.23 - Number of plug-in cars, vans and quadricycles[29] licensed in South Yorkshire[30]

In June 2017 there were 12,821 charging points in the UK[31], increased from approximately 1,500 in 2011. Figure 2.24 shows that only 2.9% of the UK charging points are located in the Yorkshire & Humber region – the lowest of all UK regions. With our City Region being characterised by a high reliance on private cars for commuting, an increasing proportion of diesel vehicles (Figure 2.22), and the slow adoption of electric charging points, this suggests a need for a technological step-change and tough policy decisions for our City Region to address growing pressure on deteriorating air quality.
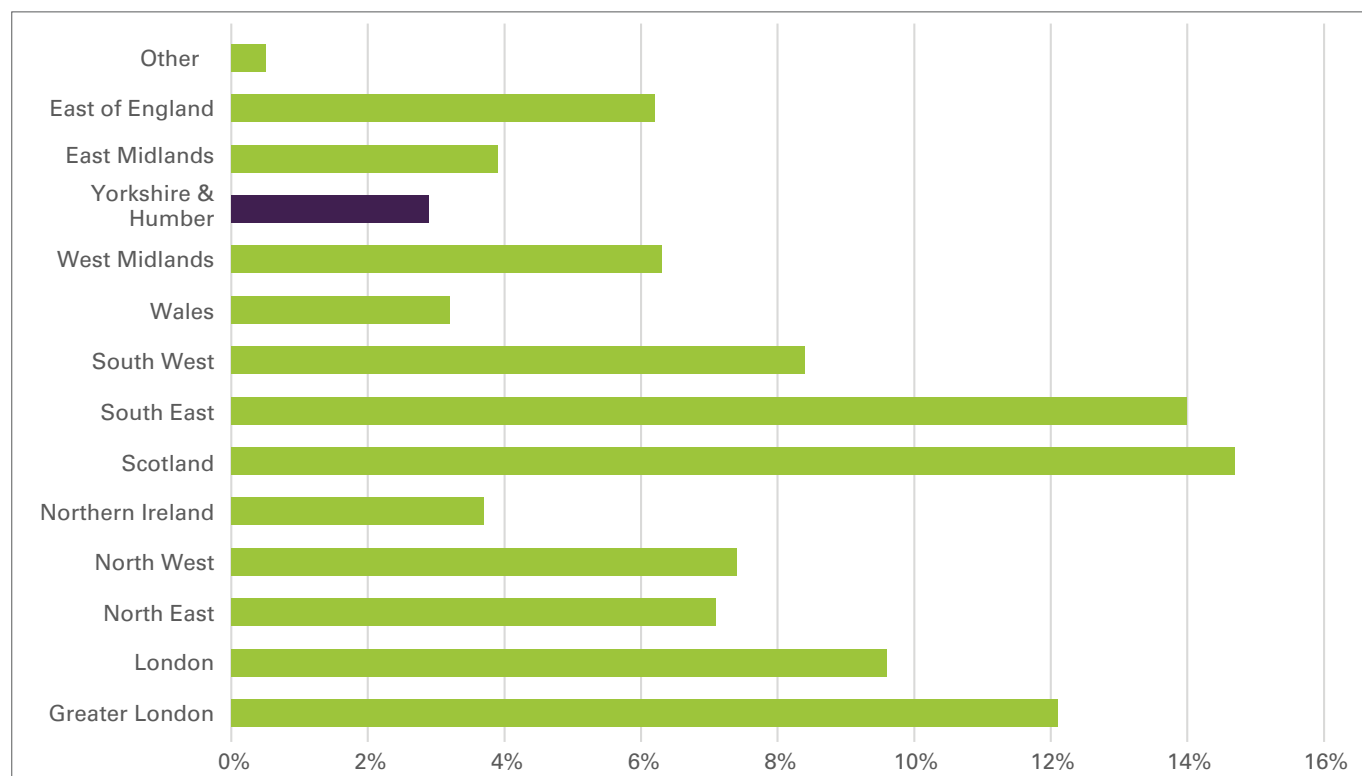
Figure 2.24 - Profile of charging points across UK regions

[29]Quadricycles are small electric cars of less than 400kg.

[30]Table VEH0131, Plug-in cars, vans and quadricycles licensed at the end of quarter, UK, by local authority of registered keeper from 2011 (Department for Transport Statistics, 2016)

[31]Charging point statistics (Zap Map, June 2017)

FREIGHT & DELIVERIES

The nature of freight and deliveries has evolved in recent years. Changes to the logistics industry have resulted from customers' demands for goods to be delivered direct to them, in ever shorter timescales. Now, 40% of UK workers have personal packages delivered to their workplace and 8% receive a package every single day. This culture of online retail and door to door delivery puts significant pressure on road space and local air quality through delivery vehicle emissions. In response to this, some urban areas, such as Regents Street in London, are moving towards models of freight consolidation and there is an existing consolidation centre at Meadowhall, which serves the retail units within the shopping centre.

Consolidation centres can increase the efficiency of goods delivery, and help reduce traffic and air pollution levels in city centres. For example, London's Regent Street consolidation centre allows retailers to consolidate deliveries from all suppliers in one easily accessible location outside of the congestion charging zone. It has reduced deliveries to participating retailers by 80% between 2009 and 201448. This type of approach provides an opportunity to move congestion and large delivery vehicles out of city centres, using smaller lower emission vehicles to do the last mile.

RESILIENCE

Resilience of the transport network to emerging shocks (both natural and man-made) and chronic stresses is an important consideration for the balance of investment. Resilience of a transport network is the ability to cope with and recover from unexpected incident with the minimum disruption to all users Failure to plan in resilience could cripple a system at any time and emerging threats are always changing. As part of the design process for any scheme the potential to increase the resilience of the network, particularly through proactive asset management and maintenance, to the emerging shocks and chronic stresses need to be addressed.

Although the threat of climate change inclines towards a national / international scale solution, our City Region is not immune to the potential consequences, such as extreme weather conditions. Central estimates for climate change resulting from a medium emission scenario forecasts an increase in the mean winter temperature of 2.2°C and an increase in the mean summer temperature of 2.3°C[32] by 2050 for the Yorkshire & Humber region. It is also predicted that the mean winter precipitation will increase by 11% by 2050.

In 2007 major flooding on the River Don caused 2,300 properties to be flooded. Every district within our City Region is at high risk of river flooding with many also at high risk of surface water flooding in addition. The issue highlights the importance of infrastructure resilience within our City Region. Action to combat this threat includes investment in Sustainable Urban Drainage Systems (such as first phase of Grey to Green at West Bar in Sheffield) and flood alleviation schemes in the River Don catchment – with these being part funded by the SCR Infrastructure Fund (SCRIF) programme.

The efficient operation of buses and trams relies on a significant investment in maintenance and minimisation of disruption. Across SCR, the coordination between Local Highway Authorities, Public Transport Authorities and Public Transport Operators remains of vital importance to deal with incidents and effectively communicate disruptions to the travelling public. This includes bad weather such as flooding, ice and snow, which without adequate planning can severely limit operation of public transport networks. In some parts of our City Region, including Sheffield and the Peak District, the hilly topography can exacerbate this challenge.

Network resilience limits our growth at present. In 2015 the DfT published the Trans-Pennine Routes Feasibility Study, which identified that the existing trans-Pennine road routes between our City Region and Manchester City Region experience a road closure every 11 days on average, with two-thirds of these being longer than two hours. 77% of these closures are the result of either road traffic collisions or bad weather[33]. This limited road connectivity restricts business interactions and opportunities for increasing economic activity. This resilience issue is not reserved to roads, with the TransPennine Rail route also experiencing higher levels of disruption and poor alternatives make the journey unattractive. This is evidenced in the low commuting rates between the two City Regions, as less than 1% of Sheffield's residents commute to Manchester despite this being a distance of less than 40 miles.

[32]UK climate projections, medium emissions scenario (UKCP09 data licence)
[33]Trans-Pennine Tunnel Study Stage 3 Report (DfT, February 2015)

The issue is not only about TransPennine connections, with the electrification of rail services elsewhere on the network expected to deliver reliability and resilience benefits. Research undertaken for SCR highlights that electric units are generally more reliable than diesels. The overall difference in reliability is influenced by the unit selection. For example, the 140mph Javelin trains are affected by a 'technical incident' every 45,000 miles. This level of reliability offered by the Javelins is higher than the current diesel Meridian fleet used on the Midland Mainline (39,500 miles per technical incident, 12% lower), or the High Speed Trains (HST) (12,200 miles per technical incident, 73% lower)[34].

2.4 SOCIAL

2.4.1 SAFETY

The historical trend in casualty data for South Yorkshire shows a decrease in people killed and seriously injured from collisions (Figure 2.25). Despite this general positive pattern, the recent trend is levelling, and therefore safety still remains an underlying and central consideration in transport.

In particular, the national trend in people killed and seriously injured from collisions shows that although car casualties have decreased, cycle casualties have increased. As many of our wider objectives (such as reducing congestion, improving air quality and tackling obesity) point towards increasing active mode share as a solution, the safety of cyclists and pedestrians must be of upmost importance.

When designing interventions to tackle safety issues and promote safer travel the approach needs to reflect the needs of different groups. The need to focus on groups most at risk is important in deciding where to intervene. High risk groups, for example children and young drivers, will remain a priority group for investment. Alongside this focus on high risk groups, changes to National Policy, for example penalties for the use of mobile phones while driving, will require action at a local level to inform all drivers of the risks and penalties.

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
KSI All	1,482	1,446	1,447	1,493	1,326	1,234	1,098	1,108	935	1,004	1,025	1,002	909	845	696	715	746	742	731	725	733	686	715	740	748	705	658	626	639	585	530	435	471	479	481	469	401
KSI - GB	86,896	84,859	84,105	85,682	76,068	78,658	76,145	74,142	69,418	68,543	68,531	65,658	56,186	53,485	48,834	50,190	49,154	48,097	46,583	44,255	42,545	41,564	40,560	39,407	37,215	34,351	32,155	31,845	30,720	28,572	26,912	24,510	25,023	24,793	23,370	24,582	23,869

Number of people killed and seriously injured in South Yorkshire and GB over the same time period as a comparison

Figure 2.25 - Number of people killed and seriously injured[35]

[34]Midland Main Line Electrification: Reinforcing the Case for Investment (Aecom/SCR, 2015)

[35]Making South Yorkshire Roads Safer: A Safer Roads Partnership Strategy 2017-2026 (South Yorkshire Local Transport Partnership, 2017)

2.4.2   SOCIAL INCLUSION

Our City Region ranks as the 7th most deprived LEP area in England. Figure 2.26 shows that there are widespread areas within our City Region that are within the most deprived in the country, and in some locations (e.g. Rotherham) deprivation has increased between 2007 and 2015.

IMD Percentile (where 1 represents 10%)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
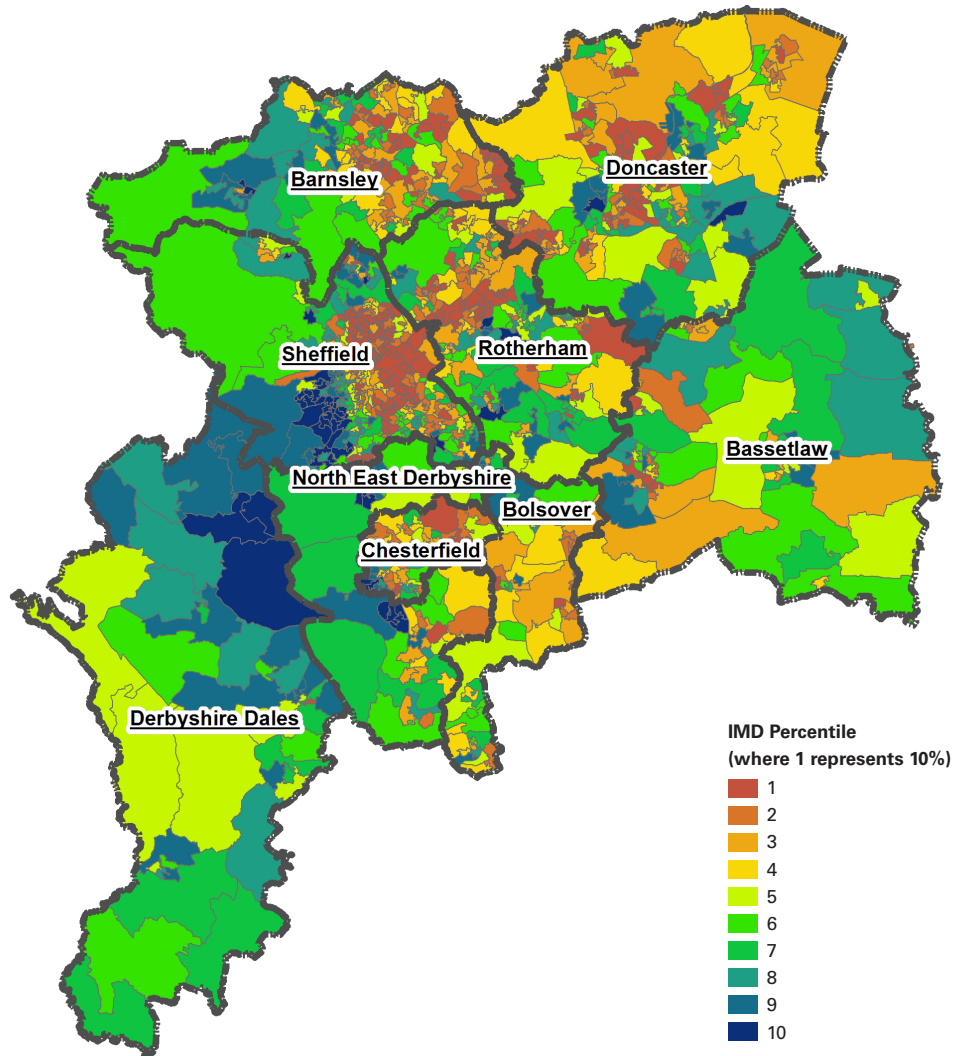
Figure 2.25 - Deprivation across SCR[36]

The latest census data (2011) identified that 29.5% of households in South Yorkshire do not have access to a car. It is essential that key services and employment opportunities remain accessible to all, including the most deprived areas of our City Region. This can be achieved through provision of effective public transport and encouraging adoption of active modes of travel. However, inclusive economic growth is being hindered by reductions in the extent and level of service provided by the bus network, suspensions to Supertram services, and rising cost of travel (single and return tickets) by public transport, as shown in Figure 2.27.

In many cases the areas with greatest reliance on public transport (i.e. those without access to a car) are the most deprived areas across SCR. Recent research by the Centre for Regional Economic and Social Research (CRESR)[37] indicates that the barriers to travelling require targeted interventions that help people overcome financial, informational, perceptual and emotional barriers to making trips to hitherto unfamiliar destinations, or to overcome stigmatised perceptions of their home area. The report suggests that such interventions also need to be of sufficient scale and duration to have a significant effect.

[36]English Indices of Deprivation (Department of Communities and Local Government, 2015)

[37]Addressing transport barriers to work in low income neighbourhoods (CRESR, 2017)

The stretch to household budgets is also a significant barrier to travelling. The CRESR report[38] highlights the most recent ONS figures for household expenditure where transport accounts for 14% of an average household budget. Excluding mortgage and rental payments, this is now the most significant household cost. For lower income households the report goes on to highlight that the ability to afford transport is challenged by essential needs including heating and food, with low income households having significantly lower expenditure on transport than higher income households.

The impact on accessibility to opportunities for deprived communities could be in part explained by the growing gap between the slow growth in wage levels compared to rises in public transport fares. In recent years the cost of travelling by public transport fare has increased above inflation as have other living costs, whereas wage growth has stagnated.

The patterns and timing of work are also creating a challenge for people who are reliant on public transport to enter employment. The current provision of public transport does not support a 24/7 economy - whilst shift patterns continue throughout the day and night, the public transport network does not provide services 24 hours a day, although where possible SYPTE and operators will timetable buses to accommodate shift patterns at employment sites. This can hinder the ability for people to enter the labour market. Public transport in its current form may not be the solution to this challenge as the density and timing of journeys cannot always be supported commercially or through subsidy. A more flexible solution may be required.

Figure 2.27 - Change in average passenger transport fare in South Yorkshire[39] (These figures are based on single or return journey fares and better value tickets are available for frequent travellers).

[38]Ibid
[39]Trends in average passenger transport fare (SYPTE, 2007 to 2013)

2.4.3 PUBLIC HEALTH

The national obesity survey shows that although the obesity levels in our City Region of children aged 10-11 years have decreased to meet the national average (19%)[40], there are a number of areas within our City Region that have higher than average, and growing, obesity levels – see Figure 2.28.

National research by Sport England shows that more than one in four people engage in less than 30 minutes of physical activity a week and it is estimated that one in six deaths is caused by inactivity. Within our City Region, Figure 2.29 shows that the majority of districts have inactivity levels higher than the national average for the adult population (aged 16 and above)[41].

Active transport modes offer a significant potential to increase activity levels and reduce obesity, whilst also providing affordable, inclusive access to jobs and services. Public Transport can also play an important role. A study commissioned by Greener Journeys[42] highlighted the health benefits of using public transport:

- Bus users achieve half the Government recommended daily exercise
- Daily bus users clock up annual equivalent of 11 marathons
- Regular bus travel beats car for health benefits as bus users walk 2.5 times further than car users.
- Daily short walk to and from bus stop and destination can burn 22,630 calories a year

This can result in:

- 44 percent less likely to be overweight
- 27 percent less likely to have high blood pressure
- 34 percent less likely to have diabetes

The evidence is clear that using public transport has clear tangible benefits to individual's physical and mental wellbeing and any scheme that contributes to improvements to public transport will in turn contribute to improvements to physical activity.
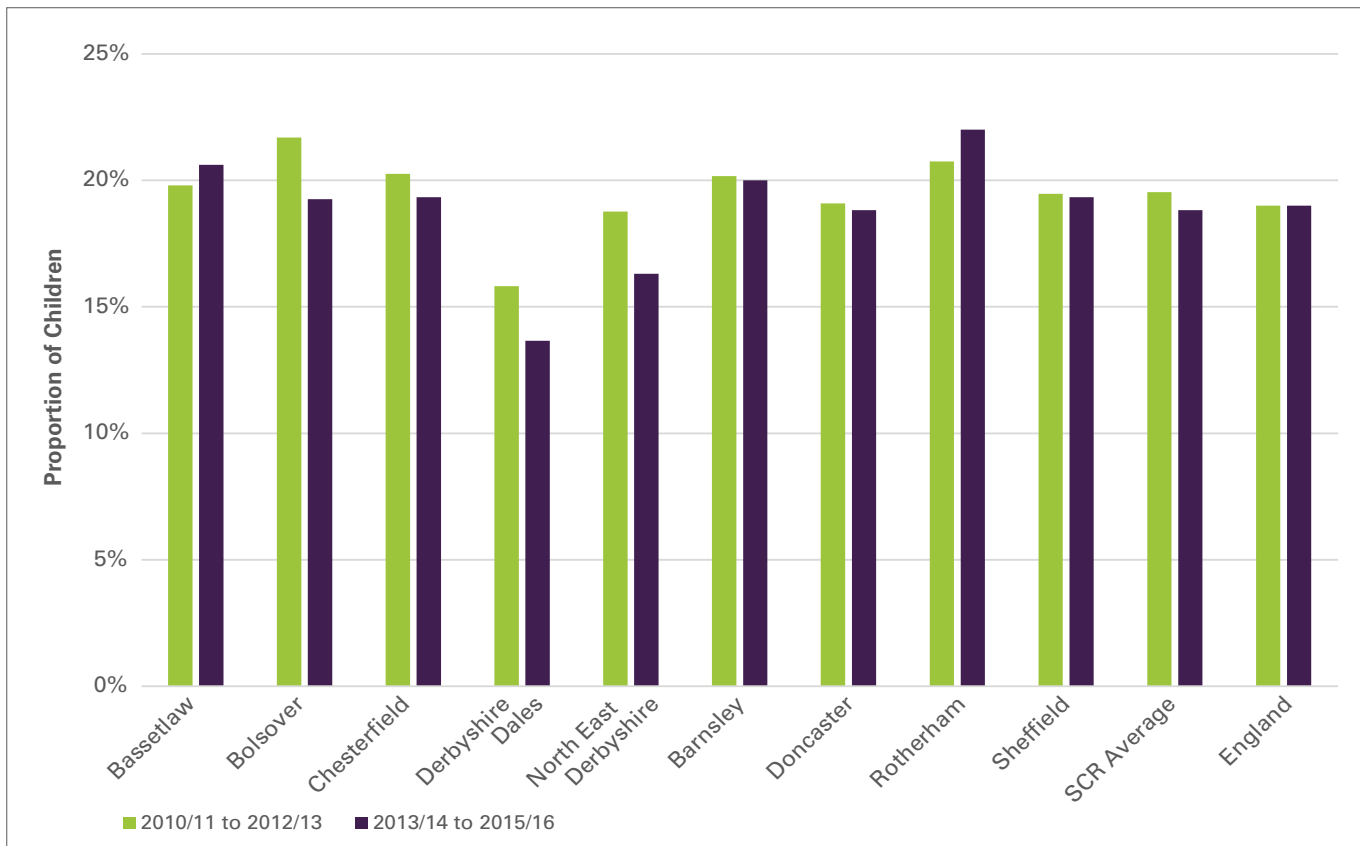
Figure 2.28 - Prevalence of obesity among children in Year 6 (age 10-11 years)

[40]Child obesity and excess weight: small area level data (Public Health England, 2017)

[41]Active People Interactive (Sport England 2010/11 to 2012/13 and 2013/14 to 2015/16)

[42]Why taking the bus is good for your health (Greener Journeys, 2011)
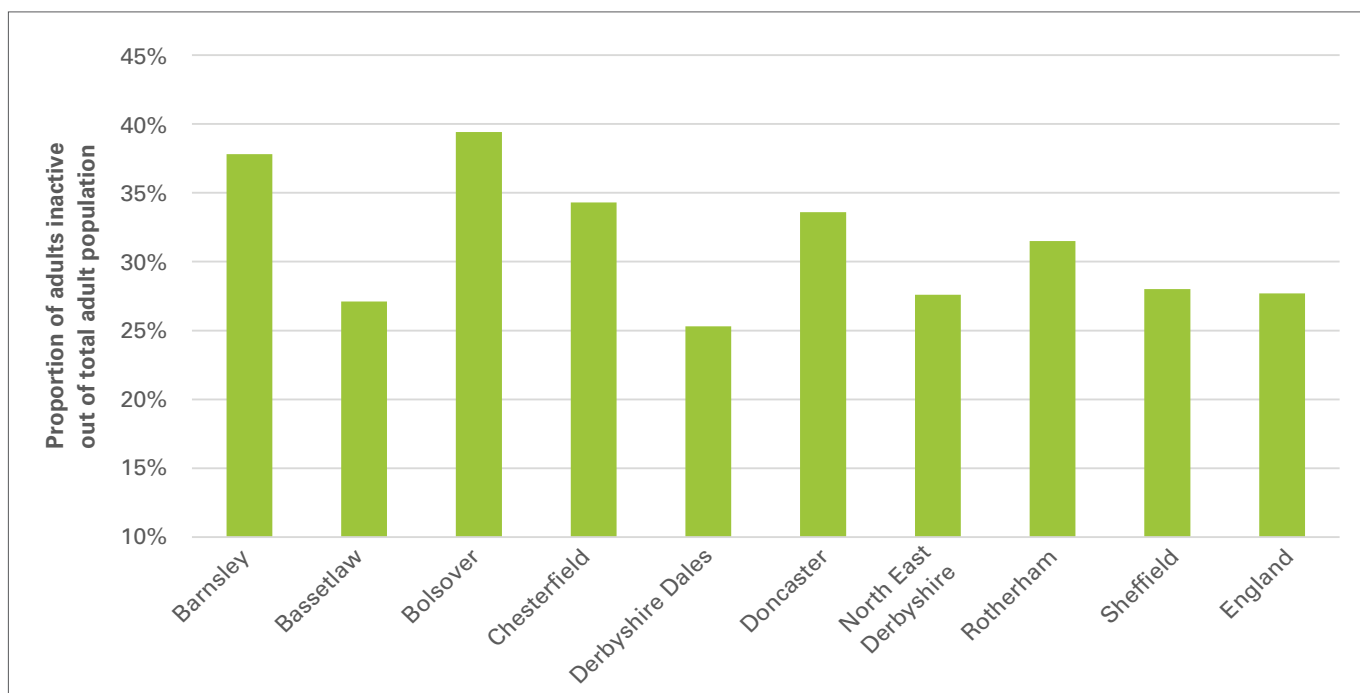
Figure 2.29 - Proportion of adults that were physically inactive in 2014/15

The Dementia UK Update Report estimated that in 2014 there were over 815,000 people with dementia in the UK, which was forecast to increase to over 1 million by 2025 and 2 million by 2051 – see Figure 2.30. With an increasing diagnosis rate, there is a need to adapt the public transport network to allow those with dementia to retain their independence and live life to the full for as long as possible. Furthermore, the UK Health Forum reports a connection between dementia and public health, and therefore transport measures that promote physical activity, for example, should be encouraged as a means of limiting future rise in dementia diagnoses. Furthermore, all physical, sensory and cognitive issues should be addressed through good design as standard.
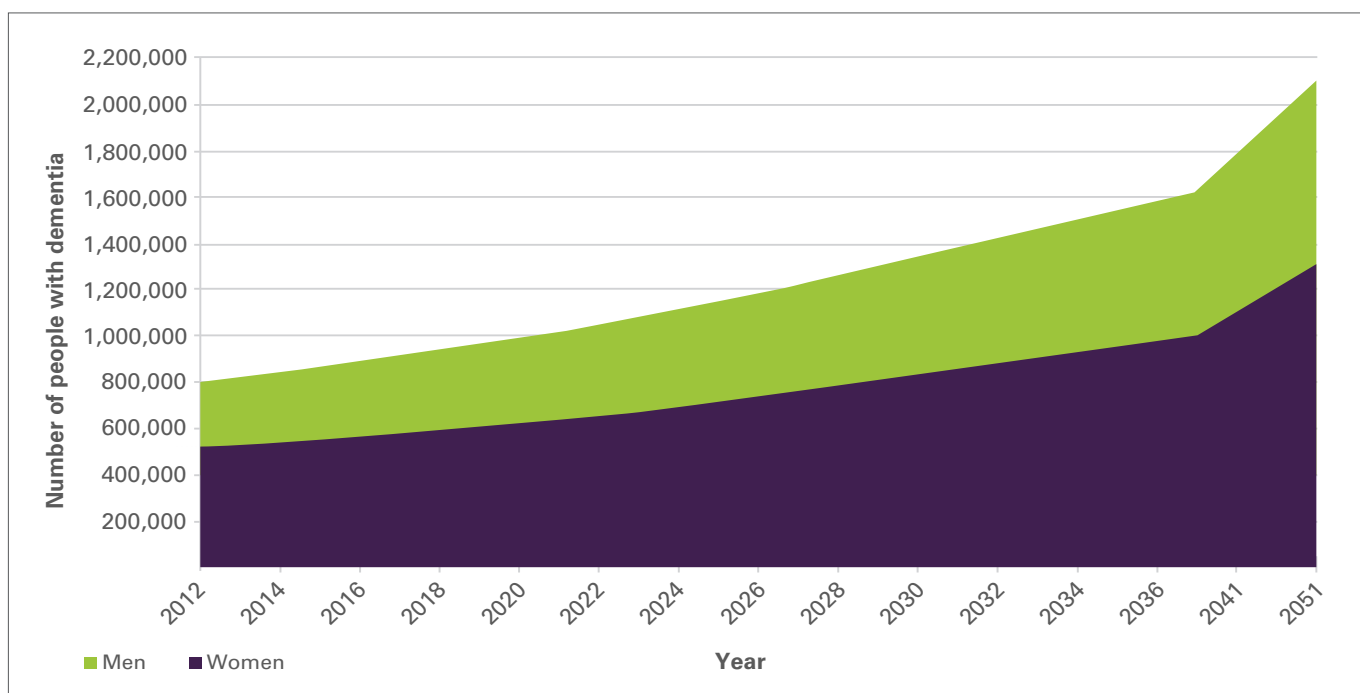
Figure 2.30 - Projected increases in the number of people with dementia in the UK, by gender (2012-2051)[43]

[43]Dementia UK Update (Alzheimer's Society, 2014)

Poor air quality has recently been estimated to account for up to 500 premature deaths per year in Sheffield, with health costs of around £160 million per year[44]. Individuals who are particularly sensitive and exposed to the most elevated levels of pollution have an estimated reduction in life expectancy of as much as nine years. In comparison, the Department of Health reports that the impact of reducing fine particles has a bigger impact on life expectancy than eliminating passive smoking or traffic accidents, as shown in Table 2.1.

	Reduction in fine particles PM2.5	Elimination of road traffic accidents	Elimination of passive smoking
Expected gain in life expectancy	7-8 months	1-3 months	2-3 months

Table 2.1 - Comparison of the impact on life expectancy from reduction in fine particles[45]

2.5   TECHNOLOGY

2.5.1   DIGITAL CONNECTIVITY

Advances in mobile technology and the Internet of Things (IoT)[46] are drastically changing the world in which we live from transport to education, business, the home, etc. The IoT is a giant network of connected devices and it is estimated that by 2020, the number of connected devices will be over 26 billion. Mobile network technology is fast evolving to meet the demands for high speed connections, helping to extend coverage further into rural areas and provide the capacity needed to meet the needs of users in cities and towns.

The difference in smartphone ownership between young and older age groups is stark and the smartphone ownership of 16-34, 35-54 and over 55 age groups in 2016 was 90%, 83% and 42% respectively. Smartphone applications have a strong influence on the travel choices people make and are profoundly influencing the way people interact with the network and travel behaviour.

Digital connectivity provides an excellent opportunity to improve the attractiveness, efficiency and uptake of the transport system as a whole, and specific modes within it. However, recognising the varying degree of technological adoption by different age groups is important to ensure social inclusion.

2.5.2   TECHNOLOGICAL RELIANCE

Data from Ofcom's technology tracker shows that there has been a sharp increase in the proportion of adults going online on a smartphone with two thirds of those aged above 16 (66%) indicating that they used their smart phones to access the internet compared to 21% in 2010 – see Figure 2.31[47].

Increasingly, people expect up-to-date information that is available wherever they are at whatever time, and transport needs to respond to this expectation.
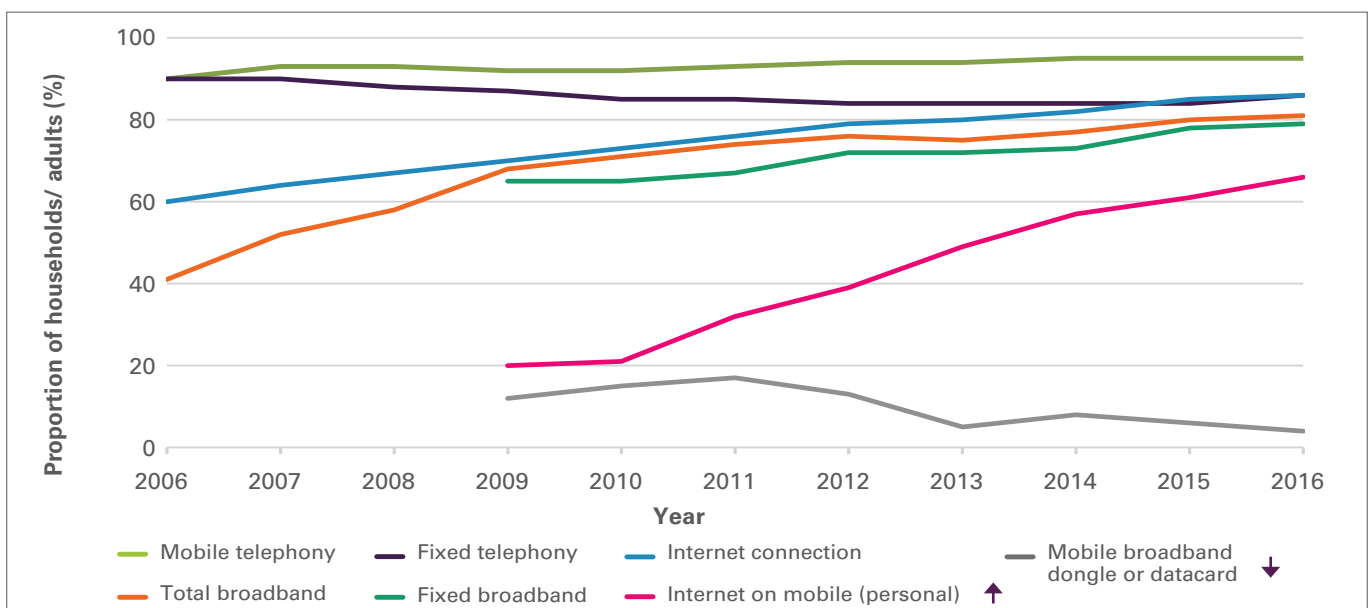
Figure 2.31 - Proportion of households digitally connected

[44]Air Quality Action Plan (Sheffield City Council, 2015)
[46]Department of Health, EV 142
[45]A network of objects connected through internet that are able to collect and exchange data using embedded sensors.
[47]Communications Market Report 2016 (Ofcom, 2016)

2.5.3   MOBILITY AS A SERVICE

Driving a vehicle is becoming a less attractive mode of transport for younger generations; between 2012 and 2016 there were 6% fewer people with a full driving license in the 16-24 age group in UK[48]. Instead, there is a growing demand for car sharing and transport on demand through innovative taxi services such as Uber. This evolving way of accessing many mobility options without having to own a car means that car ownership rates may fall as travel patterns and behaviours evolve in response to a rapidly evolving market.

2.5.4   TECHNOLOGY AND INNOVATION

The transport industry is already benefitting from advancements in technology and innovation. For example, national trends[49] suggest that the share of cars/vans with satellite navigation technology is increasing rapidly; and smart motorway systems continue to be implemented on a national scale to improve efficiency, safety, air quality, and resilience.

Looking to the future, robotics and automation will play an increasing role in the operation and delivery of transport services. Intelligent robots, aerial technology and drones are likely to provide a service that supports the inspection and maintenance of transport infrastructure assets.

Perhaps even more disruptive, the emergence of autonomous vehicles is fast evolving into a viable market. As shown in Figure 2.32, it is predicted that about 35% of autonomous vehicle sales will be fully autonomous by 2035. This could have major consequences for the existing transport system as the change to in-vehicle passenger use of time could see autonomous vehicles compete with modes such as rail. Driverless cars and Heavy Goods Vehicles could also increase the capacity of existing infrastructure, as they could safely travel in decreased proximity[50].
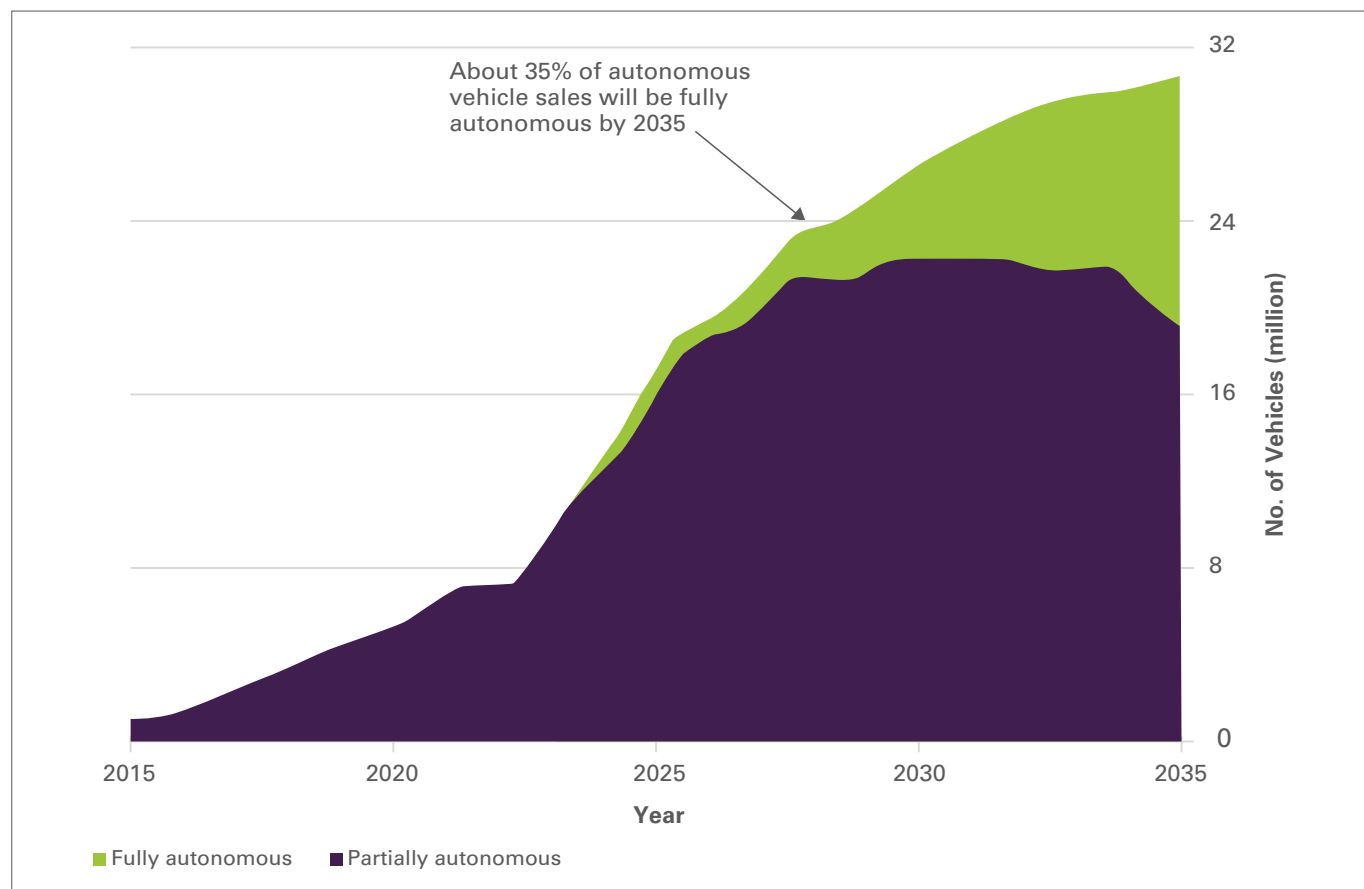
Figure 2.32 - Prediction of change in autonomous vehicle sales

[48]GB Driving Licence Data, 2017

[49]Table NTS0907 (National Travel Survey, Department for Transport Statistics, 2016)

[50]Autonomous Vehicles and the Mobility of New (and Old) Consumers (C3 Report,2014)

2.5.5   INTEGRATED TICKETING AND INFORMATION

Transport connectivity is recognised as being a key enabler to drive economic growth through agglomeration, expanding labour and employment catchments, and unlocking key locations. As such, there is an appetite to remove barriers to travel and create a seamless experience across all modes. Significant investment in smart ticketing has been made by Northern City Regions and also by the largest bus operators who have introduced contactless and mobile payment systems. Consumers' appetite for spending using contactless methods is driving this change. Figures from the UK Cards Association state monthly spending was up from £287 million per month in January 2015 to £567 million per month in June 2015. In just six months of 2015, UK consumers spent more using contactless than they did in the whole of 2014. Whilst good progress has been achieved, much of the evolution has been made independently, and resulted in the disparate ticketing schemes across the North and between different modes of transport.

As well as integrated ticketing, there is also opportunity to improve information provision for public transport services to improve the quality of the journey (for example, providing high confidence on journey reliability) and therefore attractiveness of the service. In 2014, it is estimated that the average excess waiting time for frequent bus services in South Yorkshire was 100 seconds, and in Derbyshire was 60 seconds[51]. Excess waiting times can influence mode choice and the attractiveness of public transport can be enhanced by providing real time information at the bus stops and online. SYPTE has been working with local partners and public transport operators to enhance the provision of the Realtime service. With investment in the control systems, on-board technology and passenger information displays the ability to provide more accurate and dynamic travel information has moved forward significantly. Alongside Realtime, the use of social media platforms to communicate with the public and gather information has an increasing role.

2.6   POLITICAL

Strong business and political leadership has helped SCR to secure a £370m capital programme, deliver the Growth Hub, Skills Bank, Enterprise Zones and major inward investment successes whilst also securing employment trials and pilots that put us in the vanguard of skills and employment policy. Continued progress in these areas will remain important to allow us to make the necessary changes to the transport network that can support inclusive economic growth.

The creation of a consolidated, devolved transport budget alongside wider infrastructure, skills and business support funding has provided SCR with a strong platform to transform the network. SCR will continue to work closely with Government, neighbouring authorities and now Transport for the North to determine which future powers, functions and funds should be part of the on-going devolution discussion.

---

[51]Table bus0903, Average excess waiting time for frequent services by local authority: England, annual from 2004/05 (DfT statistics, 2016)

3.0 OUR VISION

3.1 INTRODUCTION

Our Inclusive Industrial Strategy has set out a vision for our City Region, which is:

By 2040 we will be a City Region with a strong inclusive economy, competing in national and global markets creating a place where our communities, people and business prosper, with a strong sense of civic and social responsibility.

Through analysis of the evidence base in Section 2, we have built an understanding of our transport-specific strengths and weaknesses, as well as future opportunities and challenges to 2040. In partnership with our stakeholders we have used the evidence base and overarching Inclusive Industrial Strategy vision to develop a transport vision that aims to direct transport investment towards fulfilling our wider regional objectives.

3.2 OUR TRANSPORT VISION

Our transport vision is:

> **WE WILL CONTINUE TO BE A FORWARD-LOOKING CITY REGION WITH INTEGRATED TRANSPORT CONNECTIONS THAT SUPPORT ECONOMIC GROWTH AND IMPROVE QUALITY OF LIFE FOR ALL**

3.2.1 FORWARD-LOOKING CITY REGION

Transport has a pivotal role to play in achieving our vision for 2040. We must look forward and consider the future of our City Region, and transport as a part of it, in order to respond optimally. This means looking beyond the current networks and patterns. We recognise that to respond to future challenges in transport and cement our City Region's competitive advantage, embracing new technologies and different solutions is crucial. The pace of technological change in the last decade has been unprecedented, and we will support and adopt the most advantageous digital solutions to put us at the forefront of technological change as we look ahead to 2040.

3.2.2 INTEGRATED TRANSPORT CONNECTIONS

Our City Region is characterised by a polycentric geography and integration is key to achieving the best outcome for our City Region as a whole. The City Region must work together to gain consensus and drive forward strategies and projects that improve connectivity within our City Region, to other centres within the North, to other City Regions more nationally, and on an international scale.

Strong and effective leadership, along with political fortitude, is an essential prerequisite to achieving this through commitment to a clear agenda and investment programme, effective governance, and leadership that promotes joined-up thinking and nurtures strategic relationships both within and beyond our City Region.

Our daily lives are both supported and impacted by complex and interacting systems, from transport to land use planning, our environment, technology, healthcare, education and so on. Only by working collaboratively together and understanding the interactions between them will we be able to deliver an integrated response that allows us to derive the greatest benefit from our investment.

Integration also plays a part within transport itself; increasingly consumer behaviour and evolving markets dictate the need for an integrated transport system that provides the connectivity, capacity, reliability and resilience needed to support wider regional objectives. To achieve this we need a multi-modal, integrated transport network that provides seamless travel throughout our City Region and to neighbouring centres.

3.2.3   SUPPORT ECONOMIC GROWTH AND IMPROVE QUALITY OF LIFE FOR ALL

Supporting economic growth is our central objective, and we want our transport network to play its part through increasing productivity, providing access to higher wage jobs, education and training, and ensuring our businesses can readily access their markets.

Economic growth in our City Region must also consider the other aspects of a thriving City Region, such as quality of life and inclusivity, so that we strike the balance that is right for our whole City Region. These considerations must play an important role in future-proofing our City Region to allow sustainable growth, whether that is improving air quality to benefit our health and the environment, reducing obesity to improve public health, or delivering innovative solutions that support seamless travel for all.

4.0 OUR GOALS

4.1 INTRODUCTION

Based on our evidence and identification of the issues that our City Region needs to address to achieve our transport vision, we have developed four transport goals around the following themes:

- our economy;
- our people;
- our environment; and
- our solutions.

Our goals are summarised in Figure 4.1 below.

Support inclusive economic growth

Create healthy streets where people feel safe

Improve the quality of our outdoors

Promote, enable and adopt different technologies

Figure 4.1 - Our transport goals

4.2 OUR ECONOMY: SUPPORT INCLUSIVE ECONOMIC GROWTH

Economic growth is our central objective and transport plays a major role in supporting this. We want to create more high GVA jobs while continuing to grow jobs across the income spectrum, ensuring that all residents from every community can access these jobs.

We want growth to be inclusive, where investment and growth produce benefits for everyone in our City Region. Evidence shows that the skills profile of our City Region is very variable by area, with employment rates and educational performance that are concentrated in a few places. We want inclusive growth that reduces disparity and is shared by all.

Transport infrastructure plays a key role in supporting the economic growth of our City Region. It provides the means by which residents can access employment, education, retail and leisure opportunities, as well as providing the mechanism for businesses to transport goods and services. Our evidence suggests that congestion is already restricting our growth, and without intervention could significantly restrict the future productivity of our City Region. In addition, gaps in connectivity could further limit access to employment, labour, and higher value jobs.

Support inclusive economic growth

Create healthy streets where people feel safe

Improve the quality of our outdoors

Promote, enable and adopt different technologies

4.3 OUR PEOPLE: CREATE HEALTHY STREETS WHERE PEOPLE FEEL SAFE

Improving the quality of life for our people is clear in our transport vision. Transport can affect quality of life by providing access to opportunities, promoting health by enabling sustainable and active travel choices, and ensuring safety and security, which is always of paramount importance.

Streets play a pivotal role in our quality of life and are the primary places where people and transport come together. The healthy streets framework puts human health at the heart of planning and consists of ten indicators. We want our streets to become healthy streets that actively improve the quality of life of our people.

Although safety is included in the healthy streets framework, in a transport context safety is wider-reaching and a priority for all modes, all services and all locales. The perception of safety is particularly relevant with regards to healthy streets as it is a factor that can inhibit uptake of active modes and influence people's behaviour towards healthy and sustainable travel choices.

Beyond our streets, our green and recreational spaces also play a vital role in supporting a high quality of life for our residents. We have a fantastic offer of green and recreational spaces throughout our City Region and we need to ensure that people are able to access, use and enjoy them in a sustainable way that supports our public health initiatives.

4.4 OUR ENVIRONMENT: IMPROVE THE QUALITY OF OUR OUTDOORS

Our City Region prides itself on our outdoors, with the UK's outdoor city, Sheffield, at its heart. Our green environment is an attractor to people to live and work in our City Region, and gives us a competitive advantage over other City Regions. Therefore it is essential that we cherish, protect and improve our outdoors so that it remains an asset for our City Region in the future.

Transport can play a major role in improving the quality of our outdoors. In particular, vehicle emissions affect our air quality, whilst carbon emissions contribute towards climate change– the consequences of which have been proven to affect our City Region through extreme weather events. We want to address these growing issues that threaten the future of our outdoors.

Our green environment is a major asset, but so is our built environment. To support economic growth in our City Region, our urban centres will need to grow and we want to make sure we create attractive places where people want to live, work and play. By improving our built environment we will have a better chance of attracting the right people for the right jobs, and retaining graduates from our universities as well as making life better for our existing residents.
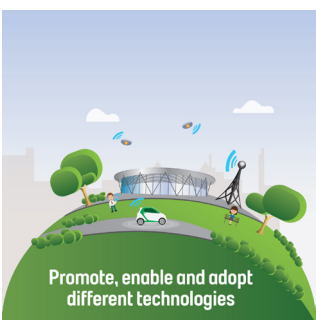
4.5 OUR SOLUTIONS: PROMOTE, ENABLE AND ADOPT DIFFERENT TECHNOLOGIES

The pace of change due to technology has been unprecedented in the last decade, and we want our transport system to be at the forefront of these developments. Embracing different technologies is about considering different ways of doing something to generate efficiencies, or to find a better way of doing something.

We recognise the importance of the digital economy and want to build on our existing strengths in this area, so we are a place where skilled people want to locate and where innovators benefit from a supportive environment in which to develop ideas and bring them to fruition.

We also recognise that transport funding opportunities are increasingly favourable towards solutions that embrace smart technology and make use of existing infrastructure assets. We therefore want to respond to this and maximise our potential for investment.

We want to boldly embrace and enable change by facilitating the development of new solutions and providing the right conditions to adopt them. We also want to be more pro-active by setting ourselves targets that push us to the forefront of technology, whilst continuing to provide solutions that work for all.

5.0 OUR POLICIES AND CONDITIONAL OUTCOMES

5.1 INTRODUCTION

Each of our transport goals is underpinned by three policies, which provide a framework to guide all decision-making processes related to our transport network up to 2040. We have developed these policies through analysis of the evidence detailed in Section 2, consideration of the goals in Section 4, and review and amendment based on stakeholder input.

As this is a refresh of the 2011 Transport Strategy, we have also reviewed the previous 26 policies to determine whether they are still relevant and identify any gaps, and distilled them down to 12 policies in total. A fewer number of policies will help us to focus on our most important priorities, and enable us to monitor our progress more effectively.

Our transport policies are summarised in Table 5.1 and then described in more detail under each goal with an outline of the type of interventions we plan to undertake. Alongside the policies we have developed a set of conditional outcomes, which are ambitions based on our transport goals and policies that:

- set targets for the improvement of our transport network to 2040;
- support the definition and implementation of a future process for transport scheme commissioning, and will assist in the prioritisation of the transport interventions and programmes delivered through it; and
- allow progress against achieving each goal to be measured and monitored.

We identify our conditional outcomes in Table 5.1 alongside the goal they are linked to. The conditional outcomes are set out in more detail as part of the outline implementation plan in Section 6.

In this section we state our policy then describe the intention of the policy. We then go on to describe the Strategic Interventions that contribute to policy delivery. Some Strategic Interventions will support multiple policies, but are described under the policy that they are most closely linked to.
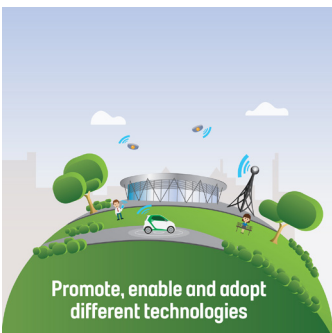
Goal	Policy	Conditional Outcome (by 2040)
Support inclusive economic growth	1. Improve access to jobs, markets, skills and supply chains 2. Enhance productivity by making our transport system faster, more reliable and more resilient 3. Invest in integrated packages of infrastructure to unlock growth and support Local Plans	a. Increase GVA by £500m through increasing the number of economically active people living within 30 minutes of key employment locations and universities by public transport b. Increase rail commuter flows with Greater Manchester and Leeds City Regions by 4,950 incoming & 7,400 outgoing residents c. 90% of our population located within 1.5 hour journey time by public transport of an international airport that offers long-haul flights d. Increase productivity by £500m through reducing delays on our transport network e. 70% of people living in the most deprived areas are brought within a 30 minute journey time by public transport of an urban centre, growth area or university
Create healthy streets where people feel safe	4. Make our streets healthy places where people feel safe 5. Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel 6. Improve sustainable and inclusive access to our green and recreational spaces	f. Achieve mode share targets of 47% private car, 33% public transport, 9% walking and 11% cycling g. 95% public opinion that our local transport choices feel safe h. Reduction of reported casualty rate of 6% pedestrians, 3% cycles, 3% private transport and 7% public transport
Improve the quality of our outdoors	7. Actively improve air quality, especially in designated AQMAs 8. Deliver a low carbon transport network, including a zero carbon public transport network 9. Work in tandem with the planning and development community to create attractive places	i. Eliminate AQMAs in our City Region j. Reduce tailpipe carbon emissions in line with targets for the UK and have a zero carbon public transport network by 2040 k. Increase footfall in the main retail and leisure areas within our urban centres by 15% through improvements to our public realm
Promote, enable and adopt different technologies	10. Be at the forefront of transport innovation 11. Enable different solutions to create a fully integrated and inclusive transport service 12. Adopt technology solutions to stimulate change	l. £330m cumulative additional transport-focussed research and development investment within our City Region m. Increase productivity by £75m through technology based efficiencies and reduced journey times

Table 5.1 - Our transport policies and conditional outcomes

5.2   SUPPORT INCLUSIVE ECONOMIC GROWTH

Policy 1:   Improve access to jobs, markets, skills and supply chains

We want to increase the number of jobs, particularly high value jobs, in our City Region. We know that to reach our potential, we need to develop integrated transport connections and improve access on four geographical scales (see Figure 5.1):

- within our City Region;
- to other centres in the North
- to locations in the UK beyond the North, such as London; and
- to our international markets.
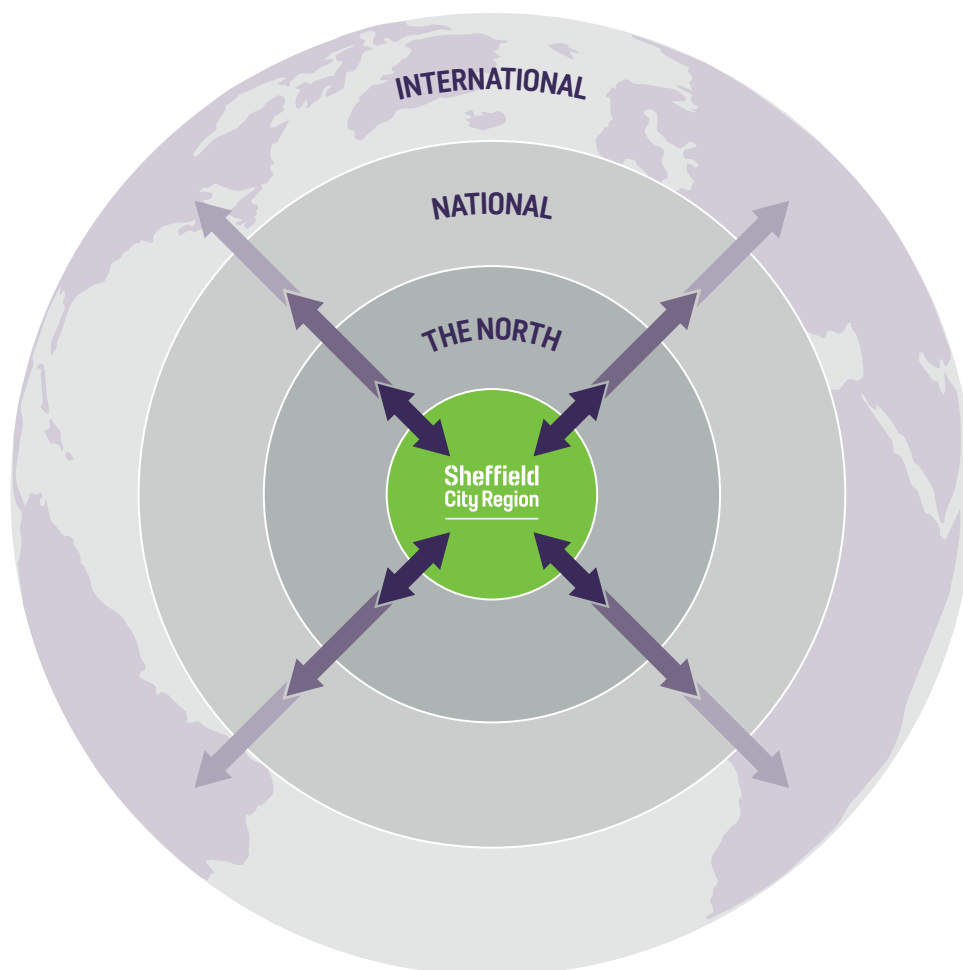
Figure 5.1- Scales of connectivity required to support economic growth in our City Region

By increasing intra-regional connectivity we will provide access to jobs and skills opportunities for all people in our City Region, while improving access to markets and supply chains for our businesses. We will expand and better integrate our mass transit system to provide improved multi-modal and affordable connectivity between both our urban centres and our spatial priority growth areas. This includes examining the options identified through the CRESR report[52] to address the transport barriers for low income neighbourhoods. This includes for example more tailored travel planning to overcome travel perceptions, and tackling the cost barrier.

[52]Addressing transport barriers to work in low income neighbourhoods (CRESR, 2017)

We will also improve inter-regional connectivity, particularly across the North, which will widen our labour market so people can live and work in different City Regions. We see vital connectivity schemes such as Northern Powerhouse Rail (NPR), High Speed 2 (HS2), and trans-Pennine road improvements as a key means of increasing commuter flows between our City Region and other parts of the UK. Through increased connectivity these will also generate greater agglomeration benefits, as shown in Figure 5.2

Matching
Ability to recruit from a deep pool of workers with relevant skills

Sharing
Ability to share inputs, supply chains and infrastructure

Learning
Ability to exchange ideas and information ("knowledge spillover")
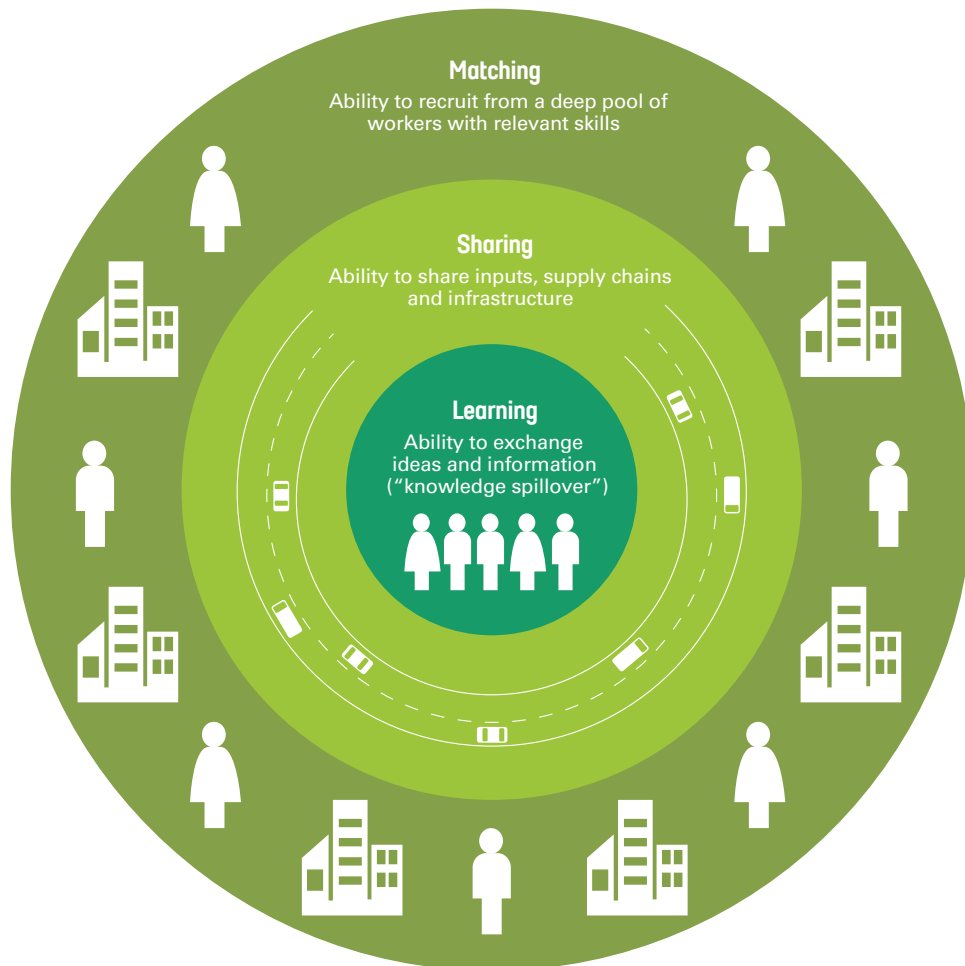
Figure 5.2 - The benefits of agglomeration (Source: Centre for Cities)

Access to national and international markets is essential in our ever increasing global economy. We are in an excellent position to capitalise on our existing assets to achieve this, in particular, Doncaster-Sheffield Airport and the growing developments surrounding it. We will improve our multi-modal and integrated transport connections to the airport so that our businesses and people can access it faster, easier and more sustainably. In addition, road and rail improvements to Manchester and Birmingham International airports will further increase our international connectivity.

Effective partnerships will be essential in delivering access through connectivity both within our City Region, pan-Northern and further afield, and we are committed to making the strongest possible case to get the outcomes needed to capitalise on our growth opportunities.

Policy 1:   Strategic Interventions

Our Inclusive Industrial Strategy recognises that the low levels of commuting between our City Region and other City Regions currently restricts our economic growth. By improving transport links with Manchester and Leeds City Regions, people will be able to commute between City Regions quicker and easier. This means that people can widen their employment horizons, and consider opportunities further afield, which again means a better ability to match the right people with the right jobs.

HS2 is a national, northern and regional transport priority. The HS2 Phase 2b route between Sheffield and Leeds was confirmed in July 2017, and includes stations at both Chesterfield and Sheffield Midland. Our priority is to maximise the economic opportunities HS2 offers the City Region, and we support the early delivery of HS2 to the North, before 2033. To ensure we are ready, **we will produce an HS2 Growth Strategy,** working with local and national partners, which will look at an integrated connectivity package so that the essential connections to key growth and economic areas, and our wider City Region, are in place.

NPR is a TfN and Government led programme to develop fast, frequent and reliable rail links between the Northern cities of Sheffield, Leeds, Manchester, Liverpool, Newcastle and Hull. We want a Southern Pennines Corridor connection from Sheffield to Manchester, Manchester Airport, Liverpool and to the West Coast Corridor, and we want a north-south East Coast Corridor connection between Sheffield, Doncaster, Leeds and the North East. In particular, we want a frequent 'turn up and go' service and 30 minute journey times between Sheffield and Manchester, and Sheffield and Leeds.

HS2 and NPR are intrinsically linked, as the HS2 northern loop and junction is essential to deliver journey times between Sheffield and Leeds in under 30 minutes for NPR. **We expect HS2 Ltd to work closely with TfN** to ensure the work on the northern loop and junction are completed in time to feed into the Hybrid Bill[53]. This work will define the "HS2 touch points" - these are the locations where the construction of HS2 will include the provision for connectivity to NPR.

We support the development of a new route across the Southern Pennines. TfN, the Department for Transport (DfT) and Highways England are developing trans-Pennine options and we want the preferred option to best serve our City Region and capitalise on our growth opportunities. This will need to consider the wider network benefits including the resilience of east-west movements in the North.

To enable our City Region to connect to an improved Pan-Northern transport network, **we will develop a prioritised connectivity package for the longer term Southern Pennine Corridor road solution when it comes forward**. We will work with TfN to explore options for wider connections – this could include a new road scheme that will connect a new TransPennine link across our City Region to the M1 and A1.

To connect in to Northern Powerhouse Rail hubs, **we will identify where upgrades to our intra-regional connections are required** – we are taking this forward as part of our Integrated Public Transport Network Study. In addition, **we will work with partners within our City Region and across the North to develop enhanced intra-regional rail capacity and connectivity through local improvements and NPR, such as a Rotherham Parkway Station**.

We are working jointly with Highways England to manage local and long distance flows on the Strategic Road Network (SRN), and **we strongly support the ongoing programme of upgrades to the SRN**, which is led by Highways England under its Road Investment Strategy.

We are actively promoting the M1 Junction 33-34 Innovation Corridor scheme through the Large Local Major Schemes Fund, which will alleviate congestion constraints and help to unlock the development of the flagship Advanced Manufacturing Innovation District (AMID).

We also support improvements to the M1, A1 and M18 that will improve north-south connectivity on the strategic East Coast Corridor between Yorkshire and Scotland. **We will encourage Highways England to extend the Smart motorway between M1 J34 and J39 to support significant growth planned around this corridor.**

---

[53]A Hybrid Bill is required to give Government the relevant powers to construct HS2 - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/627919/B1_Understanding_the_Bill_v1.0.pdf

Policy 2: Enhance productivity by making our transport system faster, more reliable and more resilient

We want to increase the productivity of our City Region to fill the productivity gap between us and other City Regions. Transport improvements can enhance productivity by making travel to and from work, as well as travel for work, quick and efficient, so that more time can be spent being productive. We know that congestion in our City Region is already restricting our growth. This means that our transport system must be more reliable and resilient, have greater capacity, and be faster. These improvements will also make public transport options more attractive, which reduces congestion and improves our local environment.

As with connectivity, making our transport system faster, more reliable and more resilient is necessary within our City Region, and also outwards – in particular, trans-Pennine links require transformational improvement so that people are able to commute between our City Region and the North West; and journey times to London and Leeds need to be reduced to improve north-south connectivity. Government's consultation on the Major Road Network, which TfN are making the case for, is a key part of this to ensure there is a strategy to support the whole journey for longer distance trips.

Productivity is particularly important for freight services and our strong and growing logistics sector. We will support further growth of this sector by improving the reliability, resilience and speed of our freight connections.

Policy 2: Strategic Interventions

We support the programme of infrastructure improvements that is underway on the East Coast Main Line (ECML). This recognises the vital role of the ECML in connecting our City Region to London and the north. **We will continue to press for new trains running on the ECML by 2018 and subsequent line upgrades to support 140mph services as early as possible**.

We strongly support improvement to journey times, capacity and resilience of the railway lines through our City Region, including the upgrade of Sheffield Midland station on the Midland Mainline. This will improve access to labour markets and help the rail network respond to unexpected disruptions. **We will continue to make the case for investment on the Midland Mainline to improve the connectivity and resilience of the national rail network.**

At a City Region level, we are already investing £650m in our transport network through our SCRIF programme to support economic growth through to 2021. This includes the A630 between the Catcliffe Interchange and the M1 Junction 33. The scheme will seek to reduce journey time and congestion to support housing and employment growth around the Advanced Manufacturing Park and Waverley New Community.

We are working to develop a prioritised programme of interventions that will proactively address forecast capacity challenges. **We will develop our next pipeline of investment through a combination of the commissioning of schemes through the Combined Authority and the development of schemes by partners**.

Through the DfT's Large Local Major Schemes fund **we will develop the SCR Mass Transit business case** to secure funding for renewal of the existing Supertram network and **we will examine options to improve connectivity and reliability through the M1 Junction 33-34 Innovation Corridor scheme**. We are also piloting an innovative tram-train service, which exploits technology new to the UK to enhance Rotherham's connectivity within our mass transit network.

We support improvements to heavy rail services through higher quality trains on the Northern franchise in particular, and wish to see improvements in journey times and service frequencies, and station upgrades to bring all stations up to Better Station standards. We want to have greater involvement in the franchising of services that operate in our City Region, so that we can deliver better, faster and more frequent services, with higher quality rolling stock and facilities.

We will pursue opportunities to influence outcomes through direct engagement and liaison with Rail North and TfN, via their role as co-signatory for the Northern and TransPennine Express rail franchises in the North. We will seek commitments from the new East Midlands franchise, due for renewal in 2018, for improvements to inter-city, regional and local services and stations in our City Region.

To provide efficient connections between our City Region's key economic centres we are developing proposals for an Integrated Public Transport Network. This focuses on improved heavy rail, tram, tram-train and bus rapid transit connections, and achieving greater integration between modes. **We will develop an Integrated Public Transport Network strategy and then progress the commissioning of a sequenced programme of business cases to deliver the proposals identified**.

We will help to deliver capacity, journey time and frequency improvements to the rail network, as well as highways programmes such as smart motorways and **local / key route improvements which benefit the Top 20 corridors forecast to experience delay.** The approach for the top 20 corridors includes delivering multi-modal solutions and identifying wider network benefits which provide improvements for a number of corridors, including the top 20. In addition, **we will bring forward investment on other corridors if there is high value for money and an efficient route to delivery**. We will also improve our bus and tram services, making them more reliable and efficient to squeeze more from our existing assets.

In addition to new schemes, **we will also continue to develop and deliver robust programmes for the renewal of our existing assets**, including our roads and public transport networks to ensure our intra-regional transport network is as resilient as possible.

We will consider the significant opportunities to improve the bus travel offer for existing and new passengers. All four constituent South Yorkshire authorities have signed up to a Bus Partnership and are working collaboratively with bus operators and SYPTE to improve the quality of the bus network, within the funding available. The SCR Devolution Deal offers scope to introduce franchised bus networks within our City Region, and we will explore different public transport operating models (including those in the Bus Services Act) to identify those that deliver the best options for people travelling in South Yorkshire and across the City Region. To encourage greater use of our bus network and reduce congestion in our urban areas, **we will explore options for expansion of Park & Ride provision for bus as well as tram, train and tram-train, including a tram/train option at Magna**.

Policy 3: Invest in integrated packages of infrastructure to unlock growth and support Local Plans

Housing growth, in particular, is behind target in our City Region, and one likely cause is the lack of infrastructure required to unlock specific sites. We have identified seven priority spatial growth areas, and it is important that the necessary infrastructure is put in place to unlock these, as well as other development locations across our City Region. This requires integrated packages of infrastructure that consider land use planning, industrial strategy and infrastructure holistically, so that we can make the best use of our existing assets and capitalise on our current resources to unlock growth in a cost-effective and sustainable way. This also needs to align with and support Local Plans so that there is a coordinated and concerted effort to plan transport, development and regeneration in a coordinated manner.

Policy 3: Strategic Interventions

Highway and other transport improvements to unlock our seven spatial growth areas are either underway, or planned, as part of the current Sheffield City Region Infrastructure Fund (SCRIF) programme or through our Integrated Infrastructure Plan. **We will develop spatial packages for each of the growth areas**, which will set out the infrastructure needed to unlock development in those areas.

Transport infrastructure is required to ensure the benefits of AMID expand into the wider City Region, to help create an Advanced Manufacturing City Region. These range from improvements to the Strategic Road Network to alleviate capacity challenges at M1 Junctions 33 and 34 as part of the SCR Innovation Corridor scheme, to widening of the A630 Sheffield Parkway, through public transport, cycling and walking improvements. This will allow us to build on recent successes such as the arrival of Boeing and McLaren, and attract more global manufacturers to SCR.

We will continue to support the growth of Doncaster Sheffield Airport through enhanced surface access. Following on from recent success and £200m investment to date made by its owners, we will work in partnership with Doncaster Metropolitan Borough Council, private developers and service operators, **to deliver improved bus services and the potential for a new rail connection and station providing connectivity to the ECML. We will also deliver Phase 2 of the Great Yorkshire Way project**, which will complete the direct highway connection from the M18, the first phase of which opened in 2016.

We will continue to develop packages of investment that support and strengthen our city and urban centres. Investment in all our urban centres will be important to ensure our economic success is inclusive. We will also work with local planning authorities to ensure transport and development plans are coordinated and effective. This will help to ensure we can promote sustainable transport choices as part of unlocking significant economic growth. **We will remain a Statutory Consultee for the development of Local Plans and help to ensure collaboration between local planning authorities**.

5.3   CREATE HEALTHY STREETS WHERE PEOPLE FEEL SAFE

Policy 4: Make our streets healthy places where people feel safe

The healthy streets framework puts human health at the heart of planning and consists of ten indicators, which are shown in Figure 5.3. We want our streets to be healthy streets, thereby fulfilling each and every indicator of the healthy streets wheel. In particular, we will take measures to ensure that people feel safe when they travel, particularly when taking sustainable modes of transport, so that we can make these modes more attractive to everyone. We envisage streets with high activity levels, which support regeneration of our town and city centres, and make our neighbourhoods nicer places to live.

Policy 4: Strategic Interventions

We will improve the health of our people through investment in our streets, making them more attractive places for people to use and enjoy. As such, our people will feel more able to lead independent and active lives, particularly for vulnerable groups such as the elderly, children and people suffering from physical and mental disabilities, and sensory impairments.

In accordance with the road user hierarchy which seeks to protect the safety of the most vulnerable users, **we will prioritise cyclists and pedestrians to make our streets safer, cleaner and more pleasant**.

We will invest in our public realm and encourage developers to do the same.

We will also improve the perception of safety and security on our streets and at bus and tram stops, which may involve, for example, new pedestrian crossings, better lighting or better cycling facilities. This will persuade more people to cycle or walk to their destinations, resulting in health benefits for our people.

Major segregated cycle routes into the main urban centres of the city region will be identified to provide safe, direct and convenient access to our towns, cities and interchanges.

Figure 5.3 - Ten indicators of Healthy Streets (Taken from Healthy Streets for London, TfL, 2017)

Policy 5: Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel

We consider sustainable travel to be any mode of transport that is not private, specifically public transport, walking and cycling. Within the sustainable travel term, walking and cycling are also considered active modes, with walking recognised as part of a public transport journey.

By encouraging sustainable travel, we will improve the health of our people, enhance our environment and support our economy by lowering congestion. This emphasis needs to be supported through the assessment of the transport requirements of new development. It is important that development is brought forward in line with the National Planning Policy Framework and that sustainable transport is properly considered and supported in the development of our towns and cities. We also need to consider the potential role of demand management in supporting the growth of our economic centres. Historically car access to the centres has been a priority to support growth. As the roads become increasingly congested it will become more important to examine alternative approaches, such as parking policy changes or some form of user charging, to encourage other forms of travel.

Policy 5: Strategic Interventions

Our transport system works hard to move people around our City Region, but more investment is needed to develop a 21st Century mass transit system that maximises our potential and does our City Region justice. **We will enhance our multi-modal transport system by investing in mass transit improvements**, whether it's tram, train, tram-train, bus rapid transit, or a brand new mode altogether. We also recognise the valuable role that our local bus services make and **will improve our network as a whole so that sustainable modes are more accessible and attractive**. As part of this we will continue to invest in our main transport hubs and interchanges to provide an attractive and safe environment.

A major part of our multi-modal transport system are active travel modes, such as walking and cycling. We recognise the benefits that active modes bring to our society, through physical activity, affordability and sustainability, and we will encourage walking and cycling so that our people can benefit from the advantages they provide. **We will develop an investment plan that removes barriers to walking and cycling** by making our streets safer and more attractive, so that active modes are real choices for more people. **We will examine the role of public transport to make the case for investment in the pedestrian environment**. Walking is part of the public transport journey, but the value of this part of the journey is often ignored.

To improve air quality in the SCR and reduce the reliance on private transport, we must encourage our people to choose greener and healthier forms of transport. **We will invest in schemes that enhance and better connect cycle ways and path ways to our public transport network, enabling people to easily switch from public transport services to cycling or walking**. To achieve this level of mode shift we will focus on investment in public transport and cycling infrastructure over a sustained period, and activities to change behaviour and perceptions of the safety of cycling. This will need to include the allocation of dedicated cycle lanes and supporting infrastructure that complements the overall network strategy of the local highways authority.

We recently secured £7.5m Access Funding to support local projects between 2017 and 2020, **and through this we will deliver local walking and cycling schemes in partnership with local authorities and other partners, while also considering more strategic cycle schemes for the future**.

Policy 6: Improve sustainable and inclusive access to our green and recreational spaces

We are incredibly proud of our green and recreational spaces and we want all of our people to be able to enjoy them. Although most of our green spaces are accessible by car, we will improve access for all, particularly those without access to private vehicles – both residents and tourists.

Furthermore, we want our green and recreational spaces to be healthy spaces, where people want to spend time to improve their health and wellbeing. Therefore we will improve the air quality at these spaces through sustainable travel options and overall reduction in vehicle emissions.

Policy 6: Strategic Interventions

We will ensure that access to green and recreational spaces is provided by sustainable means. To deliver this we will seek to provide services to these areas, either through working with the public transport operators or in other ways. **We will explore the integration of public transport and on-demand services to deliver this**. We will support access to parks by coach, when local and environmental considerations deem this appropriate.

Clearer way-finding, travel planning for residents and visitors, and maintenance of walk and cycle paths will lead to an increase in the number of visitors arriving at these spaces by bike or on foot. Over time, we aspire to link public rights of way into a coherent and accessible network of urban and rural paths.

The need to balance our development and growth ambitions and the need to look after natural resources and assets is also discussed in the Habitats Regulations Assessment. This assessment has been prepared in parallel to this strategy, and is published simultaneously. **In accordance with the Habitats Regulations Assessment it is highlighted here that the polices specified in this strategy do not provide backing to plans or projects that have significant effects on Sites of Importance for Nature Conservation**. All plans or projects that stem from our Transport Strategy will need to comply with the requirements of the Habitats Regulations in terms of their impact on such sites.

5.4   IMPROVE THE QUALITY OF OUR OUTDOORS

Policy 7:   Actively improve air quality, especially in designated AQMAs

Deteriorating air quality in our City Region is a growing issue that threatens the quality of our outdoors, as well as our people's quality of life. To improve the quality of our outdoors we need to address the air quality issues that we have throughout our City Region, and particularly in our urban centres and designated Air Quality Management Areas (AQMAs), where pollutants currently exceed European Union regulations. The National Air Quality Plan[54] sets the wider Government context for this policy as is part of a national response to the air quality challenge.

The role of transport in improving our air quality is significant in terms of vehicle emissions and a step-change in how people travel around our City Region is required if we are to reduce harmful emissions that degrade the quality of our air.

Policy 7:   Strategic Interventions

We will encourage people to adopt sustainable travel modes over private cars to reduce the number of vehicles that use our roads, particularly into our town and city centres. This includes investment in communications technology to reduce the need to travel. The Superfast Broadband scheme in South Yorkshire is part of this, providing more people with access the broadband speeds needed to work away from a main office base.

We will also make our public transport system a zero emission service (including taxis), making it truly sustainable. **We will develop a plan to transition from the current fleet make up to one that is zero emission.** This will include close working with public transport operators to ensure appropriate re-fuelling infrastructure is available as part of the transition.

For all cars we will encourage the uptake of low and zero emission vehicles and reduce the number of unnecessary trips to improve our air quality. We will also develop a plan to address the high level of pollutants resulting from freight and deliveries, including encouraging the use of freight consolidation centres and low emission delivery vehicles. We will map out the refuelling and charging infrastructure that is required by these vehicles. It may also mean introducing and enforcing low emission and clean air zones, and considering different technologies to address challenging areas, such as our strategic road network.

Policy 8:   Deliver a low carbon transport network, including a zero carbon public transport network

Climate change is an international issue, but the onus rests on all City Regions to take a lead in making changes to carbon emissions and to help the UK reach its carbon reduction targets. We will be bold with our approach to carbon emissions now, so that we are a high performing City Region that is not reliant on travel options that do not align with our vision, and are fast becoming out-dated.

Recognising the parallel this policy makes with our policy to improve our air quality, we see reduced dependency on the private car as a key part of the solution, thereby changing the way people travel, and encouraging more sustainable technologies in place of high emission vehicles.

Policy 8:   Strategic Interventions

We will deliver a low carbon transport network by increasing the uptake of sustainable modes, such as public transport, walking and cycling, alongside supporting people in reducing their need to travel through enhanced digital connectivity. **We will encourage private vehicles using our roads to be electric or hybrid, and used for trips that cannot be made by sustainable alternatives.**

We will also deliver a zero carbon public transport network, which requires upgrading the bus fleet and supporting electrification programmes for our railways. **We will work with public transport operators to attract investment in new technologies that can support the transition to a zero carbon network.**

[54] UK plan for tackling roadside nitrogen dioxide concentrations (DEFRA, 2017)

Policy 9: Work in tandem with the planning and development community to create attractive places

Our built environment is vital to the attractiveness and competitive advantage of our City Region. We want to be as proud of our towns and cities as we are of our green spaces, and therefore will work in tandem with the planning and development community to create attractive places, which attract new businesses and new workers, thereby supporting economic growth through the improvement of our urban outdoors.

By working with the planning and development community, investment in our places can be sustainable and long-term, by delivering mixed use development that is planned with public transport at its heart that integrates denser land use with transport service provision. In some cases this may mean reducing the need to travel altogether, or limiting car parking to encourage sustainable travel and reducing the reliance on the private car to achieve mode shift. Ultimately, attractive places that show joined up thinking between town and transport planning will help to retain graduates, attract new investment, and improve our outdoors to the advantage of our whole City Region.

Our rural areas are also important to our attractiveness as a City Region, although need to be treated differently to our urban centres. We will work to improve our rural transport service and work with the planning and development community to find optimum, integrated solutions for development that takes place outside of urban locations.

Policy 9: Strategic Interventions

We will continue the effective working relationship between planning authorities and SYPTE to help ensure that sustainable travel is an important consideration in the growth and development of our built and natural environment. **We will seek support from the development community to ensure the places that are created support and are served by sustainable transport**.

We will continue to work with partners and with the public to design improvements to streetscape and the urban environment. Key examples include the following:

- Improving accessibility and streetscape between the railway station and town centre in Rotherham, and promoting a more vibrant environment through encouraging retail.
- Improving the sense of arrival at Doncaster Railway Station, with improved integration between bus, rail and pedestrian access to the town centre.
- Continuing the transformation of the public realm in Barnsley to link the transport interchange, retail core and strategic development sites.
- Continuing the transformation of Sheffield City Centre by reclaiming highway space to create more attractive places for pedestrians and cyclists.
- The protection and enhancement of heritage sites, to be delivered in consultation with English Heritage.
- The protection and enhancement of green space and public rights of way, such as riverside footpaths, especially where they provide alternative opportunities for active travel.
- The use of green space to alleviate floods and enhance biodiversity.

5.5 PROMOTE, ENABLE AND ADOPT DIFFERENT TECHNOLOGIES

Policy 10: Be at the forefront of transport innovation

We will be bold with our approach to technology, with an open and embracive approach to opportunities to innovate, particularly because it is our aim to become the leading centre in the UK for innovation-led industries and advanced manufacturing. It is from this strong position that we wish to harness the expertise within our unique and growing economy to apply to our own transport network. We will be in a strong position to assist with the advancement of new technologies, as well as a test-bed for emerging solutions.

Policy 10: Strategic Interventions

To do this we will engage actively with the private sector and research institutions to ensure that we can provide optimal conditions so that our City Region can excel with technology opportunities. This may mean the application of bold targets in order to facilitate a move from traditional thinking to new ways of doing things.

We will work with industry and academic partners to develop a programme of research and development activities which embed smart technology and innovation into the transport system of the future. We will learn from what others have already delivered and select interventions that can transform transport provision in our City Region. Through this activity we will make the City Region a magnet for investment in the research and development of transport innovations.

Policy 11: Enable different solutions to create a fully integrated and inclusive transport service

The role of a comprehensive, multi-modal transport system is clear in delivering the goals of this Transport Strategy. We need to be ready to enable different technology solutions to deliver an integrated transport service that focusses less on individual modes or service providers, and more on creating a seamless user experience. As such, we will make the user experience on our sustainable modes more attractive than less sustainable options, such as conventional private cars. This will mean delivering a single operational platform for payment, information and data, and ensuring that the technology keeps up with the pace of change.

It may also mean increasing the use of smart mobility via the internet and mobile devices, allowing people to make more informed decisions about how they travel, and when, which will allow them to reduce their travel time or use their travel time more productively. We will also examine how new solutions can support greater social inclusion and address the affordability of public transport.

Policy 11: Strategic Interventions

We will continue to work with Transport for the North to develop the Smart North programme. This programme will help to deliver an integrated smart payment system across the North. We will work with local public transport operators to encourage continued investment in integrated and smart transport solutions.

We will work with partners, including SYPTE, to develop innovative urban mobility solutions to make public transport more attractive and effective. This will include developing an open source platform that serves as a centralised function for information, ticketing, payment, and data collection and storage. We want one system across the North and will work with local, regional and wider partners to facilitate this.

We will also continue to improve the provision of information systems that meet customer's needs. This will require a mix of in-house and market led approaches to drive innovation and ensure all parts of society can access the services. We will improve the provision of real-time information and work with a range of partners to explore the potential of more dynamic journey information for both public transport and road travel.

We will work with the private and voluntary sectors to examine the potential of new and disruptive transport solutions that respond to the needs of the travelling public and businesses. This will include the role of demand responsive transport, Mobility as a Service and pay-as-you-go city cycling schemes.

Policy 12: Adopt technology solutions to stimulate change

Many of our policies rely on a step-change in travel behaviour in our City Region to deliver our desired outcomes. Recently, the rate of change in transport innovation has been unprecedented, and there are a huge number of opportunities to capitalise on emerging and existing technologies that can stimulate the changes that we want to achieve.

We will be a forward-looking City Region that actively adopts technology solutions in order to support our goals, and to make best use of our existing assets.

Policy 12: Strategic Interventions

We will consider different ways to get more from our transport network, such as smart road management and intelligent mass transit systems. This could also include technology as a means of demand management, for example, applications for smartphones and/or pricing strategies to incentivise certain travel behaviours such as parking control and off-peak travel, increasing remote working capabilities to reduce travel needs, or even considering the role of robotics in freight and deliveries. There may also be opportunities related to 3D printing technologies or drones that help us maintain our transport network more cheaply and efficiently.

We will develop a Technology Roadmap that is linked to our Inclusive Industrial Strategy and sets out the solutions that can have the greatest impact on the transport network. As part of this we will seek to support local research and development organisations to growth the strength of the technology sector located in the City Region. This will enable us to clearly communicate our role in supporting innovation.

6.0 OUTLINE IMPLEMENTATION PLAN

6.1 IMPLEMENTATION ACTIONS

Under each policy we have defined a series of Strategic Interventions. Some of these lead to the delivery of specific schemes, some describe our role to influence other organisations and some describe our need to develop a detailed implementation plan. The following summarises the action we will undertake under each policy to deliver the Transport Strategy. The full implementation plan will be developed separately to the strategy and set out the timing and scope of our actions.

6.1.1 SUPPORT INCLUSIVE ECONOMIC GROWTH

Policy 1: Improve access to jobs, markets, skills and supply chains

We will:
- Produce a SCR HS2 Growth Strategy.
- Work with TfN to progress the northern loop and to feed into the Hybrid Bill for HS2.
- Continue to work with TfN to develop improved highway and rail connections across the Southern Pennines.
- Develop a prioritised connectivity package for the longer term Southern Pennine Corridor road solution when it comes forward.
- Complete the Integrated Public Transport Network study to identify where upgrades to our intra-regional connections are required.
- Support the ongoing programme of upgrades to the Strategic Road Network.
- Encourage Highways England to extend the Smart motorway between M1 J34 and J39 to support significant growth planned around this corridor.

Policy 2: Enhance productivity by making our transport system faster, more reliable and more resilient

We will:
- Continue to press for new trains running on the ECML by 2018 and subsequent line upgrades to support 140mph services as early as possible.
- Continue to make the case for investment on the Midland Mainline to improve the connectivity and resilience of the national rail network.
- Develop the SCR M1 Junction 33-34 Innovation Corridor business case.
- Develop the SCR Mass Transit business case for renewal of our existing Supertram assets.
- Pursue opportunities to influence future franchise arrangements through engagement with Rail North and TfN.
- Complete the Integrated Public Transport Network study and progress a sequenced programme of business cases to deliver the proposals identified.
- Develop a programme of improvements for the Top 20 corridors forecast to experience congestion.
- Bring forward investment on other corridors if there is high value for money and an efficient route to delivery.
- Develop and deliver robust programmes for the renewal of our existing assets.
- Explore options for expansion of Park & Ride provision, including the possibility of tram/train solutions.

Policy 3: Invest in integrated packages of infrastructure to unlock growth and support Local Plans

We will:
- Develop the business case for the SCR M1 Junction 33-34 Innovation Corridor.
- Continue to support the growth of Doncaster Sheffield Airport through enhanced surface access for passengers and freight.
- Deliver Phase 2 of the Great Yorkshire Way project.
- Continue to develop packages of investment that support and strengthen our city and urban centres.
- Remain a Statutory Consultee for the development of Local Plans and help to ensure collaboration between local planning authorities.

6.1.2 CREATE HEALTHY STREETS WHERE PEOPLE FEEL SAFE

Policy 4: Make our streets healthy places where people feel safe

We will:
- Review our street hierarchies and seek to prioritise cyclists and pedestrians over cars in some places in order to make our streets safer, cleaner and more pleasant.
- Invest in our public realm and encourage developers to do the same.
- Invest in high quality cycle routes into our town and city centres.
- Deliver the "worst first" casualty reduction and safety perception programme and road safety education training and publicity.
- Continue to deliver travel behavioural change programmes.

Policy 5: Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel

We will:
- Enhance our multi-modal transport system by investing in mass transit improvements.
- Examine the role of public transport in supporting investment in the pedestrian environment.
- Invest in schemes that enhance and better connect cycle ways and path ways to our Public Transport Network, enabling people to easily switch from public transport services to cycling or walking.
- Deliver local walking and cycling schemes in partnership with local authorities and other partners.
- Develop and deliver a long-term programme of strategic cycle schemes.

Policy 6: Improve sustainable and inclusive access to our green and recreational spaces

- We will explore the integration of public transport and on-demand services.

6.13 IMPROVE THE QUALITY OF OUR OUTDOORS

Policy 7: Actively improve air quality, especially in designated AQMAs

We will:
- Encourage people to adopt sustainable travel modes over private cars to reduce the number of vehicles that use our roads, particularly into our town and city centres.
- Map out the refuelling and charging infrastructure that is required to support an increase in low and zero emission vehicles.
- Develop a plan to transition from the current public transport fleet make up to one that is zero emission.
- Develop a plan to address the high level of pollutants resulting from freight and deliveries.

Policy 8: Deliver a low carbon transport network, including a zero carbon public transport network

We will:
- Encourage private vehicles using our roads to be electric or hybrid, and used for trips that cannot be made by sustainable alternatives.
- Work with public transport operators to attract investment in new technologies that can support the transition to a zero carbon network.
- Develop and support the delivery of suitable refuelling infrastructure and a charging network, in line with market demand.

Policy 9: Work in tandem with the planning and development community to create attractive places

We will:
- Seek support from the development community to ensure the places that are created support and are served by sustainable transport.
- Continue to work with partners and the public to design improvements to streetscape and the urban environment.

6.14   PROMOTE, ENABLE AND ADOPT DIFFERENT TECHNOLOGIES

Policy 10: Be at the forefront of transport innovation

- We will work with industry and academic partners to develop a programme of research and development activities which embed smart technology and innovation into the transport system of the future.

Policy 11: Enable different solutions to create a fully integrated and inclusive transport service

We will:
- Continue to work with Transport for the North to develop the Smart North programme.
- Continue to improve the provision of information systems that meet customer's needs.
- Improve the provision of real-time information and work with a range of partners explore the potential of more dynamic journey information for both public transport and road travel.
- Work with the private and voluntary sectors to examine the potential of new and disruptive transport solutions that respond to the needs of the travelling public and businesses.

Policy 12: Adopt technology solutions to stimulate change

- We will develop a Technology Roadmap that is linked to our Inclusive Industrial Strategy and sets out the solutions that can have the greatest impact on the transport network.

The actions described above create a programme of activity to deliver the Transport Strategy. We will work with Partners and Stakeholders to further develop the timing of activities. As part of this we will examine opportunities to secure funding to develop and deliver the programme.

6.2   CONDITIONAL OUTCOMES

Our approach to delivery of transport schemes, and monitoring and evaluating our progress against this Strategy, will be set out in an Implementation Plan. The selection of schemes will be informed by the contribution they make to achieving the Conditional Outcomes which we have developed for each Goal and are described below:

Support inclusive economic growth

> **Increase GVA by £500m through increasing the number of economically active people living within 30 minutes of key employment locations and universities by public transport**
>
> Our Strategic Economic Plan identified growth areas and urban centres in our City Region, which are also our key employment and university locations. At the moment, 45% of our economically active population live within a 30 minute journey of these locations by public transport. If we can increase that to 64% through improved connectivity, we estimate that this will contribute an extra £500m GVA to our economy.
>
> **Increase rail commuter flows with Greater Manchester and Leeds City Regions by 4,950 incoming & 7,400 outgoing residents**
>
> There are currently around 2,450 people commuting from SCR to LCR and Greater Manchester, and 1,120 people making those journeys in the other direction. With NPR and HS2 proposals alone, this could increase the number of inter-regional commuters. Furthermore, as our economy grows and we increase our employment opportunities, we could increase the proportion of inter-regional commuters incoming to SCR (rather than leaving to work in Manchester and Leeds City Regions). Our targets are for 4,950 incoming and 7,400 outgoing residents daily.
>
> **90% of our population located within 1.5 hour journey time by public transport of an international airport that offers long-haul flights**
>
> The international airports in the vicinity of the north that currently offer long-haul flights are Manchester International and Birmingham International. Only 2% of our population is currently within a 1.5 hour journey of either airport by public transport.
>
> Passenger growth forecasts for Doncaster-Sheffield Airport indicate that it will offer long-haul flights by 2040. By investing in our mass transit system and transport infrastructure, at least 90% of people living in our City Region should be able to access one of the three airports in less than 1.5 hours by public transport. This significant improvement in international connectivity will make our City Region a more attractive place to live and work, and attract more businesses with global markets, providing a major boost to our economy.
>
> **Increase productivity by £500m through reducing delays on our transport network**
>
> Without intervention, road congestion and rail delays in the future will create a cost to our economy as people are unable to use the additional travel time productively. Through transport improvements such as increasing road and rail capacity, demand management, improving efficiency and generating alternative travel options, we will reduce the level of delay on our transport network by £500m by 2040.
>
> **70% of people living in the most deprived areas are brought within a 30 minute journey time by public transport of an urban centre, growth area or university**
>
> We want economic growth in our City Region to be inclusive, and one measure is to increase access to employment, education and training opportunities for the most deprived areas by public transport (public transport is generally a more inclusive mode of transport than private vehicles). At the moment, 55% of our residents living in the 10% most deprived areas can access a key employment location or university within 30 minutes. We can increase this to 70% through investing in our transport system, improving accessibility throughout our City Region.

Achieve mode share targets of 47% private car, 33% public transport, 9% walking and 11% cycling

Our current travel to work mode share is 71% private transport, 17% public transport, 9% walking and 2% cycling.

By investing and encouraging the use of sustainable modes, we will deliver a future mode share of 47% private car, 33% public transport, 9% walking and 11% cycling. Compared to the other cities, our mode share targets are achievable and ambitious.

95% public opinion that our local transport choices feel safe

Public perception of safety can be a significant barrier to encouraging more people to use sustainable travel choices. Even if the official record of safety is good, if people don't feel safe they will not want to use the service. In 2015, 94% of Supertram and 83% of South Yorkshire bus users said that they felt safe when they used the service. We aim to increase this to 95%.

Reduction of reported casualty rate of 6% pedestrians, 3% cycles, 3% private transport and 7% public transport

While the perception of safety concerns local transport users, reported collisions are still important in giving the wider picture of safety across our transport network, including our streets.

Create healthy streets where people feel safe

Eliminate AQMAs in our City Region

Our City Region currently has 29 AQMAs for high Particulate Matter (PM10) and Nitrogen dioxide (NO_2), which are locations where the national air quality objectives / European Directive Limits are not likely to be achieved. In addition, the Government's National Air Quality Plan (NAQP)[4] aims to improve air quality in those cities and towns which make the greatest contribution to the NO_2 problem. We are required to reduce NO_2 below the statutory annual average mean of 40µg/m³ in the "shortest possible time" with significant improvement required by 2021. Over the life of this plan we want to eliminate AQMAs in our City Region.

Reduce tailpipe carbon emissions in line with targets for the UK and have a zero carbon public transport network by 2040

The UK has legally binding carbon budgets, which place restrictions on the total amount of greenhouse gases that the UK can emit over a 5-year period. By reducing the use of conventional vehicles on our network we will play our part in contributing to the UK's carbon budgets, thereby reducing tailpipe carbon emissions in line with the UK targets, including a zero carbon public transport network by 2040.

Increase footfall in the main retail and leisure areas within our urban centres by 15% through improvements to our public realm

An increasing body of evidence exists to suggest that public realm improvements lead to increased footfall, which in turn creates an economic benefit through more consumer spending in shops and restaurants, as well as supporting regeneration, healthy streets and greater attraction for potential employers, employees and tourists.

Therefore, through improving our public realm at main retail and leisure areas within our urban centres we will increase footfall by 15% in 2040. Where data is readily available we will also examine change in the dwell time to support the evaluation of public realm improvements.
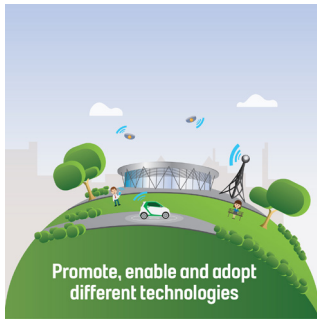
Improve the quality of our outdoors

Promote, enable and adopt different technologies

£330m cumulative additional transport-focussed research and development investment within our City Region

To be at the forefront of transport innovation and to adopt technology solutions to stimulate change, we will encourage transport-focussed research and development investment in our City Region. By taking the cost of the tram-train pilot project as a marker, we will aim to see an average of £15m a year invested in transport innovation.

Increase productivity by £75m through technology-based efficiencies

Through the provision of effective and widespread real-time information, and integrated smart ticketing, technology-based efficiencies can increase the productivity of travel time through reduced time waiting for buses and trams, and quicker boarding time on all public transport modes. The benefit of reducing travel time in this way will lead to a £75m productivity benefit to our economy.

6.3   DEVELOPMENT OF THE IMPLEMENTATION PLAN

The further development of an Implementation Plan will build on the following principles:

- We will develop a prioritised programme of transport schemes in partnership with the highway authorities, SYPTE and other stakeholders. This will be comprised of schemes developed in response to the policies and strategic interventions described.

- A commissioning process will be adopted to identify those schemes that should be contained in the programme, based on the contribution that each scheme makes to achieving the conditional outcomes set out in this Strategy, and the strategic objectives of the City Region. The suite of Strategic Testing Tools, which are currently being developed and updated, will be used to assess the benefits that each scheme will bring. This commissioning process will be defined and managed by the City Region in accordance with the SCR Assurance and Accountability Framework.

- A prioritised programme will be developed that ensures that those schemes that offer greatest benefit are implemented first, subject to funding availability and scheme deliverability.

- Progress reviews will be undertaken to understand the balance of progress across all policy areas. This will help to establish if action is required to strengthen delivery under any policy area.

- The funding and financing options available to deliver the programme will be evaluated to establish the funding envelope for the programme, and hence the schemes it contains.

- Recognising that the approach to implementation of the Strategy must be adaptable over time, it is envisaged that programme development will be an iterative process over the lifetime of the Strategy. However, a structured process for reviewing and updating the programme will be established to provide a rolling programme of committed schemes (e.g. over a 5 year period). This will ensure that funding can be committed to those schemes that will be delivered in the near term (e.g. 1 - 5 years), offering certainty to scheme promoters and giving investors the confidence that will lead to increased economic growth.

- The process for governance and management of the transport programme will be set out. It is envisaged that SCRCA will be responsible for defining and committing funding to the programme. SCRCA may elect to provide Transport Executive Board (TEB) with the authority to administer the programme on their behalf, within the SCR Assurance and Accountability Framework. The scheme commissioning, programme management and supporting administrative functions would be provided by the SCR Executive.

- The procedures for data collection, monitoring and evaluation to assess the transport network baseline, and changes in the performance of the network over time, will be defined. The resources, responsibilities and operational structures needed to achieve this will also be established. This will allow progress against achieving the conditional outcomes to be measured and reported on an annual basis, shaping the future programme of investment in the transport network.