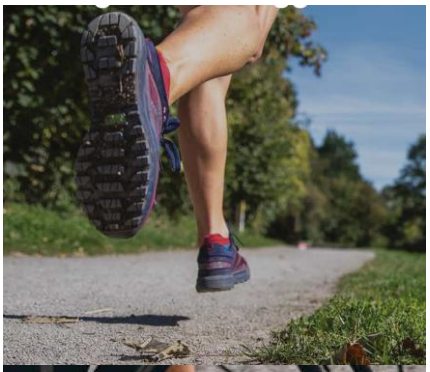
MAYOR DAN JARVIS
SHEFFIELD CITY REGION

SHEFFIELD CITY REGION TRANSFORMING CITIES FUND TRANCHE 2 BUSINESS CASE



Sheffield City Region

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TRANSFORMING CITIES FUND
TRANCHE 2 BUSINESS CASE

1. INTRODUCTION

Sheffield City Region (SCR) is one of 12 shortlisted areas invited by Government to develop a business case for the Transforming Cities Fund (TCF). The fund aims to improve productivity and spread prosperity through investment in public and sustainable transport in some of the largest English city regions.

The SCR TCF Prospectus was submitted to Government in July 2018 and sets out how TCF investment is crucial in providing early momentum to the development of a vision and programme of investment that will create a globally significant corridor of innovation within the City Region (the "Global Innovation Corridor").

The SCR is currently a £34 billion economy, but the Strategic Economic Plan (SEP) identifies that by 2040 it could be a £55 billion economy with the right infrastructure. The ambition is to build an economy characterised by global excellence in advanced manufacturing and engineering, superb national and international connectivity, with thriving urban centres and well-connected communities. The assets and capabilities within the Global Innovation Corridor will provide strong foundations for further growth, if the sustainable transport connectivity is right.

However, the SCR's transport system and its supporting infrastructure is not fit for the 21st century – there is an existing trend of car commuting and declining bus use that will continue if no action is taken. The links between neighbourhoods and urban centres are not good enough and residents can struggle to get to work. Increased car use and the resulting congestion will only serve to increase the severe detrimental impact on the SCR's air quality and hence the health of its residents at a time when a climate emergency has also been declared across the City Region.

Accessing major employment sites and land available for development is and will be, restricted by unconstrained car use, which could stifle any immediate economic growth, resulting in a drag on productivity, competitiveness and a great underutilisation of talent and skills. This is illustrated in Figure 1.1.

At the same time, the use of active travel modes – walking and cycling – is relatively low, predominantly as a result of a lack of infrastructure, but also through a perception of poor safety. Cycle mode share for trips to work of less than 5km in length is between 2 and 3% and although walking is the predominant mode for trips less than 1km in length, the reliance on car travel for short trips is still high, adding to congestion and air quality issues, now and in the future if the situation does not change.

Therefore, there is a clear need to take action now to improve the opportunities for people to use public transport and active modes. These modes need to become the preferred choice of travel for increasing numbers of people across the SCR, linked to the identified growth and employment opportunities, but also for leisure trips.

To address existing public transport issues, the Sheffield City Region Integrated Public Transport (SCRIPT) study identified 20 corridors across the SCR (16 in South Yorkshire) that would better connect the main urban centres, current and future economic assets and areas of housing growth. The corridors are shown in Figure 1.2. The SCRIPT work also identified four macro 'strategic transit corridors' across SCR when clustered together, three of which are in South Yorkshire. These corridors were identified in the TCF Prospectus and are shown in Figure 1.3 – covering the Rover Don, the Dearne Valley and the Advanced Manufacturing Innovation District (AMID) – together forming the Global Innovation Corridor.

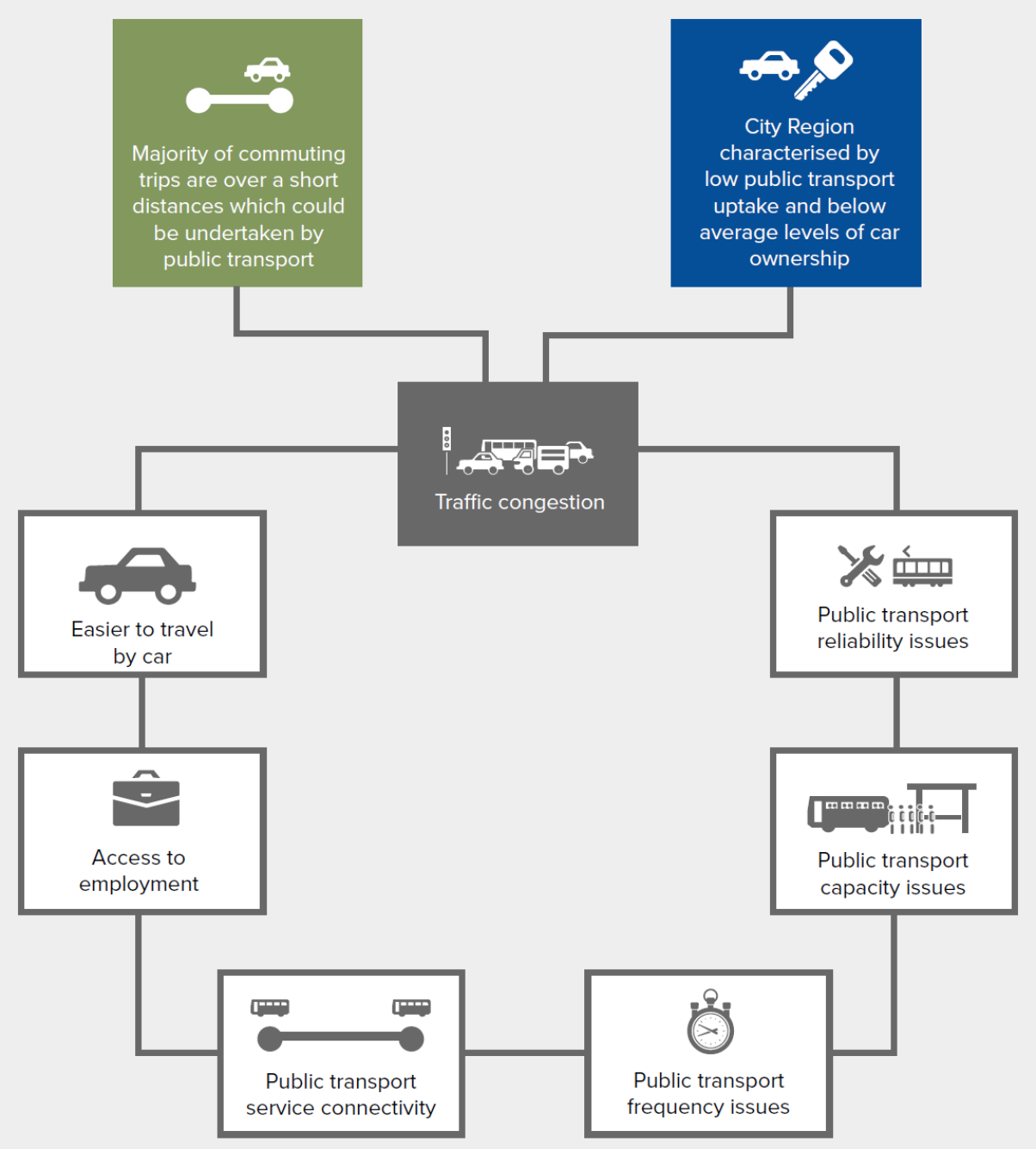


Figure 1.1 – Existing Transport Issues in the SCR

In addition, an increase in the use of active travel modes will also play a significant role in overcoming existing transport issues and supporting economic growth. The Mayor's appointment of an Active Travel Commissioner is a statement of this intention to promote active travel to improve social connectedness and improve the health and quality of life of the SCR's residents, which in turn will lead to a more productive workforce. The Active Travel Commissioner has developed four pledges that are informing the production of an Active Travel Implementation Plan. This document builds on the recent production of a draft Local Cycling and Walking Infrastructure Plan (LCWIP), providing further strong evidence for the programmes of work within the SCR's TCF programme. The emerging priorities in the LCWIP emphasise the need to improve access to the SCR's urban centres and the identified growth and employment opportunities, with all active travel infrastructure meeting or exceeding an agreed set of minimum standards.

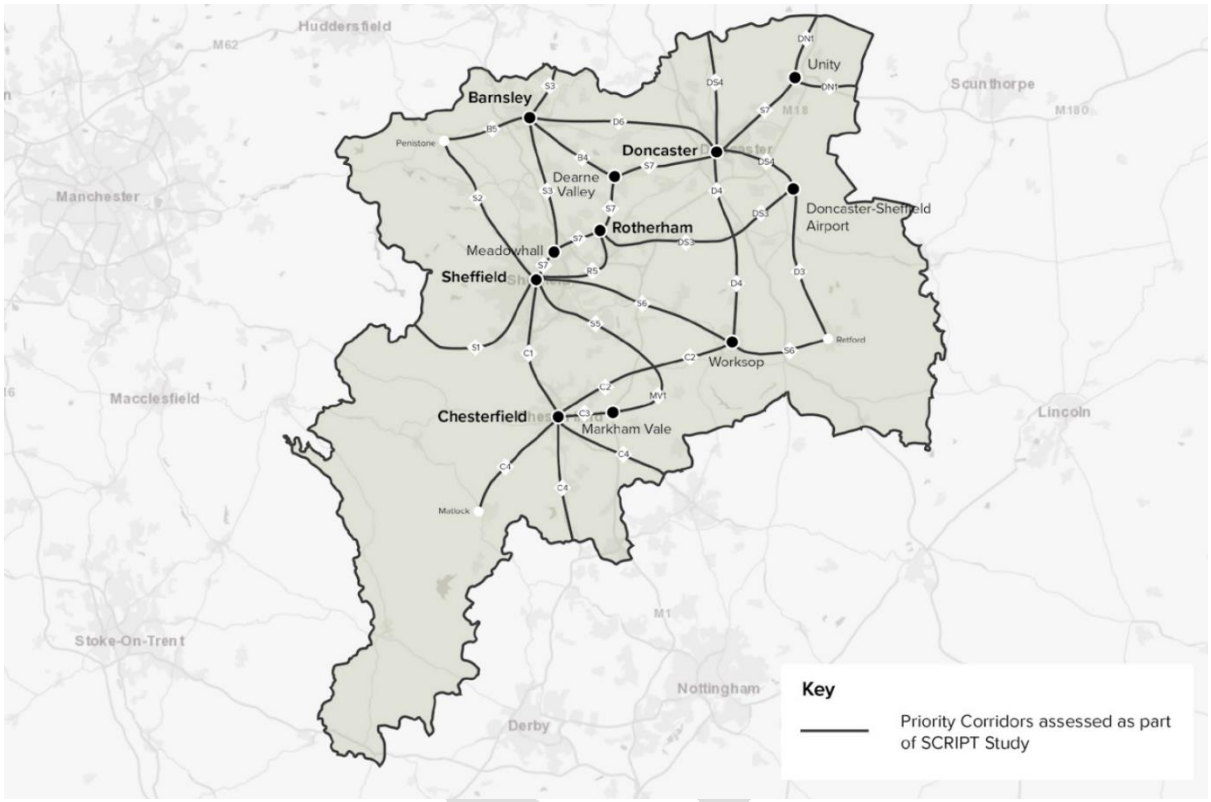


Figure 1.2 – SCRIPT Corridors

Figure 1.3 – TCF Priority Corridors

Although improving sustainable access to growth and employment opportunities for all of the SCR's residents is a clear objective, there is a number of areas across the City Region where the opportunities that have been identified could have the greatest impact on existing levels of deprivation – these are the areas that currently experience "transport poverty". This is defined as an area of high deprivation where both public transport uptake and car ownership are low. Some 108,000 people that experience transport poverty currently live in the areas defined by the three priority corridors included in the TCF Prospectus and Figure

1.4 shows the relationship between the identified areas of transport poverty and some of the larger growth areas across the SCR.

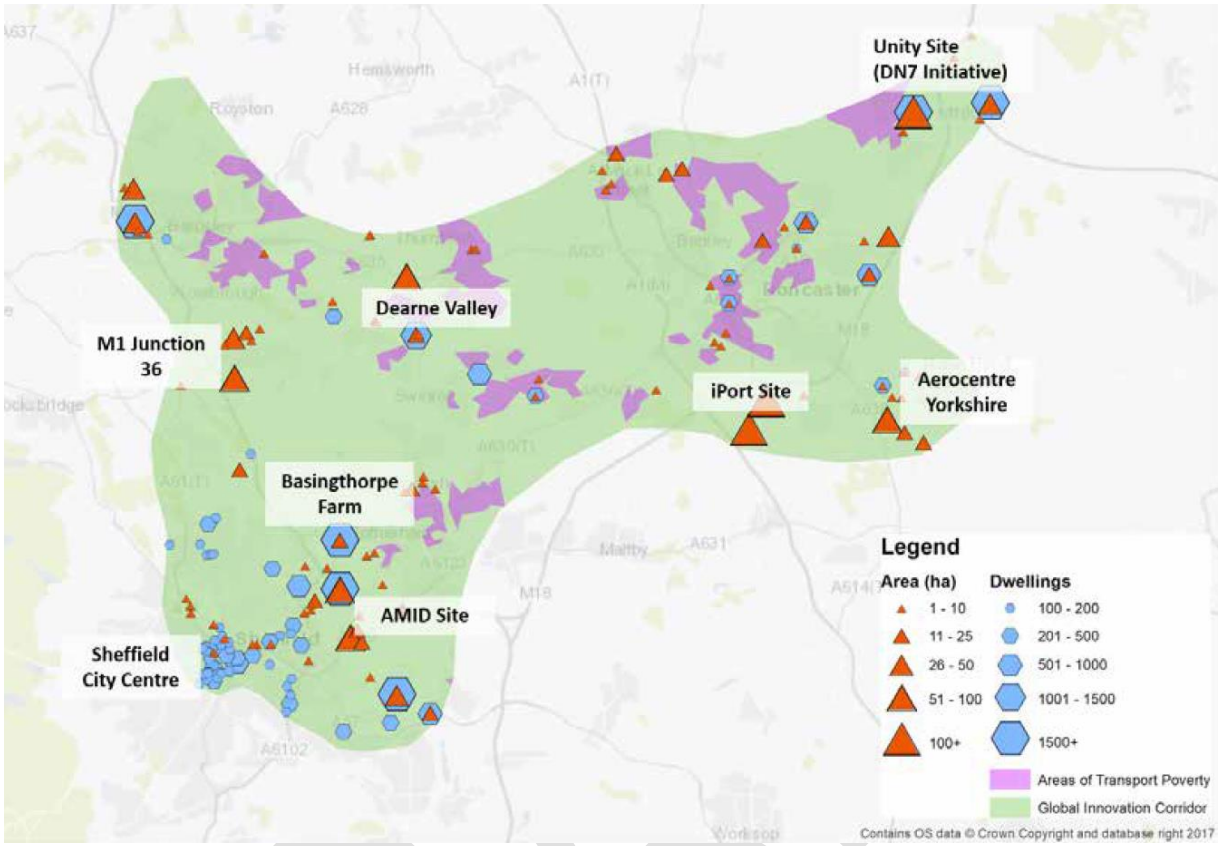


Figure 1.4 – Areas of Transport Poverty and Key Development Sites in the SCR

Therefore, the overall aim of this TCF Tranche 2 bid is to promote a series of interventions that contribute towards the SCR's objective to improve intra-city region connections that either:

- Connect areas of deprivation/transport poverty to areas of economic opportunity by public transport and active travel modes; or
- Seek to achieve significant mode shift away from the private car on key corridors and in areas where future growth ambitions and improved health and air quality would otherwise be compromised.

This is entirely in line with the core policy objectives of the TCF as set out in the guidance for bidding areas.

This document sets out the business case illustrating how the planned economic growth in the SCR can be accelerated through targeted investment in public transport and active travel mode connectivity. The business case is consistent with the Mayor's Vision for Transport, the recently adopted SCR Transport Strategy and the policies of the South Yorkshire Local Authorities. It has a strong link to the Transport for the North (TfN) Strategic Transport Plan the Northern Powerhouse and the Government's Stronger Towns agenda and Industrial Strategy.

This business case clearly demonstrates that there is a strong and robust case for investment in the SCR's identified TCF programme. It is therefore recommended that the bid is prioritised for funding so that the many benefits that it will deliver across the City Region can be realised as soon as possible.

2. STRATEGIC CASE

INTRODUCTION

This section examines the existing characteristics of the SCR and the targeted corridors, sets out the transport barriers identified (both current and future), identifies the objectives and summarises the options that have been considered. It therefore demonstrates the case for change – that is, the rationale for investment.

It also identifies the strong policy alignment, particularly the core objectives of the TCF:

- Invest in new local transport infrastructure to boost productivity
- Improve public transport and sustainable transport connectivity
- Improve access to employment sites, Enterprise Zones, development sites, or an urban centre that offers particular growth/employment opportunities.

It has been prepared with particular reference to the Department for Transport's (DfT) Strategic Case Supplementary Guidance: Rebalancing Toolkit (December 2017), which is designed to help authors of strategic cases assess how a programme or project fits with the objective of spreading growth across the country, and also introduces a framework for presenting the rebalancing case more consistently.

The key points from the Strategic Case are as follows:

- The SCR is polycentric city region, not a classic mono-centric conurbation in the manner of Greater Manchester, Bristol or Glasgow.
- The SCR LEP area is home to 1.8 million people, with 68,000 businesses, providing 847,000 jobs and an annual Gross Value Added (GVA) of around £34 billion.
- By 2040, the SCR could be a £55 billion economy with the right infrastructure, however, at a number of key locations, economic growth is constrained by a lack of appropriate infrastructure, particularly for public transport and active modes.
- Without future intervention, delays will increase, and journey time reliability will deteriorate, presenting further barriers to economic growth and potentially damaging the existing economy, as well as having a severe detrimental impact on the SCR's air quality and hence the health of its residents at a time when a climate emergency has also been declared across the City Region.
- There is a clear need to take action now to improve the opportunities for people to use public transport and active modes and to make these modes the preferred choice of travel for increasing numbers of people across the SCR, linked to the identified growth and employment opportunities..
- The biggest opportunity for return on future transport investment, including this TCF bid, is to better connect the areas of transport poverty with those areas of opportunity by public transport and active modes, allied to achieving significant mode shift away from the private car on key corridors that could stifle future growth ambitions.

SETTING THE CONTEXT

The SCR is polycentric city region, including the city of Sheffield, the fourth largest in England, and the surrounding towns of Barnsley, Rotherham and Doncaster (the largest metropolitan authority in the country). It is not a classic mono-centric conurbation in the manner of Greater Manchester, Bristol or Glasgow – this reflects the economic history and the dominance of industries such as coal mining which led to very strong local economies. The wider SCR Local Enterprise Partnership (LEP) area also includes Bassetlaw, Bolsover, Chesterfield, Derbyshire Dales, North East Derbyshire.

The SCR LEP area is home to 1.8 million people, with 68,000 businesses, providing 847,000 jobs and an annual Gross Value Added (GVA) of around £34 billion. With world-class specialisms in advanced manufacturing, the City Region is at the forefront of innovation and a major driver of economic growth as it develops its advanced manufacturing and engineering capabilities.

The nine SCR districts form a coherent and well defined functional economic area, and all of the places and districts, be they urban or rural, make an important and different contribution to the City Region's performance. The different economic roles of places in the SCR are illustrated in Figure 2.1, with the following paragraphs providing more detail on the roles of the four urban centres in South Yorkshire.

Barnsley: A well-established town with strong economic links to both Sheffield and Leeds City Region. Barnsley has a strong vision coupled with an ambitious adopted Local Plan. It is committed to focusing investment to achieve a thriving and vibrant economy, that people achieve their potential and that strong and resilient communities are created. Significant new land supply in strategic growth areas has helped to improve the recent economic performance of the Borough. The town centre is undergoing significant transformation via the £180m Glassworks investment programme, and there are a number of economic and housing regeneration projects are well underway, including major investment in the strategic development sites around M1 Junction 36 to the south west of the town centre, and significant business and housing growth plans in the Dearne Valley to the east of the Borough.

Doncaster: A high quality urban centre with attractive retail opportunities and excellent rail links. To the south east of Doncaster is the SCR's international airport and the rapidly developing logistics centre, iPort, which is expected to create 5,800 jobs when fully developed. Doncaster also has several key regeneration and development opportunities, including Unity to the north east of the town centre (which includes Don Valley power station and potential low carbon business parks).

Rotherham: Closely linked to Sheffield, with a strong economic and employment base, and benefiting from a large employment boost in the last growth period, Rotherham is divided into three major economic areas – the town centre, with an economic corridor running through the Don Valley toward Sheffield, which is a key employment centre; the Dearne Valley to the north, which has seen the growth and development of a new business community; and the rural hinterland to the south east.

Sheffield: The UK's fourth largest city, home to two Universities with over 60,000 students, is the only major city in the UK with a national park within the city boundary. It is the City Region's hub for Knowledge, Creative and Digital Industries, Leisure, Higher Education, Culture, and Financial & Professional Services sectors. Heart of the City II is a key regeneration project underway in the City Centre – the 7 hectare development will provide further Grade A office space, two 4 or 5-star hotels, residential developments, restaurants

and cafés, leisure destinations, parking and stunning public realm. The Advanced Manufacturing Innovation District connects Sheffield, Rotherham and the Lower Don Valley and is a 2,000 acre centre of excellence in metals and materials manufacturing and home to two of the UK Government's High Value Manufacturing Catapult centres.

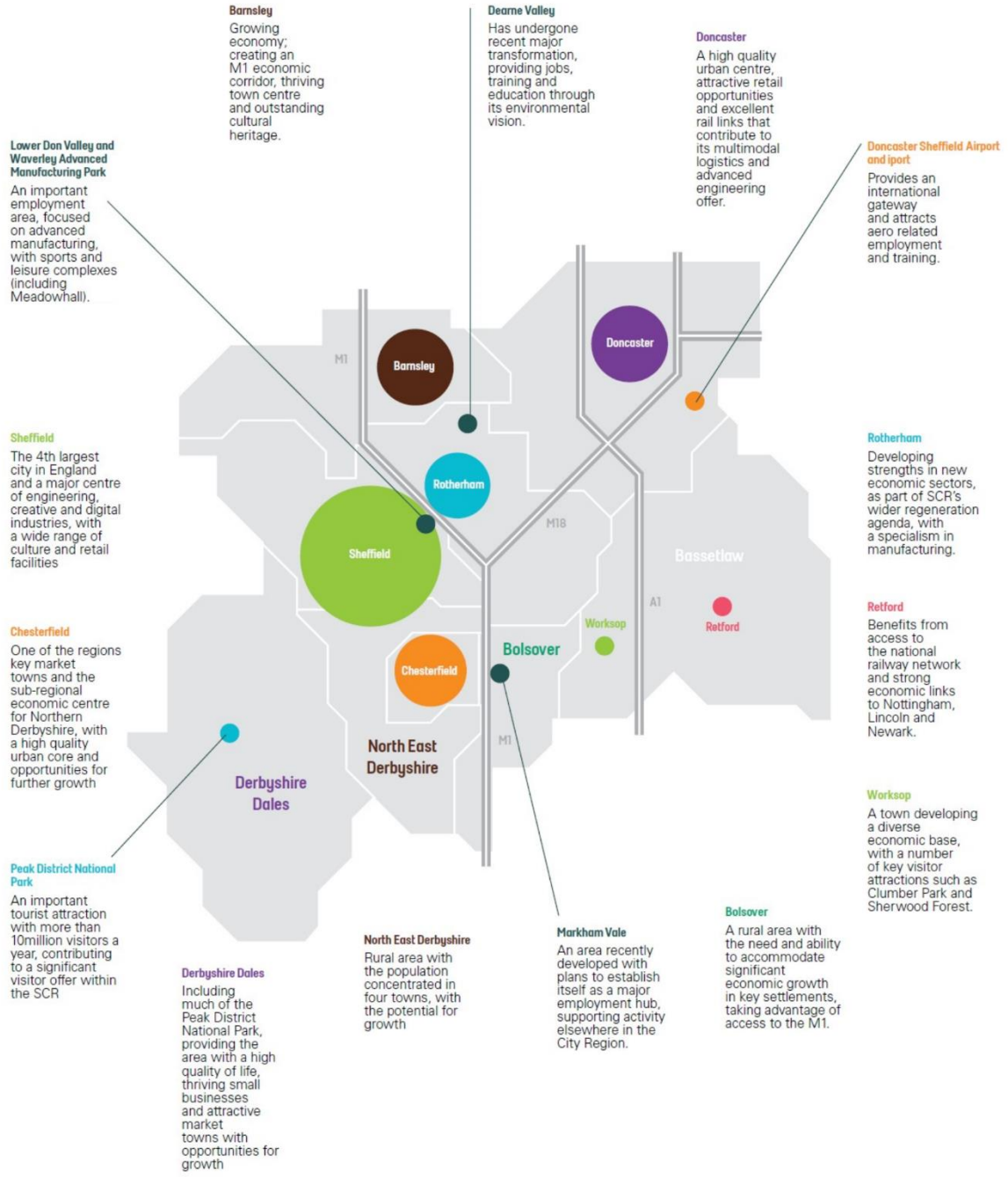


Figure 2.1 – Sheffield City Region

Other significant economic strengths in the SCR include:

- Strategic central location – at the heart of the UK with connectivity via the M1 and A1(M) motorways and mainline stations on the East Coast and Midland Mainlines to regional and national markets, and international markets from Doncaster Sheffield Airport (DSA)
- Two Universities with world class research capabilities and the country's largest engineering department and a state-of-the-art High Speed Rail College in Doncaster
- Home to the Advanced Manufacturing Innovation District (AMID) in Rotherham and Sheffield, a 2,000 acre centre of excellence for innovation-led research and industrial collaboration, boasting exemplar models of university and industry collaboration in metals, materials, health technology and wellness
- A potential workforce of 950,000, with more than 120,000 jobs in the knowledge and data driven economy
- A flexible and adaptable base of SME companies focused on business to business supply chain
- A proposed HS2/Northern Powerhouse Rail (NPR) station, with two others proposed on the NPR corridor between Sheffield and Leeds (at Rotherham and Barnsley Dearne Valley)
- A significant visitor economy including the Peak District National Park, Chatsworth, Wentworth Woodhouse and several acclaimed cultural venues including the Crucible Theatre
- Capacity for additional development of employment and housing land.

These strengths provide solid foundations for further growth. The current Strategic Economic Plan (SEP) identifies that by 2040, the SCR could be a £55 billion economy with the right infrastructure, driven by the creation of 70,000 new private sector jobs and 6,000 new businesses. The SCR has shown a gain of 37,000 jobs between 2014 and 2017, and by 2017, activity led by the SCR LEP and the Combined Authority had already contributed 16,000 new jobs to the economy and leveraged approximately £318 million of private sector investment. Therefore, the targets within the SEP are seen as robust and realistic.

However, despite the strengths and progress made, the SCR Independent Economic Review, produced in 2013, highlighted the stark nature of the challenges the City Region faces due to its industrial legacy and the ongoing transition from an economic base previously dominated by coal and steel. During the growth cycle of 1998 to 2008, the SCR was the only City Region to experience a net decrease in private sector employment. The recession and relatively flat performance of the UK economy since 2008 have not helped the SCR achieve the transformation that it needs.

The City Region needs an outward looking and restructured inclusive economy which contains a greater number of businesses and which generates more exports and better employment opportunities. The SEP identified that the SCR needs a bigger and stronger private sector, which will lead to a growth in the number of jobs in City Region, a higher level of GVA and a restructured economy. Realising these ambitions will transform performance and thus the contribution of the SCR to the UK economy.

Overall, each of the local economies and the identified growth areas has a role to play within the City Region and each will make an important contribution to future growth. Making further progress in addressing the challenges and issues which are specific to local areas will help to boost the overall economic resilience of the City Region and its attractiveness as a place to live, work, play and visit. The following paragraphs explore some of the key economic and connectivity challenges for the SCR, with a focus on the four South Yorkshire Districts that form the basis of this TCF bid.

The SCR has low productivity despite a sizeable economy ...

Despite being the 10th largest LEP area by population and 16th largest LEP economy, in 2016 SCR ranked 34th out of 38 LEP areas in England for GVA per head and GVA per filled job. GVA per head in the SCR is currently £18,370, which is well below the UK average (£26,580) and £5,000 lower than the UK average even when excluding London (£23,774). SCR's productivity is lower than comparator Northern LEPs such as Derby, Derbyshire, Nottingham and Nottinghamshire, Liverpool City Region and Tees Valley, as shown in Figure 2.2.

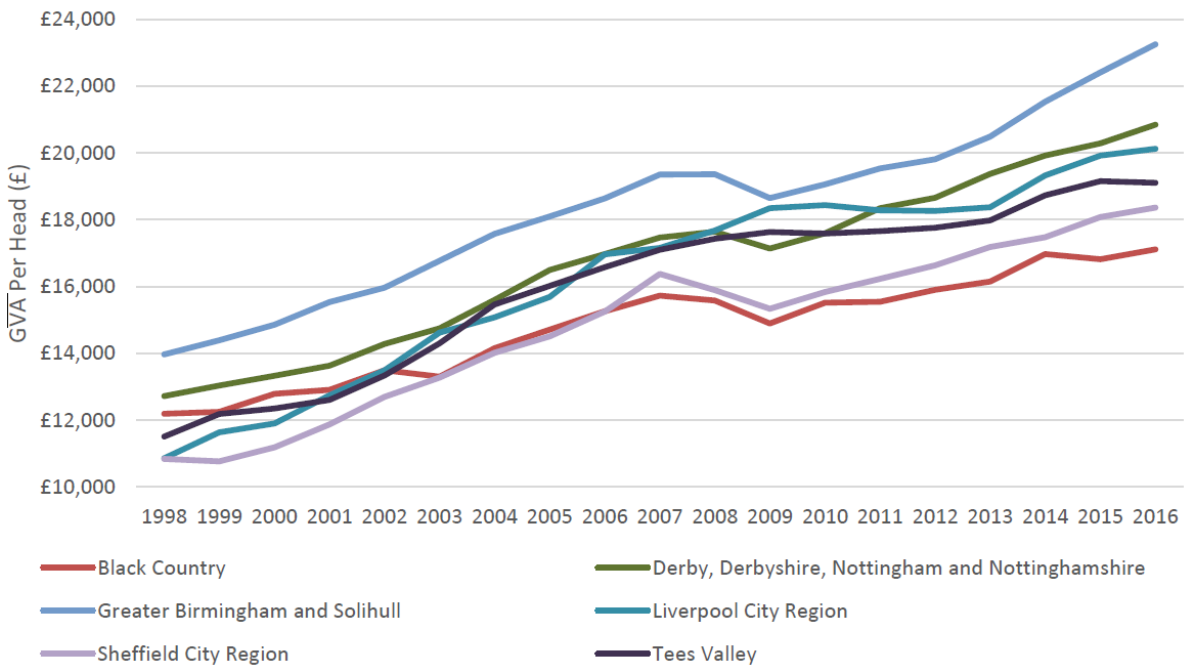


Figure 2.2 – GVA per Head for Comparator City Regions

GVA per employee and mean earnings are 18% and 17% below the national average respectively.

The UK-wide productivity challenge affects all SCR sectors and reflects the low proportion of people employed in higher skilled occupations in the City Region and the need for a wider range of people to access such jobs.

This shows that there is still much to do to address the failures of our current transport system that limits the flow of ideas, people and business between the urban areas and major employment sites, and which acts as a drag on productivity, competitiveness and skills utilisation.

There is a high economic inactivity, unemployment and NEET rate in the SCR …

The overall employment rate in the SCR is 1.8% below the national average. There are 47,900 residents in the SCR who are unemployed. Of more concern than the absolute employment figure is economic inactivity – the SCR has the 11th highest economic inactivity rates across all LEPs. This is, and has been, a persistent and pernicious challenge for the City Region since de-industrialisation in the 1980s. By September 2018, SCR had 260,200 economically inactive residents. Of this total, 82,600 people (31.7 compared to 21.4%

nationally) want a job, an indication of the opportunity available if the economic conditions can be improved.

Within this, the most immediate concern for the City Region is the emergence of youth unemployment – approximately 16,300 16-24 year olds in the SCR are unemployed, which is 40.1% of the total working age unemployment. Not only is the cost to the local economy significant, but the cost to the individual young person can be considerable with long periods of unemployment in the early years of adulthood correlating to a pattern of 'wage scarring' (reduced lifetime earnings), further periods of worklessness and reduced life chances as represented by almost all key social and health indicators.

In part, the origins of youth unemployment can be found in the high level of 16-18 year olds in the SCR who are Not in Education, Employment or Training (NEET) – at present this is some 3,700 people. 44% of young people leave school without five good GCSEs (including English and Maths). The NEET level for the SCR continues to exceed the national average.

This converts into unacceptably high levels of unemployment for 18-24 year olds. Since 2008, youth unemployment has more than doubled and 18-24 year olds are more than twice as likely to be unemployed than their older counterparts. However, since its peak in September 2012, the number of long term benefits claimants in that age bracket has decreased.

For young people, a lack of affordable transport options can act as a significant barrier to finding employment, and our transport system needs to ensure that we provide real and affordable choices for all of our residents, especially given the SCR's local sectoral/industry specialisms in transport that provide the opportunity for greater innovation and should appeal directly to young people.

There are pockets of high deprivation across the SCR …

There are significant areas of deprivation across the SCR and also significant disparities between the levels of deprivation in different parts of the City Region, as illustrated in Figure 2.3. Too many of the SCR's citizens are distant from the labour market and everyday services, given the dispersed settlement pattern across the SCR, not in employment or training, are experiencing poor physical or mental health, or have low or no skills to help them get better jobs. Low productivity, health and deprivation are related.

Deprivation is also compounded by:

- The disproportionate number of low skilled residents in low paid, fragile and often part-time work
- Levels of economic inactivity above the national average
- A growing problem of long term unemployment
- A cycle of intergenerational unemployment and poverty and poor health.

A Resolution Foundation study has found that SCR has the highest proportion of people in low paid work and below the recommended living wage (24%).

Again, we need to ensure that nobody is preventing from becoming economically active as a result of our transport network, with a focus on improving those connections between the areas of greatest need and those of new opportunities across the SCR.

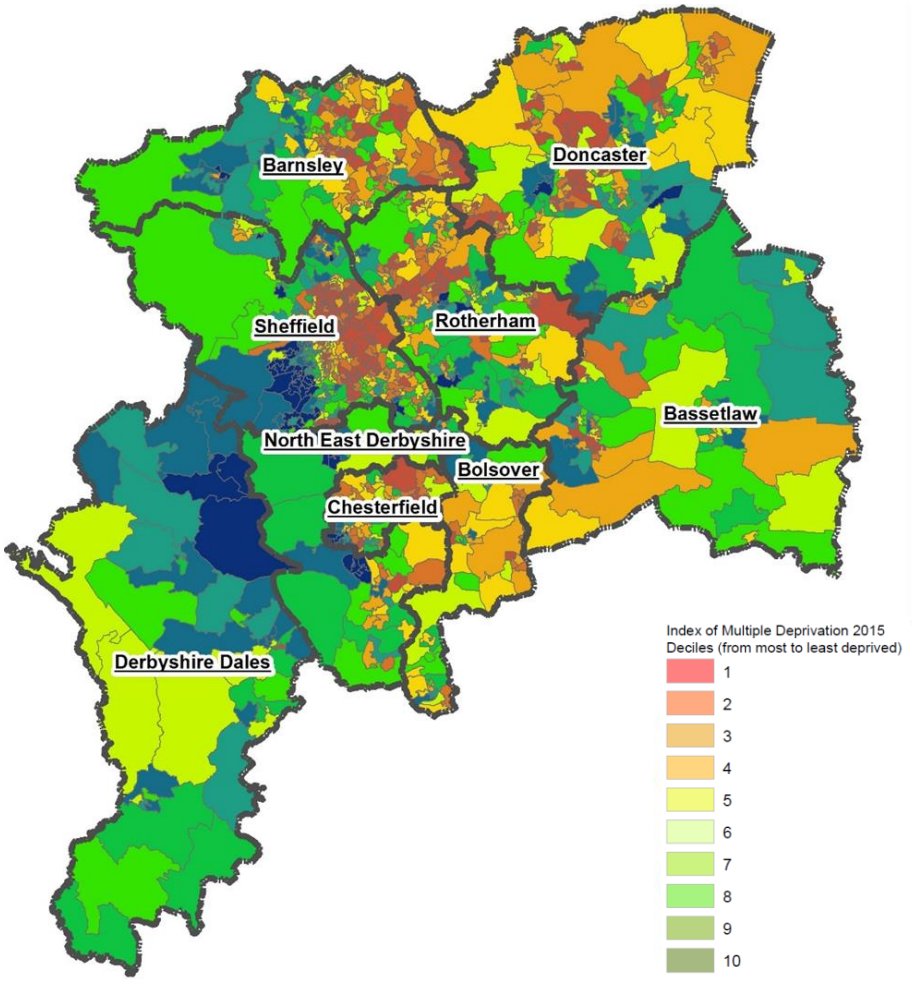


Figure 2.3 – Current Levels of Deprivation across the SCR

Population growth is expected to see an ageing population profile …

The population of the SCR is forecast to grow by 136,600 between 2018 and 2041. The following table provides a breakdown of population by South Yorkshire districts and the total, combined, population of districts outside of South Yorkshire.

	2018	2021	2031	2041
Barnsley	245,500	250,900	264,700	275,400
Doncaster	308,700	310,800	314,600	317,300
Rotherham	263,800	266,400	272,700	277,800
Sheffield	581,900	590,600	620,500	643,800
Bassetlaw	115,900	117,100	120,000	121,800
Bolsover	79,000	80,100	83,200	85,400
Chesterfield	104,800	105,300	107,000	108,300
Derbyshire Dales	71,500	71,700	72,700	73,300
North East Derbyshire	100,900	101,700	104,000	105,500
South Yorkshire	1,399,900	1,418,700	1,472,500	1,514,300
Non-South Yorkshire districts	472,100	475,900	486,900	494,300
SCR LEP area	1,872,000	1,894,600	1,959,400	2,008,600

Along with an overall growth in population, the City Region, like the rest of the UK, is forecast to experience an ageing population, as shown in Figure 2.4. Over the next 25 years, the old age dependency ratio (people of pensionable age per thousand people of working age) will increase by 19%. Between 2018 and 2041 the number of young people aged 0-15 is forecast to grow slightly by around 2,600 (0.8%) in the City Region, but the population aged 65+ will increase by 146,860 (41.9%).

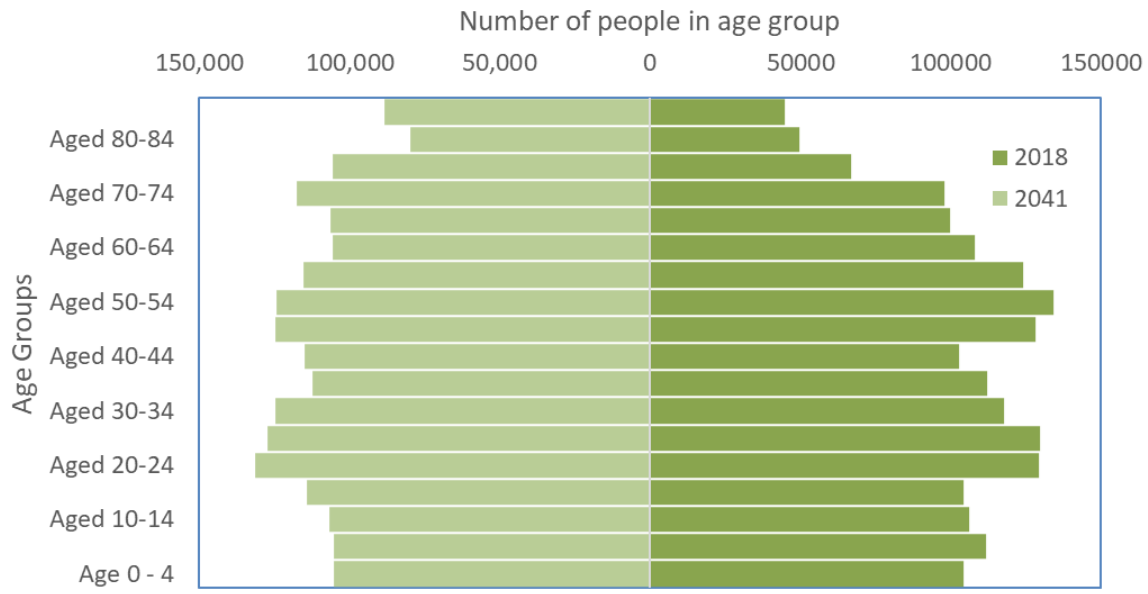


Figure 2.4 – Forecast Population Changes

These demographic changes will have implications for transport, particularly as older people tend to have different travel patterns and travel needs to younger generations and are generally less digitally connected, but at the same time older residents may continue to work longer and more flexibly in the future, altering current travel patterns.

Health is an issue in the SCR too …

The majority of SCR Local Authorities have physical inactivity levels higher than the national average for the adult population (aged 16 and above), as shown in Figure 2.5.

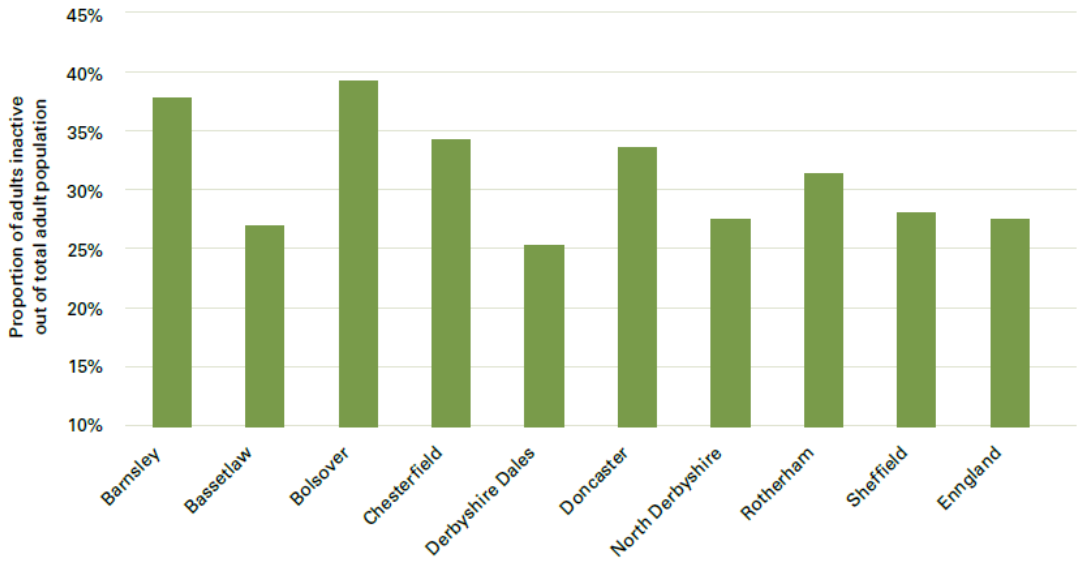


Figure 2.5 – Proportion of Physically Inactive Adults

The way that we travel and the transport we use impacts on our health, our environment and our societal wellbeing and our health and wellbeing have a huge impact on our everyday lives – if we are unwell it can affect our ability to work and work productively, to study and learn and to care for others.

The national obesity survey shows that although the obesity levels in the SCR of 10-11 year olds have decreased to meet the national average (19%), there are a number of areas within the City Region that have higher than average, and growing, obesity levels. Being overweight or obese can lead to serious health consequences such as cardiovascular disease (mainly heart disease and stroke), type 2 diabetes, musculoskeletal disorders like osteoarthritis, and some cancers (endometrial, breast and colon).

However, the issues with obesity are largely preventable. The key to success is to achieve an energy balance between calories consumed on one hand, and calories used on the other hand. To reach this goal, people can limit energy intake and to increase calories used, people can boost their levels of physical activity, to at least 30 minutes of regular, moderate-intensity activity on most days. This could easily be built into a daily commute.

Although health is affected by many different factors, being physically active can have a huge positive impact on both our physical and mental health. Not only does being active help contribute to maintaining a healthy weight for children and adults, there is good evidence that it also significantly reduces the risk of several different diseases. The outcomes of such an increase in physical activity will include a reduced call on health services locally and nationally, as well as contributing to an increase in workforce productivity.

Creating environments and transport networks systems which promote active travel as part of normal everyday life can not only help create, active, healthier and more liveable communities but can also have significant economic benefits and should be a fundamental part of our future transport plans.

The SCR labour market is fairly self-contained …

Three quarters of the SCR's residents live in the four main urban areas and this figure has been steadily growing. Between 2007 and 2017 the population of these areas grew by almost 87,000 (6.67%). Planned housing growth in the immediate term will likely see this trend continue, but over time, more residents may live away from the main urban centres in line with growth plans within the Dearne Valley, for example.

However, as Figures 2.6 and 2.7 show, regardless of where they live, people travel throughout the SCR to access jobs, putting pressure on the existing transport system. The latest census Journey to Work data shows that the majority of SCR's residents (85.3%) commute within the City Region boundaries and around 70% travel within their own Local Authority area – 56% of SCR commuters travel less than 10km to get to their place of work and 36% travel less than 5km. Sheffield is a net provider of jobs with the other districts being net providers of labour.

Whilst it is recognised that there may be changes in commuting patterns in the long term, the locations of planned growth in the SCR and the types of growth envisaged at these locations is likely to mean that this situation will continue in the near term.

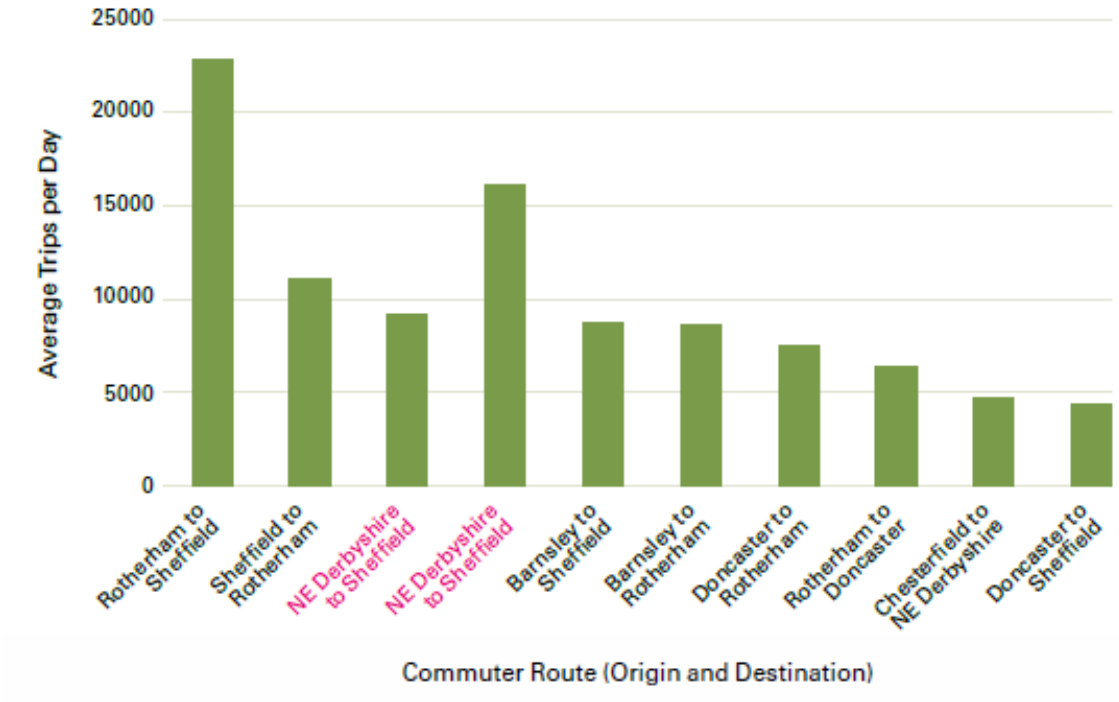


Figure 2.6 – Current Travel to Work Patterns within the SCR

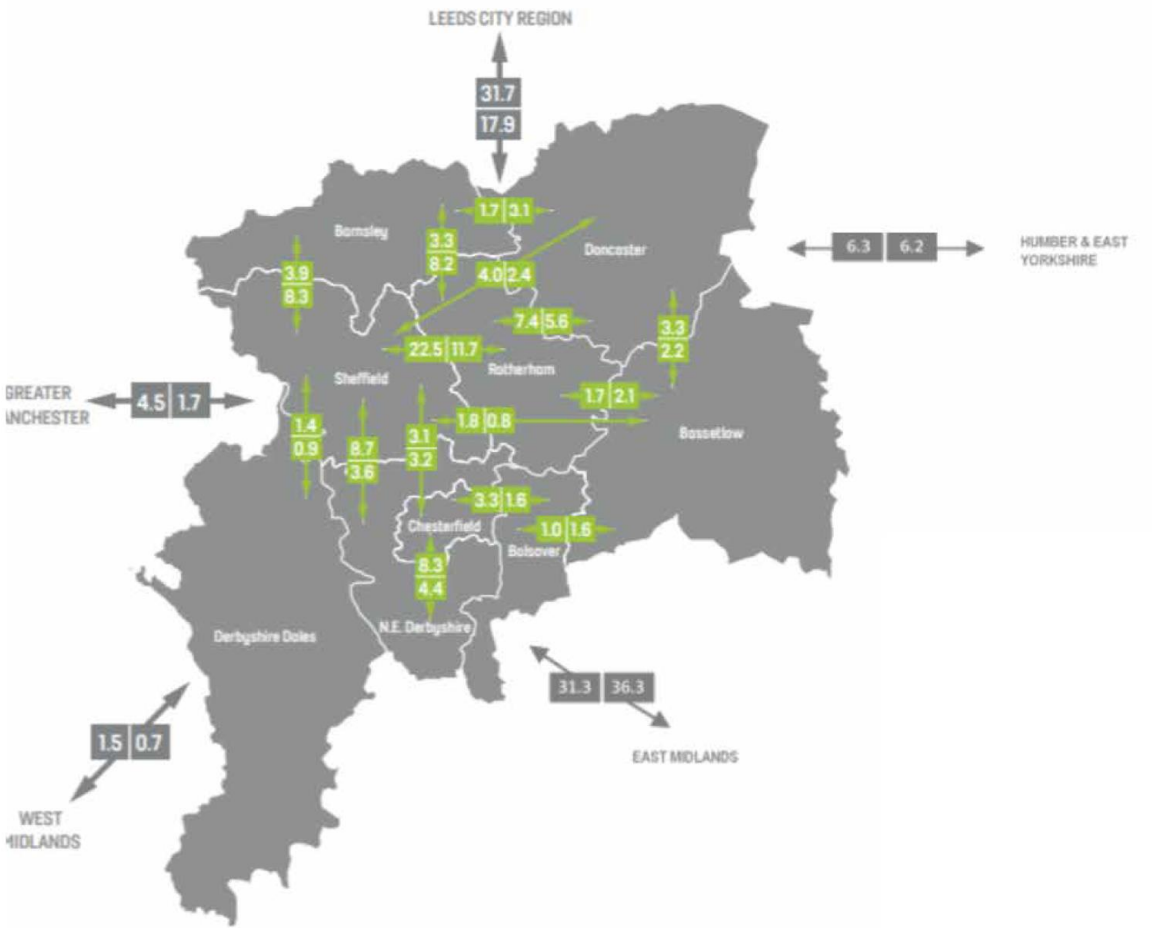


Figure 2.7 – Current Travel to Work Patterns Within and Outside the SCR (thousands of trips)

The levels of commuting between Rotherham and Sheffield are particularly high and coupled with additional demand generated by further development at AMID, would indicate that this is an important area for future transport investment. The lack of existing commuting between Barnsley and Doncaster is also evident and is likely to be related to the lack of effective connections between these two centres, by both public and private transport.

Yet in the SCR there is a reliance on cars when travelling to work …

A high proportion of residents (71%) of SCR residents travel to work by car, and this trend has increased since 2001, which is contrary to the general UK trend of decreasing car use and has resulted in increased congestion, longer journey times and has impacted detrimentally on health and air quality.

Despite this apparent reliance on cars, 29.5% of households in SCR do not have access to a car – the national average is around 26% – meaning these residents are reliant on public and sustainable transport modes to meet their transport needs, and with relatively short commuting distances, this would seem a realistic aim, assuming the right quality of transport infrastructure, facilities and services are provided to meet their needs.

Not having reasonable access to the transport system is a key factor in social exclusion and has a detrimental impact on people's day to day lives and future opportunities through a reduced participation in the wider economy of an area.

A low proportion (12%) of commuters travel to work by public transport in the SCR, and bus usage in particular has been falling since 2008. Funding for bus services has reduced, which particularly impacts on areas where commercial services are not viable, potentially isolating communities, especially rural communities, even further and can impact on the rural and visitor economies. Analysis has shown that a little over half of the fall can be explained by changing customer needs such as home working, internet shopping, home entertainment and competitive taxi fares. The remainder can be explained by increases in bus fares and service quality as congestion reduces the reliability and thus attractiveness of buses.

The numbers of people travelling in the City Region by rail has increased between 2005 and 2016 and seven out of the top ten stations in the SCR have recorded more than 50% growth over this time. The busiest stations within the SCR are Sheffield and Doncaster – in 2017/18 Sheffield had around 9,700,000 entries and exits, the second highest in the Yorkshire & Humber region, whilst Doncaster had around 3,900,000 entries and exits. Many of the main and local rail stations have park and ride facilities, which are often full on weekdays.

The Passengers in Excess of Capacity standard, which shows the proportion of standard class passengers that is above an accepted capacity level (allowing for both seated and standing passengers) on services at their busiest point, indicates trains arriving and departing from Sheffield station in the morning peak period were crowded over capacity by 1.2% in 2017, while in the afternoon peak the figure was 0.8%.

The current mode share breakdown for travel to work trips is shown in Figure 2.8.

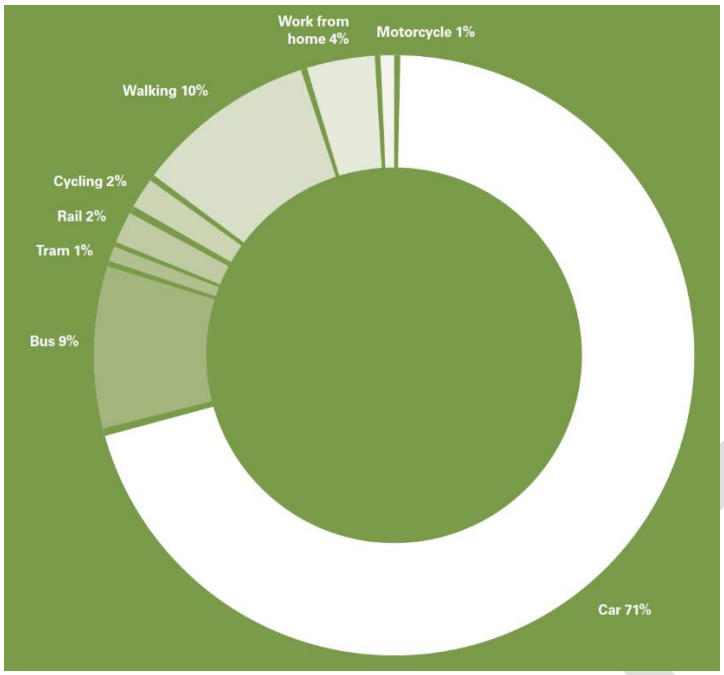


Figure 2.8 – Current Mode Share across the SCR

Cycle mode share remained fairly constant between 2001 and 2011 at 1.5% but counts taken around the four main urban centres indicate that there was an overall increase by 7% between 2016 and 2017. Cycle mode share for trips less than 5km (considered to be the average commuting trip length for cycle trips) is between 2-3%, with car use dominating this commuting distance. Although walking is the predominant mode for trips less than 1km in length, the reliance on car travel for short trips is still high, especially as 36% of SCR commuting trips are less than 5km in length.

The low mode share for walking and cycling is predominantly as a result of a lack of infrastructure, but also through a perception of a lack of safety resulting from large volumes of traffic and high speeds.

The continued reliance on the private car cannot continue – if the plans for significant economic growth within the City Region are to be realised, then it is forecast that there will be up to half a million extra highway trips per day across our transport network if current trends continue. There is a clear need to make more of our public transport networks and develop our active travel network to give people a real choice in how they travel around the SCR whilst improving air quality, reducing our carbon footprint and cutting congestion.

OPPORTUNITIES AND CHALLENGES, INCLUDING TRANSPORT BARRIERS

A summary of SCR's key challenges and opportunities was presented in the TCF Prospectus and a number of these have been evidenced in the preceding sub-section. Transport has a key role to play in supporting economic growth, ensuring businesses can function and local people can access employment opportunities in the SCR.

Economic growth in the City Region is dependent on attracting and retaining high value businesses, and therefore jobs, ensuring people have the skills and education needed to fill

them, and then ensuring all parts of the SCR are connected effectively to the areas of opportunity. Figure 2.9 shows the location of the growth areas across the SCR and the main urban centres.

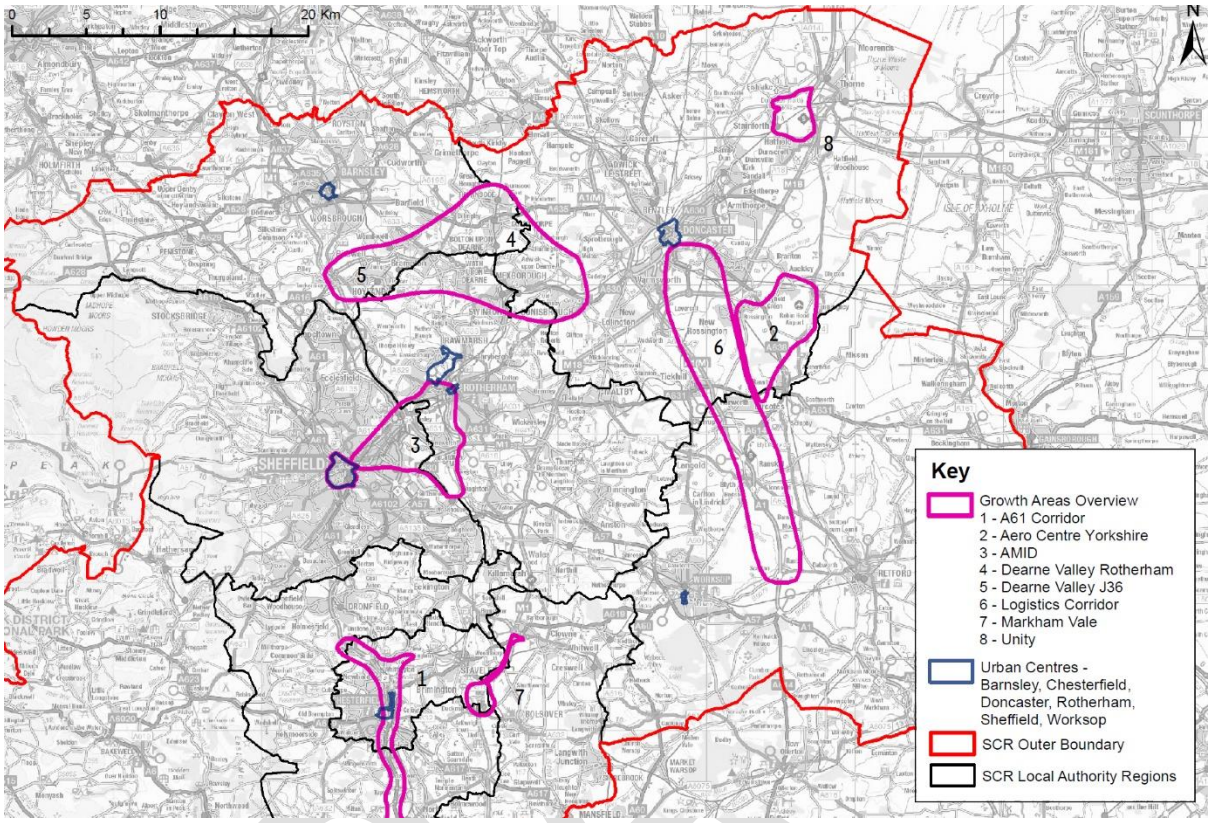


Figure 2.9 – SCR Growth Areas

External connectivity to the SCR is relatively good. The M1 and A1(M) motorways provide North and South connectivity, with connectivity to the East via the M18 to the Humber. The A628 'Woodhead Pass' and the Hope Valley rail line providing connectivity to the West towards Liverpool and Greater Manchester City Regions, with ongoing investigations into improved strategic links by TfN and Highway England being welcomed. The East Coast and Midland Mainlines rail routes connect the SCR to London and the rest of the North and DSA gives the City Region an international reach.

The SCR's connectivity is currently emphasised by the clustering of employment centres, not only in urban areas, but along the strategic road network. In particular, the M1 and M18 corridors are home to a large number of major employers. There is evidence of clustering along the Supertram network in Sheffield and towards Meadowhall, however a number of the growth areas are starting from a very low base in terms of public transport and active mode connectivity.

All of the major centres have well developed economic and spatial plans to support growth and regeneration, although all have been affected by the economic downturn. The majority of the plans highlight strategic locations based on strong transport linkages. For example, Chesterfield Waterside at Junction 29 of the M1, development sites at Junctions 36 and 37 of the M1 in Barnsley and the Aero Centre Yorkshire proposals in Doncaster, building on the newly opened Great Yorkshire Way road link.

However, with the changing nature of employment and company preference for certain locations, this is likely to mean that more people will have to travel further to work, compared to the past. This will particularly be the case for higher skilled and higher paid jobs.

At a number of key locations across the SCR, economic growth is constrained by a lack of appropriate infrastructure, which makes development not viable both physically and financially.

The key transport infrastructure challenge is therefore to ensure that the good national connectivity is matched by peerless connectivity within the City Region itself. A quantum leap in transport infrastructure investment is required to remove constraints to development and connect all people across the SCR efficiently and sustainably to the high quality, attractive sites that will support new and inward investment.

Based on the contextual description included previously, the target of this investment should be to address the existing areas of “transport poverty” across the SCR. Around 146,000 people within the SCR are currently living in areas of transport poverty – this is defined as an area of high deprivation where both public transport uptake and car ownership are low. Some 108,000 residents that experience transport poverty currently live in the areas defined by the three priority corridors included in the TCF Prospectus and Figure 2.10 shows the identified areas of transport poverty across the three corridors.

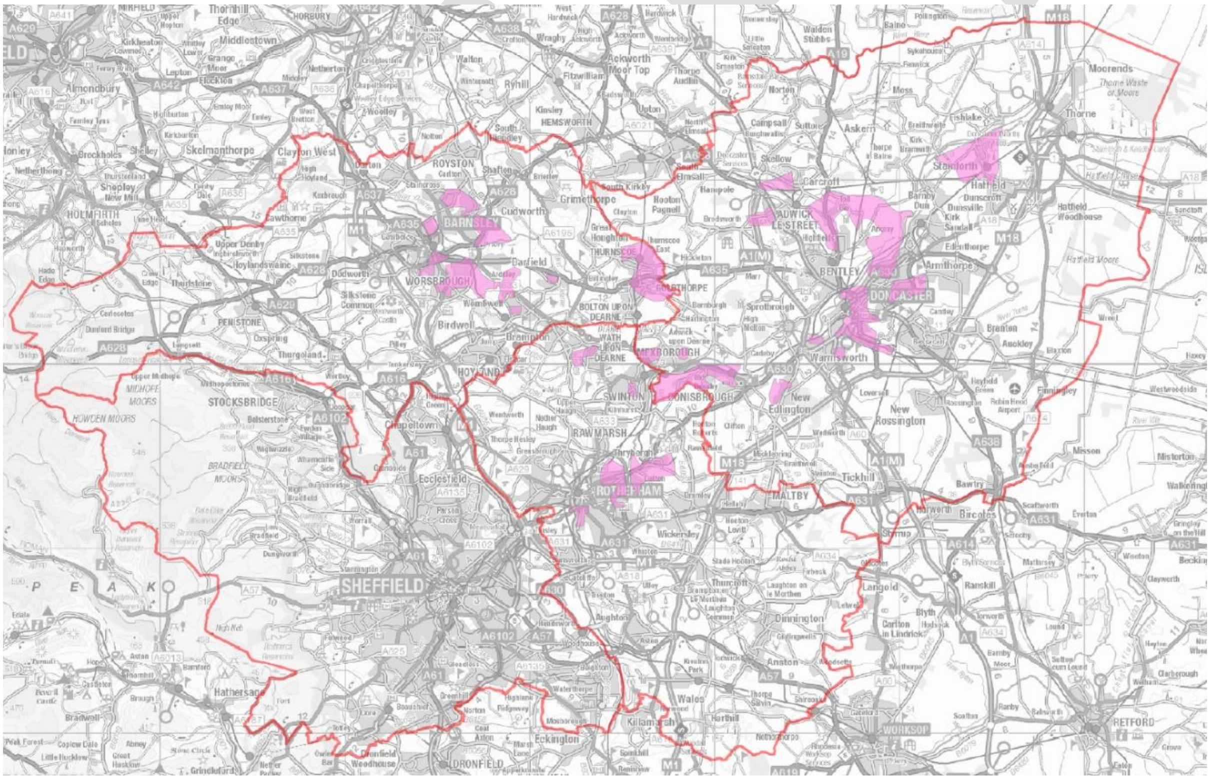


Figure 2.10 – Areas of Transport Poverty in the TCF Priority Corridors

Put simply, the biggest opportunity for future transport investment, including TCF, is to better connect the areas of transport poverty, with those areas of opportunity by public transport and active travel modes, allied to achieving significant mode shift away from the private car on key corridors that could stifle future growth ambitions, thereby achieving growth in a sustainable way that addresses current health issues and improves air quality.

The Sheffield City Region Integrated Investment Plan (SCRIIP) identified the top 20 highway corridors forecast to experience increased delay resulting from population and economic growth by 2025, as shown in Figure 2.11. Analysis shows that travel times at peak periods can be over 30% greater than at off-peak periods on these corridors, meaning that such unreliable journey times also have an adverse impact on the key bus services using these routes. This requires both short term and longer term interventions so as to avoid continuing and additional delays that adversely affect the attractiveness and viability of our bus network.

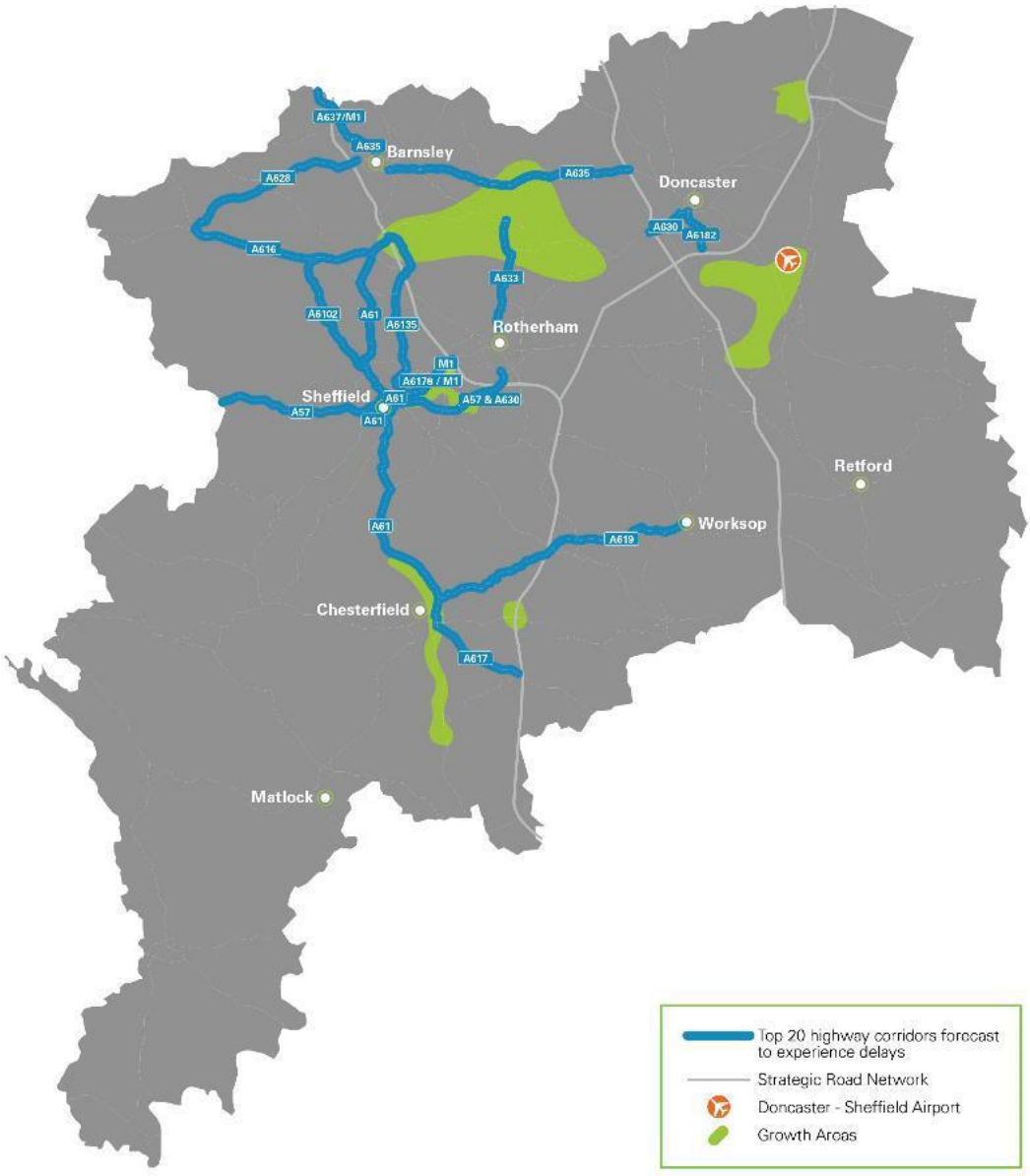


Figure 2.11 – Top 20 Corridors Forecast to Experience Delay by 2025

A number of these routes overlap with the priority corridors identified in the TCF Prospectus, most notably the link between Barnsley and Doncaster, where there is currently no direct rail connection alternative. The analysis also shows the forecast congestion on radial routes around Sheffield City Centre and the City's Inner Ring Road, recognising the ongoing importance of the core city within the SCR where there is also significant opportunity to alleviate congestion and support economic and housing growth through modal shift to public and sustainable transport modes.

Without future intervention, particularly in terms of public transport and active modes, congestion and delays will increase, and journey time reliability will deteriorate, presenting further barriers to economic growth and potentially damaging the existing economy.

Increasing congestion means that the City Region faces significant air quality issues, with 28 Air Quality Management Areas (AQMAs) across the SCR, including 6 in Barnsley, 7 in Doncaster and 8 in Rotherham and high levels of carbon emissions around the centre of Sheffield, which has a city-wide action plan, including the motorways and A Roads (see Figure 2.12).

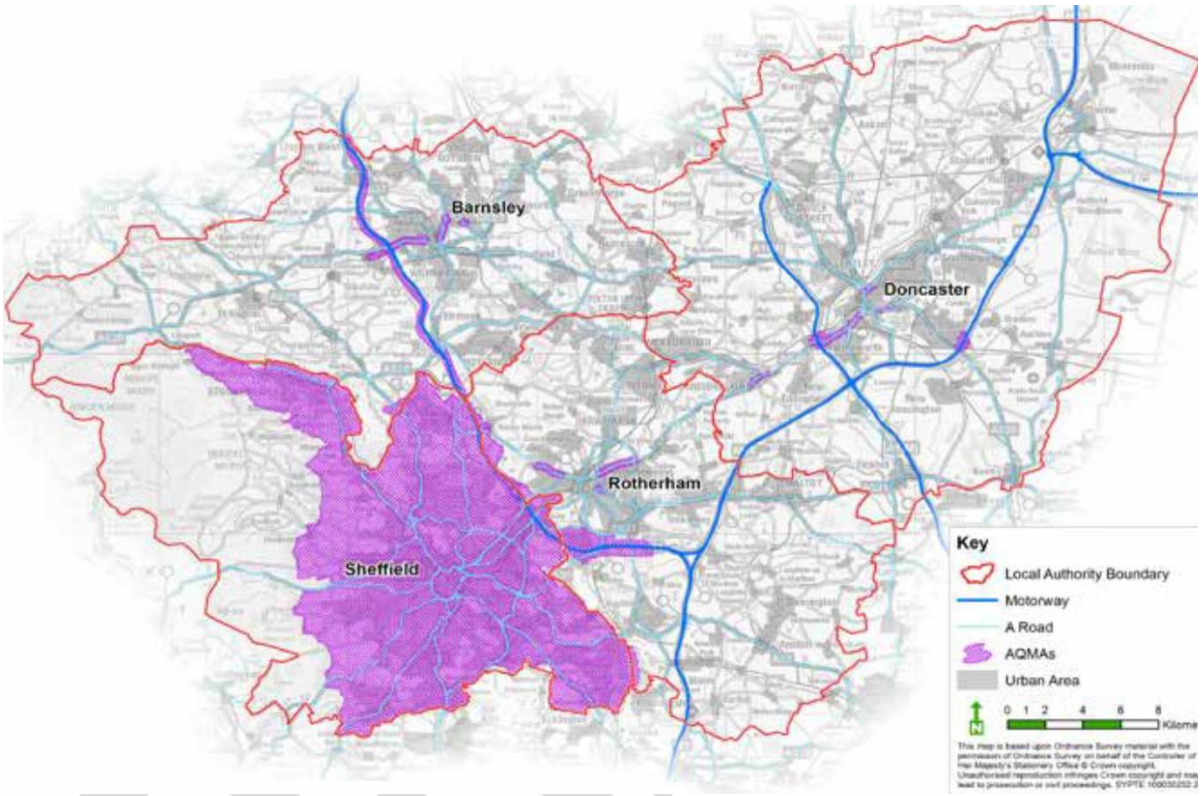


Figure 2.12 – AQMAs in the SCR

Across Sheffield alone, there are 51 locations where the European Union's annual average limit value for NO_2 has been exceeded in one or more of the three year periods (2010-2012). Analysis indicates that road transport is the single most significant contributor to Sheffield's NO_2 emissions at these locations.

Sheffield City Council (SCC) and Rotherham Metropolitan Borough Council (RMBC) are have undertaken a Clean Air Zone (CAZ) Feasibility Study, to ensure compliance with legal thresholds. To address the particular challenges in Sheffield, which needs to bring NO_2 emissions within legal limits as quickly as possible, a range of options have been considered with the preferred solution to introduce a 'Category C' CAZ covering the Inner Ring Road and the City Centre. The proposed zone is not final and may be subject to minor changes through feedback from the current consultation process

The current proposal means that buses, taxis, vans and lorries that do not meet necessary emissions standards will have to pay to drive in and around the zone. The zone will discourage the use of high polluting vehicles from the City Centre and encourage upgrades to cleaner, low or no emission vehicles. The impact of the zone will be much broader than the City Centre and it should reduce pollution across adjacent neighbourhoods and communities.

Congestion and air quality are clearly linked, and the SCR's public transport system and infrastructure for walking and cycling need to offer a real and affordable alternative to the private car if mode shift is to be achieved. This is particularly true for shorter distance trips that could be undertaken by sustainable modes and for short distance connections to longer trips. The public transport system itself also needs to deliver reductions in emissions over time, either through new investment or by interventions to reduce emissions from existing public transport vehicles and rolling stock.

As economic opportunities increase within the SCR, it is likely that commuting distances themselves may well also increase, both within the City Region and to neighbouring city regions. This means that the rail network will play an increasingly important role in the future transport system. Figure 2.13 shows the existing rail network in the SCR and the surrounding area.

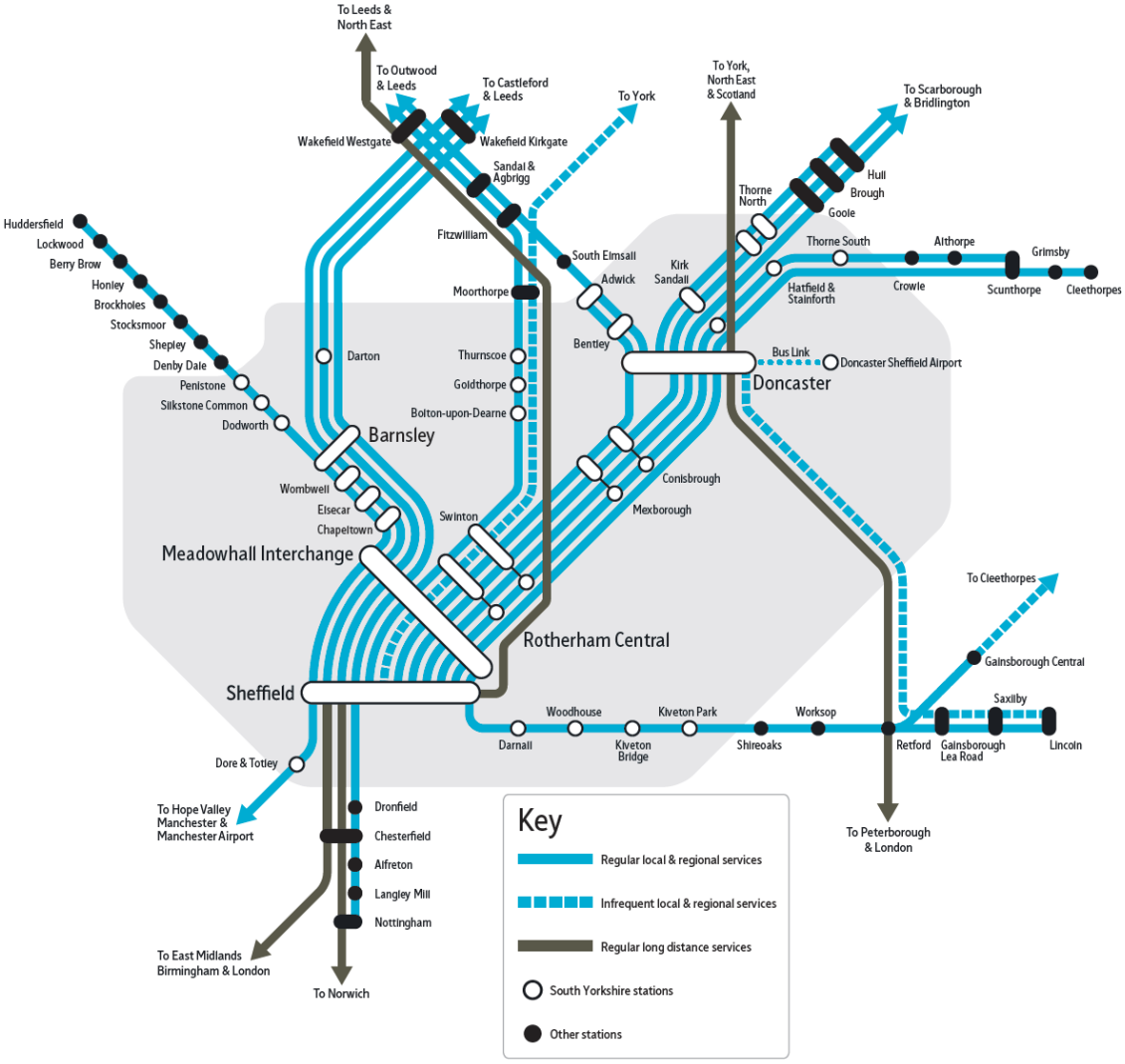


Figure 2.13 – Existing SCR Rail Network

The opportunity for the rail network to support the planned growth of the SCR is illustrated in Figure 2.14, showing the existing network against the larger housing and employment growth sites and the catchment areas of each of the existing rail stations.

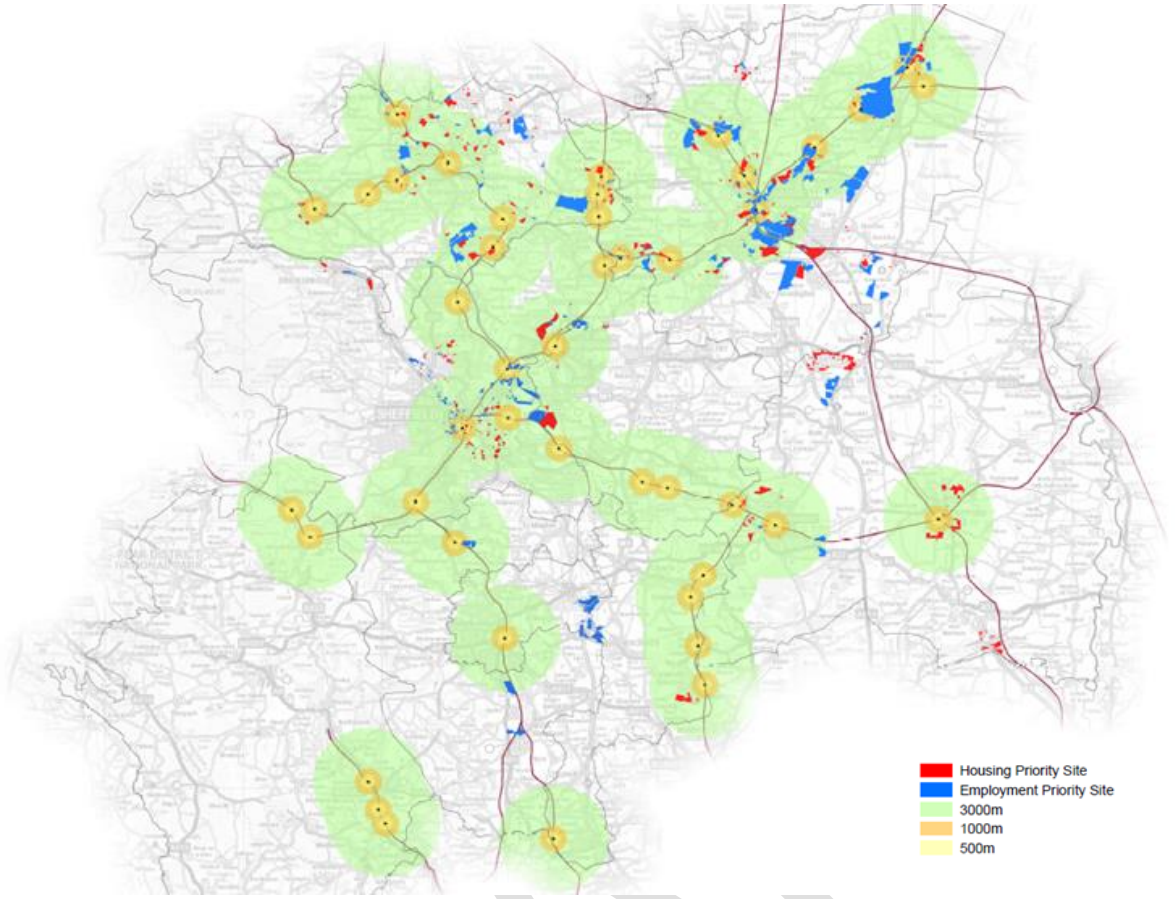


Figure 2.14 – SCR Rail Network and Planned Growth Sites

The quality of the rail stations across the SCR varies considerably. Whilst investment has been made in the rail stations in the main centres and at the principal park and ride stations, many of the SCR's rail stations are either inaccessible for some residents, or are not perceived as safe, particularly during hours of darkness, or both.

The SCR is seeking to define a consistent set of standards at each of the City Region's rail stations that provides customers with safe and secure facilities that are accessible, gives readily available service information, and offers a pleasant waiting environment with appropriate amenities. This approach is aimed at acknowledging the role of many stations as a community facility, and not just a node on the transport network, and also move towards the situation where nobody is excluded from using the SCR's rail stations.

As the recently completed refurbishment of Rotherham Central station has demonstrated, patronage growth at improved stations typically outstrips that where on investment has taken place, supporting the case for more widespread improvements at local stations across the SCR.

The role that the rail network can play in joining up areas of transport poverty with areas of opportunity can be seen, but it is only an effective option for travel if the facilities are suitable for all to use. Effective and safe connections to rail stations, principally by active travel modes, will also be critical to support new economic opportunities, especially given the relatively low commuting distances across the SCR and the areas of transport poverty that have been identified.

Drawing all of this together, the key aims of this TCF Tranche 2 bid are:

- To better connect the areas of transport poverty with areas of opportunity in a safe and sustainable way
- To affect a mode shift away from the private car on those corridors where new opportunities are likely to see an increase in demand or where growth could be stifled
- To create a cultural shift towards making cycling and walking the natural choice for shorter journeys, and
- To achieve the above in ways that address current health issues and improve air quality across the SCR,

all focused on the three priority areas identified in the TCF Prospectus and described below. These aims are designed to underpin the overall TCF objectives of supporting the local economy and boosting productivity whilst reducing emissions and improving air quality. The SCR's new housing locations will be boosted by a range of transport choices and the inclusion of a significant active travel element will have social inclusion and health benefits.

River Don Corridor

This corridor connects two of the City Region's key growth areas running from Sheffield City Centre to the Unity site to the north east of Doncaster.

Sheffield City Centre is a regional hub and home to 20,000 jobs in the digital industry, whilst Unity is set to deliver 3,100 houses and 8,000 jobs. In between lies Doncaster Sheffield Airport (DSA) and the proposals that include a vision for a 1,600 acre employment site at Aero Centre Yorkshire, which has the potential to add £3.2 billion in GVA per annum, connecting with deprived areas on the outskirts of Rotherham, Sheffield and Doncaster. In addition, the Aero Centre site has the capacity for a further 8,500 new homes, confirming the importance of improving intra-regional connectivity.

Adjacent to the Aero Centre site is iPort, a £400 million inland port project and one of UK's largest logistics developments, which is delivering more than 570,000 sq m logistics warehousing linked with a high specification rail freight intermodal container facility

The A6109 and A6178 routes connect Sheffield and Rotherham via Junction 34 of the M1, one of the main points of congestion on both the strategic and local road networks. The A630 corridor connects Rotherham and Doncaster and on to the Unity site via the A18.

There is a tram-train trial underway connecting Sheffield, Rotherham and further to the Parkgate retail park, and there are existing local rail and bus connections along this corridor, with bus connections onwards to the north east of Doncaster.

Much of this corridor is located within AQMAs, including the city-wide AQMA in Sheffield, and the corridor is affected by congestion issues around Sheffield city centre, Meadowhall, Parkgate, Warmsworth and Armthorpe. The A6178 corridor between Sheffield and Rotherham showed year-on-year increases in delays of between 7% and 16.5% (depending

on the section measured) in 2018. Delays on the section of the A6109 within Rotherham increased by 26% between 2017 and 2018. In Doncaster, delays on the A6182 (linking the town centre to the M18 at Junction 13) showed an increase of 5% and the A630 in Rotherham showed an increase in delays of 6.3% over the same period.

These delays particularly impact bus services on the approaches to the centres of Sheffield and Doncaster, as well as in the Meadowhall area.

Figures 2.15 and 2.16 show information provided by Prospective on behalf of one of the two major bus operators in the SCR to illustrate these delays – the former showing morning peak hour passenger weighted delays and the latter congestion-related delays in the evening peak period.

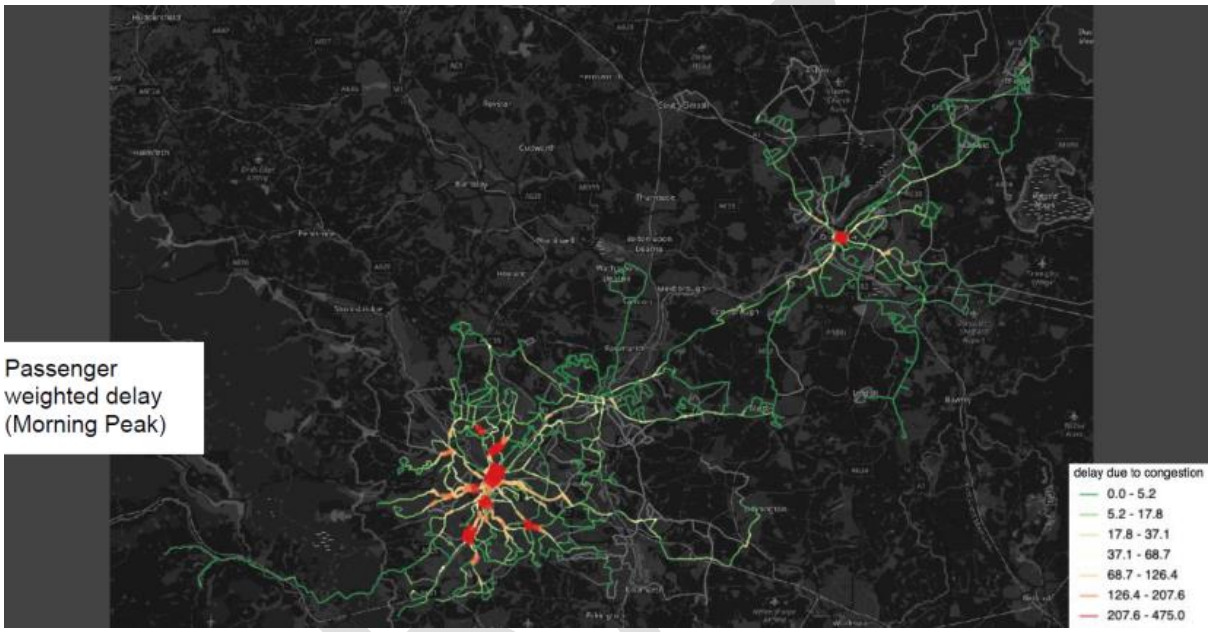


Figure 2.15 – Existing Bus Passenger Delays in Sheffield, Rotherham and Doncaster

Figure 2.16 – Existing Bus Vehicle Delays in Sheffield, Rotherham and Doncaster

Figure 2.17 shows the hotpots identified in Sheffield City Centre in more detail.

Figure 2.17 – Existing Bus Hotspots in Sheffield

Dearne Valley Corridor

The Dearne Valley Economic Corridor permeates through the Barnsley, Doncaster and Rotherham borough boundaries, providing significant employment and housing growth opportunities.

The area has undergone recent major transformation, providing jobs, particularly in logistics and distribution through key employers such as XPO Logistics (ASOS) and the Aldi Regional Distribution Centre. The Barnsley Dearne Valley area alone is earmarked for further local investment, which will lead to the unlocking of 2,000 new jobs together with 6,000 new homes by 2024. However, the corridor still suffers from poor connectivity driven by a dispersed settlement pattern.

The A635 provides the main east-west connection on the northern part of this corridor between the M1 motorway and the A1(M), although this route is of variable standard and reliability. The A635 connects Barnsley and Doncaster via Darfield, Goldthorpe and Thurnscoe, and is one of the main bus corridors. Whilst the A635 corridor has some free-flowing rural sections, between the dispersed settlements there are a number of locations where buses are delayed, including within the settlements themselves. Delays on the section of the A635 within Barnsley increased by 25% between 2017 and 2018.

The A633 also provides an east-west link between Barnsley and Doncaster to the south of the corridor, as well as a north-south link towards Rotherham through the deprived communities of Wombwell, Wath upon Dearne, Mexborough, Denaby and Conisbrough. The A633 corridor is more built-up than the A635 route, and buses experience significant delays at a number of locations. This poor connectivity limits the ability of existing and future residents to access a number of the planned employment sites. Delays on the section of the A633 within Barnsley increased by 7.1% between 2017 and 2018.

Both routes connect to the A6195 Dearne Valley Parkway, which links to the major employment site at M1 Junction 36, and merge to continue along the A6133 into Barnsley town centre. Delays on the section of the A6195 within Barnsley increased by 6.2% between 2017 and 2018. The A61 corridor connects Barnsley north towards the neighbouring boroughs in the Leeds City Region.

To illustrate some of the issue facing public transport services in this corridor, Figures 2.18 and 2.19 illustrate recent trends in the reliability and punctuality of services within the existing Barnsley Bus Partnership. For example, Service 1, which uses the A61 corridor, has experienced a decrease in punctuality from 89% in January 2017 to 81% in April 2019, whilst Services 218 and 219, both of which use the A635 corridor, have experienced reductions in punctuality from 85% and 84% respectively to 80% in both cases over the same time period.

Whilst the Dearne Valley corridor has good north-south rail connectivity (Sheffield – Rotherham – Barnsley Dearne Valley – onwards towards the neighbouring boroughs contained within the Leeds City Region), bus services provide the main form of public transport in the absence of a direct heavy rail link east-west between Barnsley, the Barnsley Dearne Valley and Doncaster. The increasing delays noted above on those routes used by the main bus services will increase further without interventions given the growth plans, further undermining the attractiveness of public transport and highlighting the need to improve east-west connections.

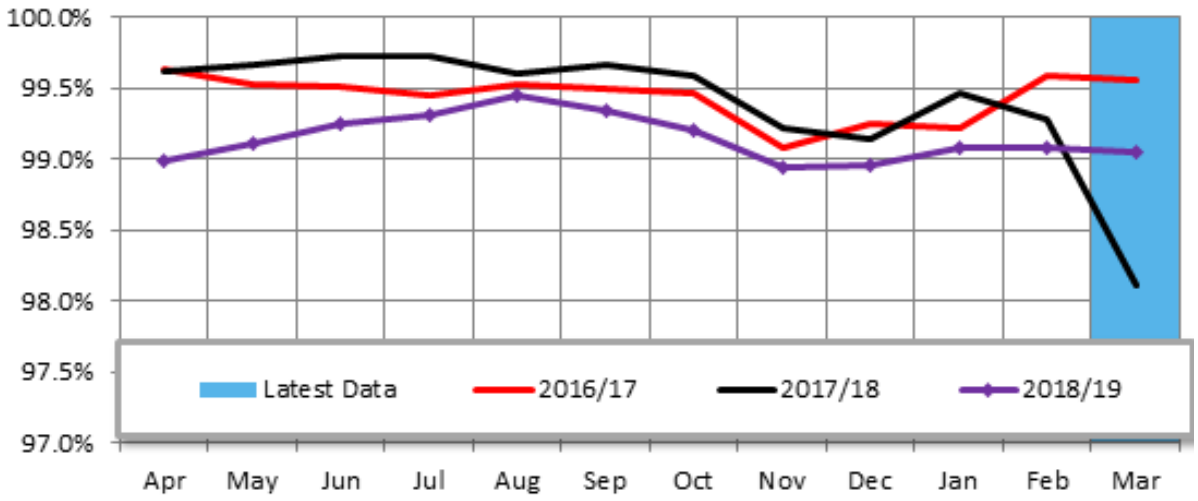


Figure 2.18 – Reliability of Barnsley Bus Partnership Services

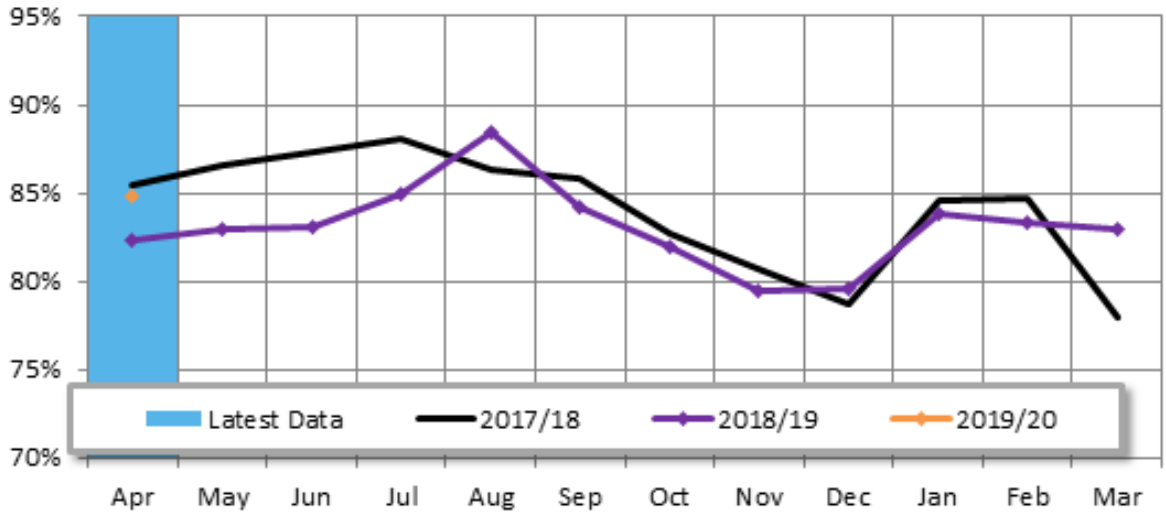


Figure 2.19 – Punctuality of Barnsley Bus Partnership Services

Advanced Manufacturing and Innovation District (AMID) Corridor

This corridor connects Sheffield and Rotherham and is an employment growth area which is now home to high profile employers such as Boeing, McLaren, Rolls Royce, Aloca, Tata, Outokumpu and Forgemasters. AMID is home to the University of Sheffield's world-leading Advanced Manufacturing Research Centre (AMRC), its sister centre, the Nuclear AMRC and its award-winning apprentice training centre. Sheffield Hallam University's Advanced Wellbeing Research Centre (AWRC), also within AMID, is set to become the most advanced research and development centre for physical activity in the world. The corridor also includes the Olympic Legacy Park (OLP) – delivering a tangible legacy from the London 2012 Olympic Games through a combination of world class sports facilities, education, new skills, research and innovation, environmental improvements and opportunities for the local community.

Growth in the AMID is estimated to provide 6,330 jobs and be worth £351 million in GVA uplift. The AMID is located adjacent to several areas of deprivation on the outskirts of Rotherham and Sheffield, but those communities are poorly connected to the employment, training and apprenticeship opportunities on their doorstep. Many of the key facilities within the AMID are also heavily car-dependent at present, which not only presents environmental and congestion problems, but, left unchecked, could present a further barrier to local people taking advantage of the huge opportunities in the future in an area that is already serving as a national example of industrial transformation.

The area is also estimated to deliver 3,900 new houses at Waverley, which is Yorkshire's largest-ever mixed-use brownfield redevelopment. However, much of the AMID is within the CAZ covering Rotherham and Sheffield and there is regular congestion on the network around the M1 and along the A630 Sheffield Parkway route, with delays on the section of the A630 within Sheffield showing an increase of 22% between 2017 and 2018. This is partly a result of the lack of effective public transport connections to the new areas of employment within the AMID.

Congestion is also notable around the Inner Ring Road in Sheffield, and on the radial routes to the west and south of the City, where bus services are often delayed on these corridors at peak times, as shown in Figures 2.15, 2.16 and 2.17 previously.

EXPLORING OPTIONS AND STRATEGIC ALTERNATIVES

Based on these more specific opportunities and challenges, the three principal components of this TCF Tranche 2 bid are as follows:

- **Public Transport** – infrastructure improvements on corridors identified in the SCRIPT study and the TCF Prospectus aimed at improving the performance of the public transport network, principally journey time, punctuality and reliability, within and between the main urban centres and the identified growth locations.
- **Active Travel** – drawing on the draft Local Cycling and Walking Infrastructure Plan (LCWIP) and the appointment of an Active Travel Commissioner to develop further a coherent network of active travel routes across the SCR, but focusing initially between the areas of transport poverty and the areas of opportunity, the main urban centres and those corridors with the greatest opportunity for mode shift, taking advantage of the relatively low commuting distances across the SCR at present.
- **Rail** – enhancing accessibility to/from and at rail stations within the SCR and interventions that support connectivity to HS2/NPR touchpoints so that the rail network can become a viable alternative to the private car for those taking advantage of the significant economic growth opportunities.

Options for the bid have been identified and prioritised by considering the challenges and opportunities for each of the three priority corridors and by utilising the evidence and findings of the SCRIPT study and the draft LCWIP.

Both the SCRIPT and the LCWIP work have used a robust evidence led, multi-criteria analysis approach, as well as collaborative workshops with Local Authority Partners, transport providers and interested parties.

In the SCRIPT work, an initial list of 255 options was generated from local transport studies and infrastructure plans, feedback from stakeholder sessions and bespoke options to address specific issues or connectivity gaps. 217 localised options were then grouped into 38 policy or strategy-led interventions that:

- Contribute to managing or reducing demand for travel
- Improve overall efficiency and operation of public transport services
- Enhance sustainable travel connectivity across the SCR and beyond.

These illustrative interventions have formed the starting point for the development of the public transport infrastructure options within this TCF bid. However, mindful of the objectives of the TCF and the timescales, any interventions that involve major rail investment, or new rail facilities, were not taken forward at this stage given the relatively long lead-in times.

The LCWIP work developed an indicative programme of cycling and walking improvements across the SCR by identifying key cycle desire lines and two corridor level maps per local authority area, highlighting the preferred route and feeder areas for further development. This work was used to develop the initial options for the active travel elements of this bid where they overlap with the three priority corridors and/or provide connections to the rail network.

South Yorkshire Passenger Transport Executive (SYPTE) has an audit of existing facilities at all of South Yorkshire's rail stations and this audit has been used to prepare the initial options for the rail elements of this bid, based on a 'gap' analysis of the facilities that would

be needed at each station to increase the perception of safety and encourage greater usage of the local rail network.

Once these initial lists of options had been developed, an initial two stage sifting exercise was undertaken to provide greater focus for this TCF bid:

- A high level sift, primarily around geographical fit and deliverability within the TCF timeframe
- A more detailed sift, using the Department for Transport's Early Assessment Sifting Tool (EAST).

This approach was felt to provide transparency within the assessment of options.

The outcome of the second stage of the sifting exercise was then reviewed to ensure that the individual elements of the proposed programme provided a coherent package and linked back to the objectives of the TCF itself and the particular aims of this bid described previously.

Further development work was then undertaken on each of the components of the package, allowing a more refined assessment of the benefits of each element (described later in this section and also in the Economic Case), but also the identification of key delivery issues such as land requirements and stakeholder acceptability.

The latter process involved working with bus operators to develop the public transport elements of the bid, providing them with visibility of the aims of individual schemes and the reasoning behind the proposal from an early stage. Input from the two principal operators has further refined the schemes included within this TCF bid.

The Active Travel Commissioner has set out their aspirations for all of our active travel infrastructure to meet or exceed minimum standards and be fully accessible. The Active Travel Project Director has worked with the Local Authorities to review how each of the elements of this bid meet these aspirations to ensure that the highest quality facilities will result from any TCF and complementary investment. This has prioritised those elements that clearly meet the suggested standards and provide significant elements of a coherent active travel network for the SCR.

The further development work also allowed the components of the bid to be divided between the three funding scenarios described in the Financial Case – in some instances, schemes with a higher level of perceived risk of deliverability were identified and allocated to the 'High' funding scenario, whereas on some corridors, the proposed improvements have been scaled across the different funding scenarios to accommodate the response to this TCF bid. This approach ensures that, whatever the outcome of the bid, some improvements on a particular corridor can be delivered, recognising the clear need for intervention to support future plans.

All of the further option development has taken place alongside the development of a series of implementation plans that support the SCR Transport Strategy. Each of these implementation plans sets out a 10-15 year investment programme across rail, active travel, public transport and major roads, and the components of this TCF bid form an essential element of the first four year period of investment across each of these plans.

INTERDEPENDENCIES

There are independencies between the package of schemes identified within this bid and those included within the £10 million Tranche 1 bid submitted in January 2019. The Tranche 1 schemes are summarised below:

- Don Active Travel Package – improving cycle routes and pedestrian areas along key routes including the area between Ten Pound Walk and Doncaster rail station, between Thorne and Moorends and between Conisbrough, iPort, Rossington and Doncaster town centre
- Transforming Active Travel to Rotherham Town Centre – a direct cycle route linking Greasbrough, Kimberworth and Wingfield to Rotherham town centre, as well as providing an early phase of a sustainable transport link to the planned Bassingthorpe Farm housing development, which comprises around 2,400 houses
- Sheffield Active Travel Package – a City Centre West cycle route extending existing facilities on Charter Row through to Hanover Way, new crossings on the Portobello cycle route at Mappin Street and Holly Street and the purchase of 200 e-bikes and accessories which will be made available to employers for their staff to use
- Barnsley Active Travel Link – an off-road direct cycle route along the A635, linking Ardsley and Darfield to employment opportunities in the Dearne Valley
- Emissions Reduction Package – retrofitting buses with reduction systems to make them cleaner and greener
- Public Transport Information Package – a city region-wide scheme to install real time information at 45 bus stops to provide passengers with up to date public transport information

Confirmation was received in March 2019 that only the first three of these packages had been selected for funding under Tranche 1, with a total value of around £4.2 million. These interventions are therefore considered as part of the baseline transport network.

There is also a range of other transport schemes that link to the proposals within this business case, including:

- STEP Local Transport Provision – this £19 million investment delivers a series of transport interventions developed to provide enabling infrastructure to support SCR's growth ambitions and enhance the quality of life of residents, employees and employers, whilst also adding to the attraction for potential movement and investment into the area; the primary focus of STEP is active travel, delivered by new or improved dedicated walking and cycling routes and enhanced public transport provision
- Supertram Rail Replacement Phase II – this project is to replace life expired sections of rail within street running sections of the Supertram network; the scheme covers 9.0 route km and prevented full network closure on safety grounds in 2018/19, allowing Supertram to continue to contribute to the SCR's economic growth and regeneration.
- M1 Junction 37 Phases 1 and 2 Claycliffe – the project aims to provide capacity to unlock additional development near Capital Park, improving access to/from the M1 from Barnsley, relieving congestion in the immediate area and on the southbound exit from the M1 and alleviating air pollution; Phase 2 of the project will deliver a significant mixed-use development on 122 hectares of land, comprising 43 hectares of employment land and 1,700 new homes
- M1 Junction 36 Economic Growth Corridor – this £7.34 million road improvement scheme in Goldthorpe, will facilitate 73 hectares of new employment land; highway Improvement works will take place on three existing roundabouts, at

Cathill, Broomhill and Wath Road, while a new roundabout will also be created off the A635 to provide access into the employment site

- DN7 Unity Hatfield Link Road – this project delivers a 2.9km road from M18 Junction 5 to unlock the Unity mixed use development, comprising 3,100 houses, commercial floor space and local centre, retail and educational facilities; the road will also provide better connectivity for existing settlements.

The SCR is currently developing OBCs for two Large Local Major Transport Schemes that have some interaction with the schemes within this bid as follows:

- The Sheffield City Region Innovation Corridor project is seeking to reduce pressure on Junctions 33 and 34 of the M1 by exploring options to provide alternatives to the M1 for local traffic, and potentially provide additional routes between Sheffield and Rotherham without the need for drivers to pass through existing motorway junctions; the scheme is aimed at reducing congestion and improving connectivity between Sheffield and Rotherham to maximise the potential for growth of the AMID
- The SCR Mass Transit project is developing the business case for the renewal of track and vehicle infrastructure on the Supertram network so as to ensure the continuation and expansion of a high quality mass transit system across the SCR; a consultation on the scope of the project in late 2018 identified that respondents are overwhelmingly in support of renewing and modernising the Supertram network, with 88% in favour of this option and also found that if the tram was no longer available the majority of respondents would use the bus or their car to travel, indicating that a potential shift of existing public transport users to the private car.

Working with bus operators and SYPTE, SCC was awarded £1.947 million from the Government's Clean Bus Technology Fund (CBTF) in Spring 2018. 117 non-Euro 6 diesel buses operating in Sheffield (93 First buses and 24 Stagecoach buses) are being retrofitted with technology which will improve their engine performance and reduce emissions to a compliant Euro VI standard. The operators are delivering the retrofits to their buses, with SCC providing the grants to pay for them from the CBTF.

Reference has been made to the CAZ proposals promoted by SCC and RMBC, and this bid is aimed firmly at supporting the mode shift required to deliver the required reductions in emissions in the shortest possible time. Additional funding is being sought by SCC and RMBC to implement the CAZ and this would be complementary to this TCF bid, providing the opportunity to go further in some areas in delivering infrastructure to support mode shift. The CAZ proposals include changes to the current controlled parking zones in Sheffield which are likely to provide the most cost effective reduction in emissions within the areas at most risk of having non-compliant air quality, but will also help support the mode shift envisaged by the interventions in this TCF bid.

SCC is working towards Sheffield becoming a zero-carbon city in short order to make their full contribution to the Paris Climate Change agreements and a dedicated piece of analysis has been produced by the Tyndall Centre for Climate Change Research that establishes a carbon 'budget' for Sheffield. The report recommends that, for Sheffield to make its fair contribution to global climate goals, the City must not exceed a 'budget' of 16 million tonnes of carbon emissions over the next 80 years. At current rates of energy consumption, Sheffield would use this entire budget in less than six years, and so to meet this 'budget' requires annual reductions in CO_2 emissions of 14% per annum – broadly equivalent to becoming nominally 'carbon neutral' by 2038. The TCF schemes within Sheffield (and Rotherham) will help contribute to this reduction, in line with the overall objectives of TCF.

The SCR is currently undertaking a Bus Review to understand the complex challenges behind declining bus patronage – outside London, annual bus journeys in cities have fallen per person by 40% over the last 25 years and this patronage decline is replicated in the SCR.

In February 2019, the Mayor announced Clive Betts MP as the independent chair of a commission, who in turn appointed a panel of commissioners to support him, that will review bus services in South Yorkshire and put forward recommendations for improvements – including how to best make use of the new powers in the Bus Services Act 2017.

The review will provide the Mayor with an independent assessment on:

- The current condition of the commercial bus and community transport sector in South Yorkshire, including the reasons for the decline in both registered bus services and bus passenger numbers
- The social, environmental and economic impacts of this decline in bus services and passenger numbers
- The steps which should be taken to ensure commercial bus and community transport services meet the needs of South Yorkshire residents.

The latest part of the review was a call for evidence that ran until September 2019, based around the following key lines of enquiry:

- Trends in bus use and factors contributing to these trends
- How to increase bus patronage – generally as well as in relation to different demographic groups including young people, the elderly, minority ethnic groups; key workers; those on low incomes, those with mobility issues
- How to improve accessibility – including provision for potentially isolated residents and communities
- How to improve 'quality' of services with an emphasis on the bus user experience
- The relationship between the bus system and other modes of transport and travel such as the tram network and active travel
- The implementation of bus priority measures by local leaders in South Yorkshire
- The environmental impact that buses can have on congestion, pollution and air quality
- The commercial operation of the bus sector including the responsibilities of bus operators, strategic planning and regulatory matters
- Adequacy of funding and best approaches to securing future investment in the sector and ensuring sustainability
- What can be learnt from other towns, cities and/or city regions about any of the review's key lines of enquiry.

The outcome of the Bus Review will help to maximise the value gained from any future public transport investment across the City Region, by addressing the issues that are currently contributing to patronage decline and identify areas for improvement to attract non-bus users. The aim of this TCF bid, in connecting areas of transport poverty to areas of opportunity by public transport and active modes is entirely consistent with the aims of the Bus Review.

SCR has recently commissioned a review of future mobility services across the City Region to help develop the implementation plans that will support the SCR Transport Strategy, reflecting that technology is constantly advancing and driving an unprecedented pace of change that will impact our cities, environment and way of life.

This review has considered these changes by analysing global transport trends and emerging technologies (grouped into key themes), interpreting the principles set out in the DfT's Future Mobility: Urban Strategy (2019) and benchmarking where the SCR is now in relation to these principles, and providing a set of recommendations and actions which the SCR should seek to implement to help propel the City Region to the forefront of future mobility.

A spatial portrait of existing SCR Future Mobility assets and capabilities has been developed in collaboration with stakeholders within the region, to understand where the City Region is currently with regards to future mobility technologies and capabilities. From this review, it is apparent that there is already lots going on in SCR, both in terms of physical assets and intellectual effort, which can be built upon, as shown in Figure 2.20.

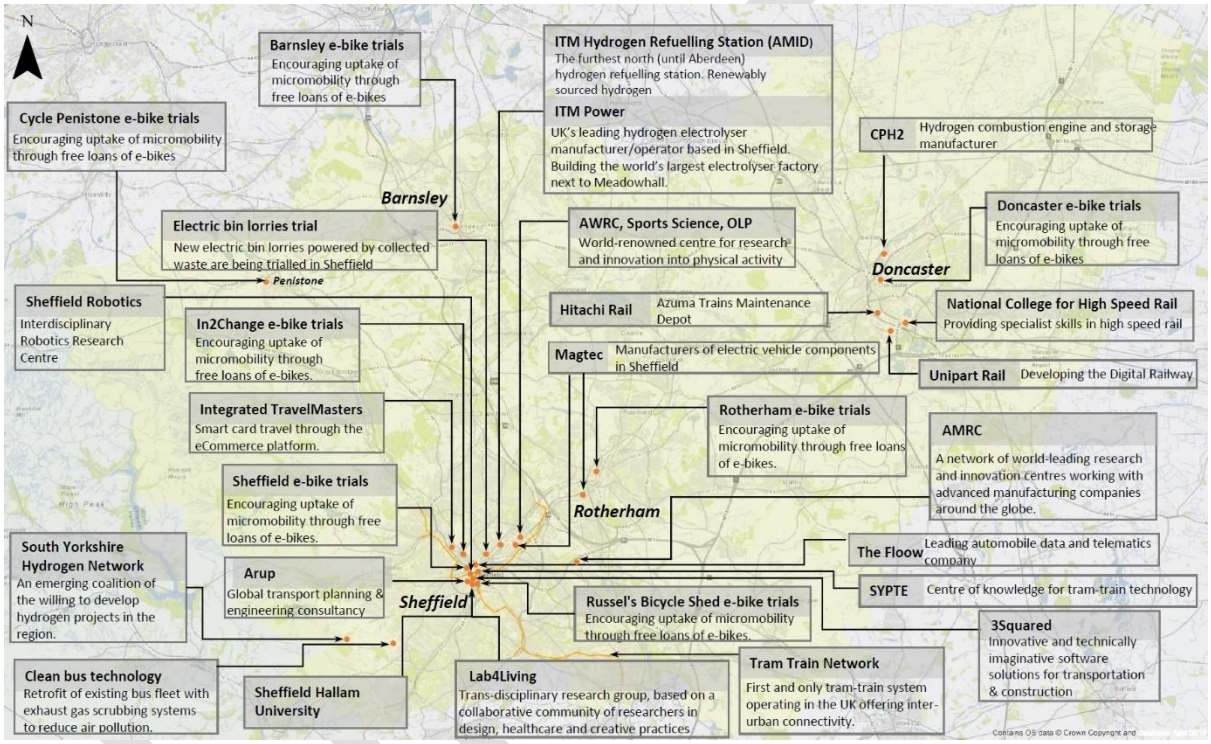


Figure 2.20 – Existing Future Mobility Assets and Capabilities in the SCR

The review identifies that the opening up of data has significant potential for the development of new services and solutions and that the SCR has the opportunity to explore how data can be made more open. Working with the Open Data Institute and local digital companies should be a key step in exploring the potential, learning from others and helping to ensure the opportunities are developed to comply with GDPR. The unlocking of data can also support better city region-wide planning, not just from a mobility perspective, but also to look at the whole system of planning to support better and more predictable outcomes.

SCR's participation in TfN's Integrated and Smart Ticketing (IST) programme is a first step in understanding and harnessing the power of data to achieve a range of policy objectives. Phase 2 of the IST programme, currently being implemented, will deliver improved customer information, collaboration and innovation meaning that the same kind of information currently enjoyed by most rail passengers will be made available to bus and light rail passengers across the North.

There is an important role for the SCR to mitigate against any risks of new mobility models. It must take this responsibility pro-actively and boldly, specifying up front what the Combined

Authority and the Local Authorities want from service providers and ensuring these parameters are operated within. This is reflected in the Government's Urban Mobility Strategy principles, for example the emphasis on safety and integration.

The review concludes with a series of five 'key moves' and a number of more detailed recommendations over the short, medium and long term. A number of the short and medium term recommendations, such as:

- Ensure all new cycle routes are designed so that they are inclusive for all
- Explore provision of more feeder services to public transport hubs to create a more integrated system
- Improve integration of active travel modes with public transport, for example by creating cycle routes and providing safe and secure cycle parking which are well integrated with tram and bus stops
- Progress further work on zero emission buses
- Identify opportunities for trialling the TfN IST programme in the SCR and simplify the existing ticketing and payment offer
- Encourage greater uptake of e-bikes.

These recommendations are fully aligned with this TCF bid and the schemes described previously as being delivered in TCF Tranche 1.

As noted previously, the known locations of growth and the known locations of deprivation are unlikely to change considerably over the lifetime of the TCF programme and so, whilst mindful that there will be some changes in future trends, this is unlikely to have a significant impact in the SCR in the next four years. However, future investment programmes across all transport modes will take account of uncertainty and will reflect the review's assertion that the SCR takes a pro-active role in driving the future mobility offer.

EXPLORING IMPACTS OF INTERVENTIONS

The proposed package of interventions within the SCR's TCF programme by priority area are described below.

River Don Corridor

The significant schemes promoted in this corridor include:

- Improving access between Mexborough town centre and the rail station and Doncaster college and the rail station
- Rail station (and station access) improvements across the Doncaster district (including Adwick, Bentley, Kirk Sandall, Conisborough, Hatfield and Stainforth), including access to/from the stations by active travel modes and facilities such as improved signing and information, accessible bench seating, CCTV and lighting enhancements
- Addressing locations of existing public transport delays between Doncaster urban centre and the iPort site and DSA
- Connecting outlying settlements to the growing economic opportunity by providing a new connection into the iPort site from Rossington for buses and active travel modes and from Thorne and Moorends to Unity by active travel modes

- Improving accessibility and connectivity by providing better walking and cycling routes in a number of local communities including Armthorpe, Balby, Wheatley, Long Sandall and Edlington
- Interventions at key junctions on the A18 corridor between Doncaster urban centre and the Unity growth area
- Addressing locations of existing public transport delays within the Doncaster urban centre by providing bus priority measures at key junctions and improving on-street facilities
- Improving accessibility and connectivity by providing better walking and cycling routes through Doncaster town centre, including St Mary's Gyratory, North Bridge Road, Cleveland Street and Bennetthorpe
- Connecting Maltby to the main urban centre of Rotherham and addressing a location of existing public transport delays through bus lanes and junction improvements, along with localised enhanced active travel routes within the corridor.

In particular, the proposed interventions around Mexborough will provide active travel connectivity from the employment hub at Manvers to Mexborough town centre and then onto the rail station – Mexborough is among the most deprived communities in Doncaster. The interventions will also provide a high quality active travel connection linking the deprived community of Balby with employment opportunities within the town centre.

Improvements at M18 Junction 3 will resolve one of the most significant locations of delay and unreliability for bus services in Doncaster, enhancing the attractiveness of the public transport connections between the strategic growth hubs of the urban centre, iPort and DSA. This will be complemented by new bridge for public transport and active modes that allows the deprived community of Rossington more direct accessibility to employment and education opportunities.

Improvements to the public transport and active travel networks within the core of Doncaster's urban centre will allow complete connectivity from the rail station gateway to employment hubs within the town, whilst the North Bridge Road to Bennetthorpe interventions will see a cross-town connection of a high standard active travel corridor, that completes the missing link in the current network, enabling a continuous route to be provided from east to west of the urban centre.

Dearne Valley Corridor

The significant schemes promoted in this corridor include:

- Addressing a location of existing public transport delays on the A61 Wakefield Road, Barnsley by a combination of bus lanes and junction improvements, linked to complementary corridor proposals in the Leeds City Region, along with active travel improvements along the corridor
- Bus Rapid Transit (BRT) between Barnsley and Doncaster – connecting the only remaining two main urban centres in the SCR which do not have a high quality public transport link, via the housing and employment growth area in the Dearne Valley
- New cycling route linking Barnsley town centre to the housing growth area in Darfield and on to the housing and employment growth area in Goldthorpe and the wider Dearne Valley
- Rail station (and station access) improvements across the Barnsley and Rotherham districts, including the access to/from the stations and facilities such as improved signing and information, accessible bench seating, CCTV and lighting enhancements

- Contributing to the new fully accessible bridge (including cycle use) linking Barnsley rail station and the town centre
- Connecting the housing growth areas in Staincross and Royston to the urban centre of Barnsley by providing improvements for active travel modes
- Improving walking routes into Barnsley town centre from the Hospital, including along Huddersfield Road
- Providing better active travel routes to enable more walking and cycling into local town centres within the Dearne Valley
- Addressing locations of existing public transport delays on the A630 corridor
- Connecting the housing and employment growth area in the Dearne Valley to the local centre in Wath for active travel modes
- Addressing locations of existing public transport delays around the A633 corridor – the main intervention being the provision of a new second access to Parkgate Retail Park, as well as a new 300 space park and ride site for the tram-train terminus.

The A61 is an important cross-boundary corridor and the proposed bus priority measures are intended to deliver journey time savings that will improve the financial viability of the bus market as a whole and in particular for services along the corridor, allowing the opportunity to examine to unlock additional investment from the principal bus operator.

A number of the active travel interventions are interlinked so as to result in a continuous active travel route stretching from Royston to Goldthorpe via the town centre. The particular section of this continuous route from Stairfoot to Goldthorpe also runs adjacent the existing settlements of Ardsley and Darfield and will be within close proximity to some of the housing growth in the Local Plan. This active travel route will run past sites which are allocated for 630 new dwellings and at the end of the route lies another proposed housing site which has been allocated for 194 dwellings.

There is a large employment site proposed off the A635 which incorporates 73 hectares of employment land, the largest employment allocation within the Local Plan – this site lies adjacent to the planned BRT route between Barnsley and Doncaster.

Many of the station access improvements are also aimed at developing coherent active travel networks. The proposed interventions will link Bolton upon Dearne station to the existing Trans Pennine Trail, providing a continuous link to the Manvers Way Industrial Estate. Elsecar station is the closest to the Hoyland Masterplan area, a substantial employment and housing growth site totalling an additional 1,881 new dwellings and over 107 hectares of new employment use by 2033 – the aim is to link the station to the Trans Pennine Trail (which crosses the masterplan area) to provide easier access to this growth site, resulting in fewer journeys into Hoyland itself and encouraging more rail-based park and ride journeys.

Goldthorpe is another area with significant planned housing growth – the Local Plan envisages just under 1,000 additional dwellings to be built by 2033. The proposals include another spur into the wider east-west active travel route connecting Royston to Goldthorpe, allied to a similar proposal at Thurnscoe station, thereby linking Thurnscoe and Goldthorpe to Barnsley town centre and nearby industrial estates.

The proposed scheme to improve access to Wombwell station will improve active travel links between the station and Cortonwood and Manvers Way Industrial Park. The existing park and ride facility is well used and often over capacity during the week, therefore improved active travel links to the station could potentially reduce levels of parking demand. In the longer term, this is important due to an additional 150 dwellings coming forward within the

Local Plan with 18.2 hectares of safeguarded land coming forward beyond the Plan period that will envelop the proposed active travel route.

A package of complementary measures is proposed in the Parkgate area of Rotherham to address significant congestion in the area particularly along the A633 which is a key bus route linking major employment and retail opportunities in Rotherham town centre, Parkgate, Rawmarsh and the Dearne Valley. The congestion is mainly due to the large retail park at Parkgate which generates large volumes of traffic, has only one entrance and exit from the A633 and is in close proximity to the major A633/A6123 roundabout. This has a major effect on bus journey times and reliability and has been raised as a major concern by bus operators. It is proposed to transform this corridor by introducing a new link road into the retail park which will form an alternative entrance and exiting from the A6123. This will relieve traffic on the A633. A complementary park and ride site will also be introduced in the retail park to serve the successful tram-train service between Parkgate, Rotherham and Sheffield and to further reduce the number of vehicles travelling along the A633 through Parkgate. These measures will also enable amendments to the major A633/A6123 roundabout to benefit public transport. The package of measures will result in much more reliable bus services along the key A633 corridor and improved bus journey times during peak periods. The measures will also encourage economic growth at Parkgate and provide improved access to the tram-train and major urban centres of Rotherham and Sheffield.

AMID Corridor

The significant schemes promoted in this corridor include:

- Promoting active travel use for accessing employment opportunities at the AMID and AMP from Rotherham town centre
- Providing better active travel routes to enable more walking and/or cycling through Rotherham town centre, including links to Forge Island – this will complement the current TCF Tranche 1 scheme
- A new tram-train stop at Magna, facilitating a new 150 space park and ride site – this will help transform strategic connectivity to the Magna area and provide growth opportunities in the Templeborough/Sheffield Road area
- A new high quality segregated cycle route along the A6178 Sheffield Road to help support active travel links between Rotherham, Meadowhall and Sheffield
- Addressing locations where existing public transport delays limit access to employment opportunities from south west, Kelham/Neepsend and the east end of Sheffield to Sheffield City Centre, and across the City Centre onto the AMID and Rotherham
- Promoting active travel for accessing employment opportunities in Sheffield City Centre, AMID and Rotherham, to improve access to opportunities in particular from areas of deprivation, and constrain car trips (and so reduce congestion and emissions) in the City Centre and on some of the busier roads
- Improving public transport journey times and reliability within Sheffield City Centre
- A trial of low emission buses to reduce emissions within the CAZ, providing the groundwork for future roll-out of low emission buses.

It is proposed to introduce a new tram-train stop at Magna on the Parkgate/Rotherham to Sheffield line with a new park and ride site. The tram-train has been very successful and has proved that there is a high demand for this service – this ambitious project will help to relieve congestion and poor air quality within the Lower Don Valley and A6178 corridor by encouraging drivers to park at the new tram train stop and travel on the tram-train service into Sheffield. This will help to address major congestion between Rotherham and Sheffield particularly at the Junction 34 of the M1 and also help to improve air quality. The project will

also link with the proposed A6178 segregated cycle route and encourage cyclists traveling longer distances to use the tram-train service.

The high quality segregated cycle route along the A6178 will provide a direct route for all between Rotherham town centre and Tinsley/Meadowhall in Sheffield linking large residential areas in Rotherham and Tinsley to major employment and retail in the Lower Don Valley and the AMID. The largest traffic flows in South Yorkshire are between Rotherham and Sheffield resulting in major congestion in the Lower Don Valley between these major urban centres particularly at Junction 34 of the M1 which is affecting economic growth. There is also poor air quality in the area due to the large volumes of traffic and a high proportion of HGVs using the A6178. Despite this, there is demand to use this route from cyclists and so a high quality, segregated cycle route will help to address these issues by encouraging modal shift and by providing a comfortable environment for new and existing cyclists.

The aim of the proposals within Sheffield is to enable existing trips into the City Centre to be shifted towards more space-efficient modes, to enable trips to be 'banked' to allow for future expansion of activity in the City Centre. The 'Nether Edge Wedge' in the south west has been prioritised on the basis of the DfT Propensity to Cycle tool indicating that interventions in this part of the City affords the greatest opportunity for abstraction from car trips, and has been also identified in the draft LCWIP as a priority on this basis. The South West Sheffield bus corridors have similarly been identified, working with bus operators, as areas where buses suffer significant delays on corridors experiencing high levels of car use for trips into the City Centre.

The interventions should also ensure that the City Centre provides a safe, attractive hub to facilitate cross-city movements by public transport and active modes, including improvements to cross-city public transport speed and reliability as well as improving the ease of interchange between radial services, thereby creating an attractive environment to support economic growth and housing delivery. The proposals in the City Centre have been aligned to SCC's emerging Future High Streets Fund bid and to wider development opportunities, to deliver a City Centre that facilitates public transport and active modes use in preference to private car use.

Improving public transport journey times and reliability, and the active travel experience, within and between areas of housing growth and employment areas, to encourage residents of new homes to be delivered in and around the City Centre to take up sustainable modes as the default option has influenced the option development process.

This is the principal driver for the Sheffield Housing Zone North works (which are aligned to the Housing Infrastructure Fund (HIF) bid in this area), as well as works on the City to AMID corridor which align with identified housing sites around Attercliffe. The scope of these projects have been set out to improve social inclusion, in areas amongst 10% most deprived in the country, by ensuring access to employment opportunities in the City Centre and AMID, and also to existing public transport services (in particular Supertram) is improved for existing communities, and by improving the safety and attractiveness of local communities for active travel more generally.

Proposals have also been identified to support connectivity to the AMID, given that the area is poorly served by public transport and active modes at present, as well as to support interurban bus services between Sheffield, AMID, Rotherham, Doncaster and the iPort – in particular improvements in the City Centre, at Attercliffe and at Meadowhall supporting the X1 Sheffield – Rotherham service. The improvements in Attercliffe and Darnall are also anticipated to provide an alternative for long distance services presently delayed by

significant peak hour congestion on A630 Sheffield Parkway (notably the X6 connecting Sheffield with the AMRC, the iPort and Doncaster), improving public transport reliability between key regional hubs and employment centres.

Overall, the three packages of work within this TCF bid will a provide range of economic, environmental and social benefits.

In **economic terms**, without investment, the existing levels of delay will worsen and constrain the growth potential of the SCR's development assets. The TCF packages will improve public transport journey time and reliability on the key corridors, which provide travel time benefits for users as well as providing a wider choice of non-car transport modes.

By creating public transport and active travel networks that work for users, the SCR can begin to accommodate any increased demand for travel between key urban centres and unlock new housing and employment sites in the City Region (as well as boost existing sites that are poorly connected).

Unlocking these sites and connecting people to the economic opportunities, particularly high value jobs, will help improve productivity, reduce deprivation, increase public transport mode share, reduce emissions and improve health outcomes.

The packages will better connect homes, transport interchanges, employment, education and recreational opportunities using safer, direct and convenient routes. This investment will be particularly important for those existing and new workers and apprentices with jobs that have shift patterns that do not align with public transport timetables. There will be a particular focus on ensuring new journeys stimulated by investment in the SCR are targeted to reduce the reliance on private transport and offer users affordable, sustainable and healthy travel choices. Business will also benefit as their employees will be better able to commute to work in a way that can increase productivity through a reduction in lateness as well as absenteeism due to ill-health.

The active travel packages in this TCF bid will target existing as well as prospective workers, apprentices and students and those wishing to access vital local services. The cycling and walking infrastructure improvements will enable people to access jobs, education/training opportunities and local services through choosing affordable, greener and healthier forms of travel.

There are disbenefits from a loss of indirect taxation due to trips being made by sustainable modes at the expense of car trips, but these are more than outweighed by the value of the health and social benefits associated with this.

In terms of **environmental benefits**, a move towards a zero carbon public transport network not only has direct benefits in terms of reducing emissions, but will also allow the SCR public transport network to be a trailblazer, shed its image of being highly polluting and be a key part of the AQMA/CAZ measures that will reduce emissions from a variety of sources. The three priority corridors include 19 AQMAs, amounting to 63% of all AQMAs within the City Region as well as the CAZ in Rotherham and Sheffield. The TCF packages show reductions in noise and greenhouse gas emissions as well as an improvement in air quality.

Investment in active travel will also assist in enhancing the attractiveness of the built environment where people live and work. Ultimately, attractive places that show joined up thinking between town and transport planning will help to retain graduates, attract new investment, and improve its outdoors to the advantage of the SCR. The SCR's future transport proposals will also seek to protect and enhance green spaces (including parks)

and public rights of way, such as riverside footpaths where they provide alternative opportunities for active travel and in this way will have benefits for the water environment and biodiversity.

In terms of **social benefits**, investment in the priority corridors through the TCF interventions will benefit around 108,000 people living in the identified areas of transport poverty. Investment in cycling and walking infrastructure will provide affordable and inclusive transport options, allowing people to access employment and services easily and cheaply whilst encouraging more active lifestyles, offering health benefits. It will also assist in reducing pedestrian and cycle related accidents (particularly amongst high risk groups). The provision of coherent and continuous cycling and walking infrastructure will also address security and severance issues where these exist. Improved public transport connectivity will also encourage modal shift from private vehicles, leading to a number of decongestion benefits.

ALIGNING WITH WIDER LOCAL PLANS AND OBJECTIVES

The Mayor's Vision for Transport and the SCR Transport Strategy contains a series of goals, Mayoral commitments and policies as set out in the following table.

These goals, commitments and policies were developed to guide future investment in transport across the SCR, and so the TCF proposals have been developed with these in mind.

Transport Strategy Goals	Mayoral Commitments	Transport Strategy Policies
Residents and businesses connected to economic opportunity	I will invest in tram, tram-train, bus rapid transit, bus networks, active travel and tackle our congestion hotspots. I will develop a plan for road investment that takes a co-ordinated long-term perspective I will ensure that local, regional and national road and rail investment delivers for this region I will ensure that new technology improves the customer experience of travelling in and around the Sheffield City Region I will actively support improved public transport connections to Doncaster Sheffield Airport and ensure that regional rail investment delivers fast and efficient rail links to major airports	1. Improve the existing transport network to enhance access to jobs, markets, skills and supply chains adopting technology solutions to support this 2. Enhance productivity by making our transport system faster, more reliable and more resilient, considering the role of new technologies to achieve this 3. Invest in integrated packages of infrastructure to unlock future economic growth and support Local Plans, including new housing provision

Transport Strategy Goals	Mayoral Commitments	Transport Strategy Policies
A cleaner and greener Sheffield City Region	I will work with partners to deliver a zero-emissions public transport network and we will eliminate the need for AQMAs I will undertake a review of the bus network in South Yorkshire, to look at all options for improving local bus service	4. Improve air quality across our City Region to meet legal thresholds, supporting improved health and activity for all, especially in designated AQMAs and CAZs 5. Lead the way towards a low carbon transport network, including a zero-carbon public transport network 6. Work in tandem with the planning and development community to create attractive places
Safe, reliable and accessible transport network	I will invest in services to ensure that residents with disabilities, young people, the elderly and those who are isolated economically and geographically are able to travel easily, confidently and affordably I will put pedestrians and cyclists at the centre of our transport plans I will ensure that safety is planned into all future transport investment and that road safety education initiatives are prioritised	7. Ensure people feel safe when they travel and invest in our streets to make them more attractive places 8. 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 9. Ensure our transport network offers sustainable and inclusive access for all to local services, employment opportunities and our green and recreational spaces

The Mayoral commitments that *"I will invest in tram, tram-train, bus rapid transit, bus networks, active travel and tackle our congestion hotspots"* and *"I will put pedestrians and cyclists at the centre of our transport plans"* are of particular relevance to this TCF bid.

There is close alignment between the goals and policies and the specific proposals in this bid as set out in the following table.

Goal	Policy	Link to TCF Proposals
1	Policy 1	Enabling people to access opportunities through choosing greener and healthier forms of transport by sustained investment in high quality public transport, cycling and walking infrastructure both for existing journeys and new journeys stemming from investment in the City Region.

Goal	Policy	Link to TCF Proposals
1	Policy 2	Targeted investment, including new technology, in public transport infrastructure on key corridors will make journeys on faster and more reliable.
1	Policy 3	The priority corridors identified for investment and the existing rail network are intended to connect areas of housing growth, eg in the Dearne Valley, to areas of economic opportunity.
2	Policy 4	Encouraging people to adopt sustainable travel modes over private cars to reduce the number of vehicles that use the SCR road network and hence reduce the negative effects of congestion.
2	Policy 5	Delivering a zero-carbon public transport network requires investment the bus fleet.
3	Policy 7	Ensuring that public transport stops and interchanges are perceived as safe, alongside the principle routes connecting them to housing and job opportunities.
3	Policy 8	Reducing the reliance on private transport, encouraging people to choose greener and healthier forms of transport both for existing journeys and new journeys stemming from investment in the City Region. Investing over a sustained period in high quality public transport, cycling and walking infrastructure that better connects homes, transport interchanges, education, employment and recreational opportunities using safer, direct and convenient routes. Developing an investment plan from the LCWIP that removes barriers to walking and cycling and identifies the infrastructure required to encourage more trips by bike or on foot.
3	Policy 9	Investing in clearer wayfinding, travel planning for residents and visitors, and the maintenance of walking and cycle paths.

This confirms that the TCF programme is a vital element of the SCR Transport Strategy and key to its successful delivery. The TCF also aligns to the policies of the South Yorkshire Local Authorities, particularly the Sheffield Transport Strategy.

All the TCF interventions will focus closely on improving public and sustainable transport modes in preference to private cars, to make these fit for the 21st Century and to meet the SCR's economic growth ambitions.

Improving connectivity between the SCR's economic assets and urban centres will improve productivity and competitiveness and move towards the Mayoral ambition to significantly increasing the number of economically active people living within 30 minutes of key employment locations and universities by public transport and active modes.

The packages will also directly tackle air pollution and reduce the level of carbon emissions in line with UK targets by driving forward the desire to deliver a zero carbon public transport system in the longer term and eliminate AQMAs in the City Region, aligned with the emerging CAZ proposals.

The SCR Transport Strategy also states that any schemes brought forward, including through the TCF programme, will also be judged against these three goals and the success criteria that flow from them. These are set out in the following table.

Goal	Success Criteria (by 2040)
Residents and businesses connected to economic opportunity	a) Contribute towards increasing GVA in SCR through increasing the number of economically active people living within 30 minutes of key employment locations and universities by public transport b) Better frequency of rail service between Sheffield and Manchester/Leeds - at least four fast trains per hour, with a target 30 minute journey time to/from both and a local rail network that meets the agreed minimum standards c) Increase productivity through reducing delays on our transport network d) Increase trips by 18% bus, 100% rail, 47% tram, 21% walking and 350% cycling and manage the increase in private car/van/goods trips to 8% e) 95% public opinion that our local transport choices feel safe f) Reduction in reported casualties of 4% per year g) Eliminate AQMAs in our City Region and comply with legal thresholds to achieve compliance in the shortest possible time h) Reduce tailpipe carbon emissions in line with targets for the UK and have a zero-carbon public transport network by 2040
A cleaner and greener Sheffield City Region	
Safe, reliable and accessible transport network	

SCR's SEP articulates a clear vision for economic growth, which is to create a bigger and stronger private sector. Strong economic performance in recent years has meant that the SCR is ahead of the growth targets set in 2014, but there is a clear desire to go further, by unlocking the potential to grow faster.

The LEP is more than half way through the delivery of its six year transformative Local Growth Fund (LGF) programme – this includes £283 million spent on transport and infrastructure, prioritised to deliver economic growth, which in turn is leveraging £553 million in wider investment, helping to unlock 71,846 jobs and 6,835 homes.

More broadly than LGF, the SCR Combined Authority is investing a further £178 million in transport between 2015/16 and 2020/21 through a range of initiatives. This will be aligned with funding through the TCF programme to deliver the plan for growth and to achieve the SCR Transport Strategy goals.

The TCF programme therefore directly supports the objectives of SCR's ongoing refresh of the SEP, where transforming internal connectivity is central to the vision for growth.

The packages of interventions that have been developed for this Tranche 2 bid also align directly with the objectives of the overall TCF programme and wider regional and national plans and policies.

The SCR Transport Strategy sets out a need to develop a series of implementation plans and this process is underway. The Integrated Rail Plan, which aims to ensure that the SCR

fully benefits from transformational national projects such as HS2 and NPR, was published in July 2019.

The draft LCWIP is being developed into an Active Travel Implementation Plan and a Roads Implementation Plan is also being prepared that focuses on the roads that we have rather than building new ones, recognising that almost all journeys start and finish on local roads and they play a major part in everyone's life, whether as a pedestrian, cyclist, bus passenger, freight operator, driver or passenger, and that our plans for the road network need to help the public transport services that use it and help support active travel where possible, whilst not severing communities or wildlife habitats. There will also be an implementation plan focuses on public transport timed to coincide with the completion of the SCR Bus Review.

The SCR also is positioned within three of the Strategic Development Corridors identified in TfN's Strategic Transport Plan, where investment in multi-modal connectivity is required to support planned economic growth.

Finally, the TCF Tranche 2 proposals within this bid also align closely with the ambitions and objectives of the Northern Powerhouse, the Government's Stronger Towns agenda and the Industrial Strategy, particularly the Infrastructure, Place and People pillars of the latter.

CONSIDERING WIDER EVIDENCE AND STAKEHOLDER VIEWS

A public consultation on the Draft SCR Transport Strategy was undertaken in the first three months of 2018. An online survey was conducted, consisting of nine questions that combined open and closed formats. The survey was completed 286 times online and five hard copies were also received via post. Written submissions were received from 22 organisations via a dedicated inbox and two handwritten responses submitted by post from members of the public.

The consultation generated a large amount of data and suggestions for refining the Strategy. Overarching support was expressed for the proposed goals and policies in the Strategy and the issues drawing the greatest attention involved local bus services, the environment and cycling. This feedback has helped shape this Tranche 2 bid.

Consultation in relation to individual elements of the packages themselves has been considered since an early stage in the SCRIPT work. Through interactive workshops, interviews and questionnaires, key challenges were identified affecting the network and the same stakeholders were then involved in the development of the interventions that address these challenges.

Stakeholders involved in the SCRIPT work included:

- South Yorkshire Local Authorities
- Other SCR Constituent Authorities
- SYPTE
- SCR LEP
- West Yorkshire Combined Authority
- TfN
- Delivery partners – including Network Rail, HS2 Ltd and Highways England

- Rail operators – including (the then) East Midlands Trains, Northern Rail, First TransPennine Express, Stagecoach Supertram
- Bus operators – including Stagecoach Yorkshire, First South Yorkshire and TM Travel
- Other interested parties – including Living Streets, Cycle Sheffield, Sheffield Community Transport and Age UK.

The development of the draft LCWIP involved significant input from the South Yorkshire Local Authorities and is the basis for further development work under the remit of the SCR's Active Travel Commissioner. There is a high degree of community involvement in developing detailed plans for active travel infrastructure through the TCF programme.

In Sheffield, SCC's production of a City-wide Transport Strategy involved a public consultation exercise in 2018 which informed SCC's priorities within this TCF bid and demonstrates a high level of political buy-in at this early stage in the programme's development.

In Barnsley, Council Officers are discussing active travel issues with the Health & Wellbeing Board and hospital clinical forums to inform the development of the walking and cycling implementation plans. Discussions have also been held with the Leeds City Region around inter-regional connectivity between Sheffield and Leeds, via Barnsley and Wakefield.

This bid is fully supported by the LEP, having been presented to the LEP Board meeting in May 2019, and key private sector partners across SCR, including public transport operators.

Further details are provided in the Management Case, along with a Stakeholder Management Plan which summarises the high level of engagement already undertaken, as well as planned in the future. There has therefore been strong and widespread stakeholder input to the development of the principles of this TCF bid and also of the individual elements included within it.

SUMMARY OF THE RATIONALE FOR INVESTMENT

The SCR is polycentric city region and is home to 1.8 million people, with 68,000 businesses, providing 847,000 jobs and an annual GVA of around £34 billion. However:

- The SCR has low productivity despite a sizeable economy
- There is a high economic inactivity, unemployment and NEET rate in the SCR
- There are pockets of high deprivation across the SCR
- Population growth is expected to see an ageing population profile
- Health is an issue, with the majority of districts having physical inactivity levels higher than the national average for the adult population
- At a number of key locations across the SCR, economic growth is constrained by a lack of appropriate infrastructure, which makes development not viable both physically and financially
- The labour market is fairly self-contained, with 36% of SCR commuting trips being less than 5km in length
- There is a reliance on cars when travelling to work and there could be up to half a million extra journeys on our network every day by 2026

- Not having reasonable access to the transport system is a key factor in social exclusion and has a detrimental impact on people's day to day lives and future opportunities
- Air quality is poor in a number of areas.

Each of the local economies and the identified growth areas has a role to play within the City Region and each will make an important contribution to future growth. Making further progress in addressing the challenges and issues which are specific to local areas will help to boost the overall economic resilience of the City Region and its attractiveness as a place to live, work, play and visit.

However, the SCR's transport system and its supporting infrastructure is not fit for the 21st century – there is an existing trend of car commuting and declining bus use that will continue if no action is taken. The links between neighbourhoods and urban centres are not good enough and residents can struggle to get to work. Increased car use and the resulting congestion will only serve to increase the severe detrimental impact on the SCR's air quality and hence the health of its residents at a time when a climate emergency has also been declared across the City Region.

Accessing major employment sites and land available for development is and will be, restricted by unconstrained car use, which could stifle any immediate economic growth, resulting in a drag on productivity, competitiveness and a great underutilisation of talent and skills.

Therefore, there is a clear need to take action now to improve the opportunities for people to use public transport and active modes and to make these modes the preferred choice of travel for increasing numbers of people across the SCR, linked to the identified growth and employment opportunities, but also for leisure trips.

Drawing together the stated objectives of the TCF and the wider social and economic objectives of the SCR, there is a number of areas across the SCR where the economic opportunities that have been identified could have the greatest impact on existing deprivation – these are the areas that currently experience transport poverty.

Put simply, the biggest opportunity for future transport investment, including TCF, is to better connect the areas of transport poverty, with those areas of opportunity by public transport and active travel modes, allied to achieving significant mode shift away from the private car on key corridors that could stifle future growth ambitions, thereby achieving growth in a sustainable way that addresses current health issues and improves air quality.

Therefore, the overall aim of this TCF bid is to promote a series of interventions that contribute towards the SCR's local aim to improve intra-city region connections that either:

- Connect areas of deprivation/transport poverty to areas of economic opportunity by public transport and active travel modes; or
- Seek to achieve significant mode shift away from the private car on key corridors and in areas where future growth ambitions and improved health and air quality would otherwise be compromised.

These aims are entirely in line with the overall TCF objectives of supporting the local economy and boosting productivity whilst reducing emissions and improving air quality, as well as other local, regional and national policies. Improving intra-city region public transport and active travel connections will allow the SCR to realise its potential but to do this in a sustainable way that addresses current health issues and improves air quality.

3. ECONOMIC CASE

INTRODUCTION

This section identifies the likely economic, environmental, social impacts of the proposed package of interventions and their resulting value for money.

The key points from the Economic Case are as follows:

- The interventions proposed within this TCF bid will a provide range of wider economic, environmental and social benefits.
- A Benefit : Cost Ratio (BCR) has been calculated for preferred package of interventions, based on the inclusion of the monetised impacts that it is possible to include using the appraisal and modelling tools available.
- For all three funding scenarios, the BCR shows a Medium/High value for money for the overall TCF programme and the supporting qualitative assessment suggests BCR may be higher with the addition of other monetised benefits related to individual interventions.

MODELLING TOOLS AND ASSUMPTIONS

Individual schemes within the TCF programme are at very different stages of development – from conception through to detailed design – this provides a number of practical issues relating to the appraisal process for this TCF bid. Despite these limitations, the following provides an indication of the approach taken to the appraisal of the interventions at this stage and any key assumptions.

Bus Priority and Junction Improvement Schemes

A new SCR multi-modal transport model (SCRTM1) has recently been completed to support two other large major funding bids being made by the SCR to DfT. This tool has been made use of in the appraisal of the public transport and highway interventions within the preferred TCF package. Where necessary, additional assessments have been undertaken off-line from the main transport model to support the findings of the main model.

Evidence from similar schemes implemented in the SCR has also been used to benchmark model outputs, predominantly for the proposed public transport corridor improvements and drawing on the delay information provided by the bus operators.

The SCRTM1 has a base year representation of observed 2016 travel patterns, derived using amongst other data source mobile phone data and Electronic Ticket Machine data for public transit services. The model includes representation of all trip making to, from and within the SCR on the highway (including freight), public transport and active travel. The model has been developed as a collaboration by SYSTRA and AECOM on behalf of The SCR in line with the DfT's proscribed model development advice as set out in the Transport Analysis Guidance (TAG). The model system has been thoroughly scrutinised by the DfT's Local Transport Modelling, Local and Regional Transport Analysis team.

These analyses have been supplemented by the use of small traffic network models, such as Junctions9, TRANSYT and LinSIG, used to assess journey time benefits arising from public transport improvements and existing micro-simulation models for two corridor schemes (A61 in Barnsley and Parkgate Link Road).

Active Travel Schemes

The TAG Active Mode Appraisal Tool (AMAT) has been used for all active travel interventions, using local evidence and data from the Propensity to Cycle Tool, specifically where interventions are targeted at future demand such that there is limited existing count data, although additional walking and cycling baseline counts were commissioned specifically to support this TCF bid.

Tram-train and Rail Station Improvements

The existing logic model for the tram-train trial has been updated to reflect actual patronage since the start of the trial and then used to assess the proposed new stop on the tram-train network.

For the rail station improvements, the intention was to use the Passenger Demand Forecasting Handbook (PDFH), but this has not been possible for this TCF bid. Therefore, information provided in a report by Jacobs for the then Passenger Transport Executive Group on the value for money of small scale transport interventions has been utilised instead. This work compiled a database of close to 150 schemes obtained from city regions and other local authority bodies, over a quarter of which had been the object of some sort of quantitative economic appraisal and/or ex-post evaluation, and provided estimates of the benefits that could be expected from small scale improvements.

Table 7 of the report identifies that for rail station improvements (similar in nature to those proposed within this bid), the average BCR is 4.4, with a standard deviation of 1.8. For this TCF bid, therefore, it has been assumed that the BCR for these types of intervention will be the average minus one standard deviation – this is considered to be a robust assumption. The intention remains to use the PDFH approach for the next stage of the scheme appraisal process, alongside any specific evidence from Train Operating Companies.

Sustainable Modes Interdependencies

Given the nature of the schemes within the preferred package, it is not considered that there are a large number of interdependencies that could lead to significant abstraction between sustainable modes and hence double counting of benefits within the suggested approach. However, it is recognised that on some corridors where there are proposed active travel and public transport improvements, there is the opportunity for some shorter distance trips currently made by public transport to transfer to an active travel mode.

In these instances, an initial assessment of the possible abstraction has been undertaken alongside the use of the multi-modal model. In preparing their recent Transport Strategy, SCC interviewed nearly 2,000 residents (1,519 via an online Citizen Space survey and 410 via a street survey team) about travel habits that allowed segmentation of the responses by main mode of travel vs preferred mode of travel. 721 of the respondents indicated that their existing main mode of travel within Sheffield was the bus, and of these respondents, 39 (5.4%) indicated that cycling would be their preferred mode of travel if facilities were improved. A further 29 (4.0%) indicated walking as their preferred mode.

Drawing on these findings, in those locations where there are proposed improvements to both public transport and active travel facilities, the forecasts passenger benefits arising from

the public transport improvements have been reduced by 10% to account for this possible abstraction effect. This is considered a reasonable assumption for this TCF bid.

APPRAISAL RESULTS

The principal results from the appraisal to date are summarised in the following paragraphs for the preferred TCF package of interventions – the quantitative results quoted are for the Medium funding scenario from the Financial Case.

At this stage potential benefits/disbenefits to be accrued from sub-objectives such as Landscape, Townscape, Historic environment, Biodiversity, Water environment, Security, Affordability and Severance have not been quantified, commensurate with the level of detail required for this TCF bid. However, some qualitative narrative is provided on the likely impacts based on the work done to date and the anticipated impacts of the interventions within each of the packages. Economic efficiency benefits, Noise, Air quality and Greenhouse gas benefits, Physical activity, Journey quality and accident benefits, and the impact on wider public finances, have been monetised and assessed using the approach outlined above using TAG databook values.

Economic Impacts

The primary economic efficiency benefits of the preferred TCF package result from the bus priority measures, new bus lanes and bus priority at traffic signals planned, and which accrue to public transport users. These significant travel time savings have been quantified off-line from the main SCRTM1, by multiplying the anticipated improvements in bus journey time by the bus passenger flow on each impacted road section (as forecast using SCRTM1). This suggests an overall travel time saving benefit to public transport users over 60 years of £95 million (in 2010 prices).

The highway assignment component of the SCRTM1 has been used to assess the (dis)benefits to highway users, mainly as other highway users are shown to be negatively impacted by the bus priority measures in this initial analysis. Whilst it is not the intention that these schemes remove physical highway capacity from the corridors, introduction of traffic signals to provide further bus priority inevitably imposes new delays on highway users.

SCRTM1 provides the opportunity to appraise the impacts on highway users resulting not only from the direct impacts within the corridors under consideration but also the secondary impacts resulting from re-assignment to alternative routes, redistribution and modal shift. The evidence to date suggests that the (within car mode) negative impacts on highway users outweighs the positive impacts brought about by modal shift to public transport and active travel modes (estimated to be some £155 million over 60 years in 2010 prices).

The modelling work to date suggests an annual reduction in car kilometres driven across the SCR of 25.5 million, which indicates the positive impacts of the preferred TCF package in promoting public transport and active modes. The Marginal External Cost parameters provided in the TAG Workbook have then been used to quantify a monetarised benefit for the following cost types - infrastructure, accidents, local air quality, noise and greenhouse gases.

It should be noted at this point that the SCRTM1 is an integrated multi-modal modelling system that accounts for the impacts of changing highway congestion not only on highway users but also on buses. There is some evidence from the modelling undertaken to date that

there may be secondary negative impacts accruing to these bus priority schemes for bus users, as well as those already discussed above that accrue to car users.

This is because the re-routeing and redistribution of car trips resulting from the TCF interventions will also impact on buses – both on parallel corridors and potentially even in other of the network for which bus priority measures have not yet been proposed. Programme and modelling constraints have meant it has not yet been possible to quantify these negative wider impacts on bus users reliably. However, initial modelling points to the fact they might be significant (around £50 million over 60 years in 2010 prices).

This result, which may not have been readily identifiable without access to an SCR-wide, multi-modal transport model such as SCRTM1, reinforces the fact that considerable further scheme development and modelling will be required at the Outline Business Case stage to make sure the direct and secondary impacts – both positive and negative – to all transport users are fully understood and any supplementary mitigation measures identified.

In terms of **Reliability**, it is anticipated that the interventions proposed will alleviate the observed journey time reliability issues for public transport vehicles during peak periods as illustrated by the existing problems in Figures 2.15, 2.16 and 2.17, as well as providing the absolute journey time reductions described above. A key part of the development of this TCF bid has been to work with bus operators to understand the likely magnitude of these reliability benefits and the consequential impact on operations in order to define the reliability benefits more accurately.

At this time, therefore, the impact is assessed as *Beneficial*.

The package of interventions will facilitate **Regeneration** and development in the SCR by providing additional network capacity, particularly for public transport and active travel modes on key corridors where existing congestion could stifle future growth ambitions. This is one of the key objectives of the SCR's TCF bid, with the interventions being targeted at the SCR's growth areas shown in Figure 2.9.

The impacts at this stage have therefore been assessed as being *Beneficial*.

Environmental Impacts

The package of interventions has the potential to cause some changes in traffic **Noise** by altering traffic flows on existing roads and through the creation of some new infrastructure and by the changes in traffic flow on the existing network arising from the interventions proposed. The index adopted in the UK for assessing road traffic noise during the daytime is the dB LA10,18h level, defined as the arithmetic mean of the dB(A) noise levels exceeded for 10% of the time in each of the 18, one-hour periods between 6am and midnight on a typical weekday.

The magnitude of a noise change is perceived differently dependent on whether it is a sudden change, or a change over a longer period of time. In the short term, a change in road traffic noise of 1dB LA10,18h is the smallest that is considered perceptible. In the longer term (typically 15 years after scheme opening), a 3dB LA10,18h change is considered perceptible.

As defined by DMRB Volume 11 Section 3 Part 7 HD 213/11, a change in noise level of 1dB LA10, 18h is equivalent to a 25% increase or a 20% decrease in traffic flow, assuming other factors remain unchanged. A change in noise level of 3dB LA10,18h is equivalent to a 100% increase or a 50% decrease in traffic flow.

The modelling work done to date does not identify changes of either of these magnitudes on the existing network, although there will inevitably be additional traffic on new infrastructure. Conversely, there will be some reduction in overall traffic noise with a mode shift towards public transport and active travel modes. The latter benefit has quantified using both the SCRTM1 and within AMAT, and the cumulative impact for the preferred TCF package is shown in the table below.

Element	Preferred Package – Medium Scenario
Noise Impacts (£000s)	33.79

Given these benefits are relatively small within the overall quantification of benefits in this TCF bid, and the potential localised disbenefits associated with new infrastructure, the impacts at this stage have therefore been assessed as being *Slight Beneficial*.

Overall there is a beneficial effect on local **air quality** and a beneficial effect on wider emissions for NO_X, particularly where the interventions are concentrated in existing AQMAs and within the mandated CAZ for Rotherham and Sheffield, as shown in Figure 2.12 – the three TCF priority corridors where interventions are concentrated include 19 AQMAs, amounting to 63% of all AQMAs within the SCR.

As with Noise, there may be some localised disbenefits associated with the new infrastructure proposed, although in most cases, this infrastructure should also alleviate existing congestion, which is a contributor to poor air quality.

Local air quality benefits have quantified using both the SCRTM1 and within AMAT, and the cumulative impact for the preferred TCF package is shown in the table below.

Element	Preferred Package – Medium Scenario
Air Quality Impacts (£000s)	2.43

Given these benefits are relatively small within the overall quantification of benefits in this TCF bid, and the potential localised disbenefits associated with new infrastructure, the impacts at this stage have therefore been assessed as being *Slight Beneficial*.

There will be a beneficial effect on **Greenhouse gas** emissions due to the increased use of active travel modes, mode shift to public transport and reduced congestion and the results for the preferred TCF package are summarised in the table below.

Element	Preferred Package – Medium Scenario
Greenhouse Gas Impacts (£000s)	96.11

Given these benefits are relatively small within the overall quantification of benefits in this TCF bid, the impacts at this stage have therefore been assessed as being *Slight Beneficial*.

Many of the interventions are within the existing highway boundary and therefore have minimum impact on **Landscape** – there is one new road link proposed within an existing highway corridor and adjacent to land with a mixed use development and so this is already within a built-up area, and a new bridge connection between a residential area and an area of commercial activity at iPort. As more detail on each intervention is developed, there may be some localised adverse impacts on landscape that cannot be quantified at this stage.

The impacts at this stage have therefore been assessed as being *Neutral*.

The areas through which the interventions pass are mainly existing road corridors and so there is also expected to be minimal impact on **Townscape**, however in the urban centres, there should be urban realm improvements as part of the proposals. As more detail on each intervention is developed, there may be some localised adverse impacts on townscape that cannot be quantified at this stage.

The impacts at this stage have therefore been assessed as being *Neutral*.

As far as can be established at this point, the proposed interventions are not anticipated to have an impact upon any designated heritage assets in the **Historic environment**, although there may be some localised adverse impacts on a scheme-by-scheme basis for which mitigation measures will be developed as part of the detailed design of the intervention.

The impacts at this stage have therefore been assessed as being *Neutral*.

Similarly, the proposed interventions are not anticipated to have an impact upon any areas of significant biodiversity nor any floodplains or major watercourses, although there may be some localised adverse impacts on a scheme-by-scheme basis for which mitigation measures will be developed as part of the detailed design of the intervention.

The impacts at this stage on both **Biodiversity** and **Water environment** have therefore been assessed as being *Neutral*.

Social Impacts

The interventions are likely to have a significant impact on the level of **Physical activity** across the SCR given the range, scope and quality of the infrastructure proposed specifically for active travel modes. The benefits for these elements of the preferred package of active travel interventions has been assessed by AMAT, covering the sum of the reduced risk of premature death and absenteeism benefits, and the results are summarised in the table below.

Element	Preferred Package – Medium Scenario
Physical Activity Impacts (£000s)	94,064.6

The impacts at this stage have therefore been assessed as being *Moderate Beneficial*.

There is likely to be an improvement to **Journey quality** given that the majority of interventions provide new active travel infrastructure, as well as those measures that will improve the reliability of public transport services. The benefits for the active travel elements of the preferred package of active travel interventions has been assessed by AMAT, and the results are summarised in the table below.

Element	Preferred Package – Medium Scenario
Journey Quality Impacts (£000s)	53,543.7

The impacts at this stage have therefore been assessed as being *Moderate Beneficial*.

There will be a reduction in **Accidents** due to the provision of new infrastructure, mode shift to public transport and reduced congestion and the results for the preferred TCF package are summarised in the table below.

Element	Preferred Package – Medium Scenario
Accident Impacts (£000s)	10,901.2

The interventions are likely to have a significant beneficial impact on **Security**, particularly where segregated facilities are proposed for new active travel modes, but also the proposed improvements to the facilities at rail stations, as well as on the routes to/from them. Figure 2.14 illustrated the potential catchment of the SCR's rail network based on current and planned land use, if safe facilities are provided.

The impacts at this stage have therefore been assessed as being *Moderate Beneficial*.

Accessibility is a key distributional impact that needs to be considered in scheme appraisals. The interventions are likely to improve **Access to services**, particularly public transport and active travel modes, by providing new and/or additional means of accessing the transport network, particularly for those in the SCR's areas of identified transport poverty as shown in Figure 2.10. Investment in the TCF priority corridors through the TCF will benefit around 108,000 people living in the areas of transport poverty.

The impacts at this stage have therefore been assessed as being *Moderate Beneficial*.

Personal **Affordability** relates to the monetary costs of travel, which can be a major barrier to mobility for certain groups of people, with particularly acute effects on their ability to access key destinations and employment areas. The proposed interventions do not specifically include for an alteration of public transport fares at this stage of scheme development, but the interventions could have an impact on affordability by providing alternative, cheaper, transport modes for the 27% of SCR households without access to a car.

The impacts at this stage have therefore been assessed as being *Slight Beneficial*.

Severance primarily concerns non-motorised modes of transport, and some interventions will have a positive impact on severance where new facilities will enable users to cross road or rail corridors as part of their everyday journeys, such as the proposed new bridge into a large commercial development at iPort.

There may be some localised severance disbenefits with increased highway corridor widths resulting from the proposed interventions, but these could be offset as the scheme design progresses by improved crossing facilities at junctions along the key corridors.

The impacts at this stage have therefore been assessed as being *Slight Beneficial*.

Option values refer to the perceived value people place on having an option that they would not normally use now being available for use as a result of the proposals. In this instance, option values are enhanced as the interventions introduce the ability to use active travel modes for large areas of the SCR where this is not perceived as possible at present. One of the themes of the SCR's Transport Strategy is to make active travel modes the natural choice for shorter journeys across the City Region.

It is therefore considered that the preferred package of interventions would have a *Large Impact* at this stage.

SENSITIVITY TESTS

A series of sensitivity test have also been undertaken to confirm the robustness of the appraisal results. These include:

- Using the default 20 year appraisal period in AMAT irrespective of the quality and scale of new infrastructure proposed
- Excluding accident benefits from the AMAT results
- Excluding the negative impacts of traffic re-assignment on bus user benefits.

APPRAISAL SUMMARY TABLE

The Appraisal Summary Table (AST) is designed to provide decision takers with a concise overview of all impacts of the programme, bearing in mind the approach taken to date on the modelling of impacts.

4. FINANCIAL CASE

INTRODUCTION

This section presents the Financial Case for the proposed package of interventions, concentrating on their affordability and potential funding arrangements.

The key points from the Financial Case are as follows:

- Three funding bids have been prepared, covering High, Medium and Low scenarios, as required by the TCF guidance.
- The total TCF requirement (including the Tranche 1 schemes already approved) estimated at present across each of these three funding bids is £231.7 million (High), £199.4 million (Medium) and £184.8 million (Low) – these are outturn costs that include for risk and inflation.
- The majority of the total programme funding is expected to come from TCF, but there is a commitment by the SCR to provide a local contribution – this currently stands at 18.0% of the total of the works anticipated.

SCHEME COSTS

A number of approaches have been adopted in producing the order of magnitude cost estimates for each of the proposed interventions at this stage. These include:

- Existing cost plans produced by Project Teams and based on current design work (costs rebased to 2019 prices)
- Experience of similar schemes delivered in the SCR recently
- UK sourced unit rates and benchmarking rates
- Percentages for preliminaries, fees etc, based on recent local scheme and current framework rates.

Inflation assumptions are based on Tender Price Index (TPI) forecasts produced by Turner & Townsend for the SCR Mass Transit project. A provision of 5% per annum has been applied based on a five year forecast range (which is consistent with TCF timescales) and assuming a consistent pattern across the subsequent years, assessed against past inflationary figures for TPI, consumer price index and retail price index.

A Quantified Risk Assessment (QRA) has been and this has replaced the standard risk allowance applied previously. Separate QRA figures (50th percentile) have been used for the three funding scenarios.

As required by the TCF guidance, three funding bids have been prepared, covering High, Medium and Low scenarios. The current scheme costs for the preferred package of interventions in each of these scenarios are shown in the following tables.

HIGH (£ million)	2019/20	2020/21	2021/22	2022/23	Total
River Don Corridor					
DfT capital	0.0	7.4	20.7	18.7	**46.8**
Local contribution	0.5	0.7	1.0	1.5	**3.6**
Private contribution	1.6	0.3	0.7	0.1	**2.7**
Total	**2.0**	**8.4**	**22.4**	**20.3**	**53.1**
Dearne Valley Corridor					
DfT capital	0.0	18.6	43.3	23.9	**85.8**
Local contribution	4.3	5.4	1.8	0.3	**11.9**
Private contribution	0.0	0.0	2.0	0.0	**2.0**
Total	**4.3**	**24.0**	**47.1**	**24.3**	**99.7**
AMID Corridor					
DfT capital	0.0	10.3	36.6	52.2	**99.1**
Local contribution	6.1	6.3	0.3	2.9	**15.6**
Private contribution	0.4	0.9	0.0	0.0	**1.3**
Total	**6.5**	**17.5**	**36.8**	**55.1**	**115.9**
Tranche 1 Component (already funded)[1]					
DfT capital	4.3	0	0	0	4.3
Local contribution	1.4	0	0	0	1.4
Private contribution	1	0	0	0	1
Total	**6.7**	**0**	**0**	**0**	**6.7**
TOTALS	**19.6**	**50.0**	**106.2**	**99.6**	**275.4**
Total capital	19.6	50.0	106.2	99.6	275.4
Total DfT funding requested	4.3	36.4	100.5	94.8	236.0
Total local/private contribution	15.3	13.6	5.7	4.9	39.5
Allowance for inflation					25.5
Cost of risks identified					21.9

[1] Includes 2018/19 Tranche 1 allocation

MEDIUM (£ million)	2019/20	2020/21	2021/22	2022/23	Total
River Don Corridor					
DfT capital	0.0	6.2	16.7	16.6	**39.5**
Local contribution	0.5	0.7	1.0	1.5	**3.6**
Private contribution	1.6	0.3	0.7	0.1	**2.7**
Total	**2.0**	**7.3**	**18.4**	**18.2**	**45.9**
Dearne Valley Corridor					
DfT capital	0.0	15.7	37.0	17.4	**70.1**
Local contribution	4.3	5.4	1.6	0.3	**11.5**
Private contribution	0.0	0.0	2.0	0.0	**2.0**
Total	**4.3**	**21.0**	**40.6**	**17.7**	**83.6**
AMID Corridor					
DfT capital	0.0	10.2	32.0	47.6	**89.8**
Local contribution	6.1	6.3	0.3	2.9	**15.6**
Private contribution	0.4	0.9	0.0	0.0	**1.3**
Total	**6.5**	**17.4**	**32.3**	**50.5**	**106.7**
Tranche 1 Component (already funded)[1]					
DfT capital	4.3	0	0	0	**4.3**
Local contribution	1.4	0	0	0	**1.4**
Private contribution	1	0	0	0	**1**
Total	**6.7**	**0**	**0**	**0**	**6.7**
TOTALS	**19.6**	**45.7**	**91.2**	**86.4**	**242.9**
Total capital	19.6	45.7	91.2	86.4	242.9
Total DfT funding requested	4.3	32.1	85.7	81.6	203.7
Total local/private contribution	15.3	13.6	5.5	4.8	39.2
Allowance for inflation					23.1
Cost of risks identified					19.7

LOW (£ million)	2019/20	2020/21	2021/22	2022/23	Total
River Don Corridor					
DfT capital	0.0	5.1	15.2	14.6	34.9
Local contribution	0.5	0.7	1.0	1.5	3.6
Private contribution	1.6	0.3	0.7	0.1	2.7
Total	**2.0**	**6.1**	**16.9**	**16.2**	**41.2**
Dearne Valley Corridor					
DfT capital	0.0	15.7	36.2	16.4	68.2
Local contribution	4.3	5.1	1.5	0.3	11.2
Private contribution	0.0	0.0	2.0	0.0	2.0
Total	**4.3**	**20.8**	**39.7**	**16.6**	**81.4**
AMID Corridor					
DfT capital	0.0	9.4	28.7	43.6	**81.7**
Local contribution	6.1	6.3	0.3	2.9	**15.6**
Private contribution	0.4	0.9	0.0	0.0	**1.3**
Total	**6.5**	**16.5**	**28.9**	**46.6**	**98.5**
Tranche 1 Component (already funded) [1]					
DfT capital	4.3	0	0	0	4.3
Local contribution	1.4	0	0	0	1.4
Private contribution	1	0	0	0	1
Total	**6.7**	**0**	**0**	**0**	**6.7**
TOTALS	**19.6**	**43.4**	**85.5**	**79.4**	**227.9**
Total capital	19.6	43.4	85.5	79.4	227.9
Total DfT funding requested	4.3	30.1	80.1	74.6	189.1
Total local/private contribution	15.3	13.3	5.5	4.8	38.8
Allowance for inflation					20.8
Cost of risks identified					17.7

ONGOING SCHEME COSTS

The cost estimates developed for the programme include whole life costs so as to address the issue of operating and maintenance costs as part of this TCF bid.

FUNDING STRATEGY

The majority of the funding is expected to come from TCF, but there is a commitment by the SCR to provide a local contribution. The anticipated level of the local contribution is shown in the table above – this has been confirmed by the SCR Local Authorities as part of their approval of this TCF bid.

Proposed sources of the local contribution include the following:

- Local Growth Fund
- Integrated Transport block allocations
- Borrowing
- Local Authority reserves
- Section 106 contributions
- Bus operators
- Train operating companies.

Some of the bus priority measures within the TCF programme will benefit commercial bus operators. The existing bus partnership arrangements require any savings made by the bus operators as a result of public sector investment to be re-invested in services within the SCR. This principle will be applied to attract additional third party contributions as more detail on individual interventions or packages of interventions is available.

Similarly, more detail will be developed on the likely benefits of individual interventions at rail stations such that discussion on possible contributions can be undertaken with the relevant train operating companies using allocated funds for such improvements that have been identified in their franchise agreements.

In Sheffield, there is a live HIF bid (to Homes England) that includes elements that align with/complement the Sheffield-Kelham-Burngreave active travel proposals, and which could be considered as possible complementary investment, but has not been included in this TCF bid as a confirmed local contribution.

5. COMMERCIAL CASE

INTRODUCTION

This section provides evidence on the commercial viability of the proposed package of interventions, the requirement in terms of outputs and the procurement strategy that will be used to engage the market.

The key points from the Commercial Case are as follows:

- All aspects of the preferred TCF programme are commercially viable.
- The elements of the preferred TCF programme have a clear set of outputs, all of which will help accelerate planned economic growth and improve productivity across the SCR through targeted investment in public transport and active travel connectivity, particularly in areas of transport poverty.
- A range of alternative approaches to procurement have been considered but is thought preferable that the majority of the interventions within the TCF programme will be delivered by the South Yorkshire Local Authorities and SYPTE, with Northern Rail procuring the improvements at local rail stations.
- Each procuring authority has identified a preferred procurement route, with an alternative if needed, making use of existing arrangements where possible.

COMMERCIAL VIABILITY

The schemes within this TCF programme are all commercially viable as the SCR, SYPTE and the South Yorkshire Local Authorities have considered whole life costs during the development of the programme and the production of scheme costs. The scope of the individual schemes included within the programme have been tailored to ensure that it is entirely deliverable within the timescales within which funding is available.

Approval has been sought from each of the individual authorities to the stated local contributions and each has also confirmed an acceptance of responsibility for meeting any ongoing revenue and capital requirements for the elements of the programme.

The TCF programme predominantly comprises new or upgraded transport infrastructure that will be maintained by the relevant local highway authority once constructed. There are no other ongoing costs that will affect the commercial viability of these improvements.

There is planned investment in new and expanded park and ride facilities at Parkgate and Magna. The work done to support this SOBC by SYPTE that indicates the improvements can be commercially viable given existing latent demand and likely attraction of additional users to the tram-train service.

Some of the bus priority measures within the TCF programme will benefit commercial bus operators in terms of reduced journey times and improved reliability of services. This should have the effect of reducing bus operating costs for services using the facilities, as well as increasing passenger numbers and revenue. Previous investment in such facilities has

shown this to be the case, but it is often difficult to attribute specific commercial returns in isolation.

The main commercial bus operators have been involved in the preparation of this SOBC and their input will continue as the design process moves forward. At the appropriate time, SCR and SYPTE will discuss with bus operators to determine whether and how commitments to complementary improvements, such as new vehicles, improved service levels and reduced fares, could be delivered. This will be done through the existing bus partnership arrangements, which requires any savings made by the bus operators as a result of public sector investment to be re-invested in services within the SCR.

A separate assessment is being undertaken to confirm the commercial viability of the low emissions bus trial that is part of the TCF programme, but as this is a trial, should the return on investment envisaged not materialise, then there will be no ongoing liability.

Northern Rail as Station Facility Owner (SFO) is responsible for operation and maintenance of the rail stations across the SCR. It is party to various existing contracts to execute these obligations and the expectation is that the station enhancements planned in the TCF programme would be added to this portfolio, offset by the increased revenue from an uplift in patronage. The improved facilities would then become part of the baseline asset register for the next Northern Rail franchisee and SFO.

No specific market engagement has yet taken place on the SCR TCF programme, but given the nature of the works involved, there is expected to be a good level of market interest given previous experience of schemes of the type included within the programme.

OUTPUT-BASED SPECIFICATION

The anticipated outputs from each of the interventions within the preferred TCF programme are set out in Appendix D, and these will be refined and updated as more design work is undertaken. At a high level across the SCR, the consolidated outputs of this programme are:

- XXkm of improved walking and cycling infrastructure
- XXkm of new walking and cycling infrastructure
- XXkm of new infrastructure to benefit buses
- XXkm of new bus lanes
- XX junction improvements to benefit non-car modes
- Improvements to the facilities at 12 local rail stations
- Deployment of XX low emission buses for the period of the TCF programme.

As noted in the Strategic Case, the overall aim of the TCF programme is to promote a series of interventions that contribute towards the SCR's objective to improve intra-city region connections that either:

- Connect areas of deprivation/transport poverty to areas of economic opportunity by public and sustainable transport modes; or
- Seek to achieve significant mode shift away from the private car on key corridors that could stifle future growth ambitions.

The planned economic growth in the SCR can be accelerated through targeted investment in public and sustainable transport connectivity. The TCF programme will improve the speed and reliability of existing journeys on sustainable transport modes, encourage journeys to

switch from the private car to sustainable modes and encourage new journeys to be made using those modes.

The overall outcomes of the TCF programme are described in the Economic Case and are aligned to the Measures for Success set out in the SCR Transport Strategy.

PROCUREMENT STRATEGY

The preferred TCF programme involves seven partners – SCR, SYPTE, the four South Yorkshire Local Authorities and Northern Rail, where there are works at local rail stations. Bearing in mind that each of these partners has their own existing procurement procedures, the establishment of a robust procurement strategy for the TCF programme was the subject of a discussion at the TCF Programme Board in September 2019.

To inform the discussion, each procuring authority (except for Northern Rail) outlined their current position, and it was evident that there is a variety of existing arrangements in place. Although there was considered some merit in exploring ways to let joint framework contracts to help deliver projects across the SCR in the future, such contracts are unlikely to be operational in time for the TCF programme, hence the need to establish a strategy that takes account of the existing arrangements, but sought to provide clarity and certainty within the delivery process and minimise the identified risks.

SYPTE will be responsible for procuring the rail elements of the TCF programme including the number and scope of individual contracts, budget, cost control, programme and relationship management with Northern Rail as SFO. Since the station improvements are largely similar to works undertaken across the network it has been agreed that it would be more efficient to procure individual work packages utilising Northern Rail's existing framework-type arrangements.

SYPTE will also managed the interface between the works at the station and the works undertaken by each Local Authority on the approach to the station.

Therefore, the remainder of the procurement strategy covers the active travel and (non-rail) public transport interventions only.

Establishing a common procurement strategy also needs to be mindful of SCC's current PFI contract with Amey Hallam Highways. Depending on the scope and scale of the works, this could preclude other contractors working within the City without a separate procurement procedure (adding time and cost to any contract), and it is unclear whether the existing arrangement could varied efficiently to allow Amey Hallam Highways to work within other South Yorkshire Local Authorities.

On this basis, the six remaining partners first discussed the options for procuring the necessary design work to progress the interventions within the TCF programme. Given the experiences to date in progressing the designs of individual schemes within the procuring authority responsible, and also with regard to the ability of each authority to call on external support and resources, it was agreed to retain the existing approach for the procurement of the design services through the detailed design and contract preparation stage. This will see the use of both in-house and external resources, the latter being either retained through a framework or procured on a needs basis, as has been done by SCC for the design work to date.

In terms of scheme delivery, the review of procurement options was first discussed in relation to two dimensions in particular:

- Who would be the 'client'? and
- What is the contract scope/length?

It was felt that by exploring these issues, a preferred procurement strategy could be developed.

The options for the 'client' were identified as:

- Each procuring authority individually
- Groups of authorities on a route/corridor basis, or by geographical connections
- All procuring authorities collectively, with a single accountable body
- SCR, on behalf of all procuring authorities.

Although it was acknowledged that either of the latter two would be the most simple, and likely to be preferable to the DfT, current legislation would require various Section 278 Agreements to be in place where other authorities (or SCR) were letting and managing contracts in locations where they were not the local highway authority.

Such a restriction would apply to all but the first option, with the added complication of SCC's existing PFI contract, and was felt to result in an unnecessary layer of administration and agreements that could offset the planned delivery of the scheme. Hence, the agreement from the TCF Programme Board was to pursue the first option, but with the possibility of retaining the second where an overall joint procurement exercise would be better value for money.

In terms of the scope and length of the contract, the following elements were discussed to determine which option best suited the needs of the TCF programme and with a mind to the contracting arrangements with the SCR that would be needed:

- On a corridor basis
- On a geographical basis (by each local highway authority area)
- On a theme basis (by active travel/public transport)
- On a time basis (Year 1, Year 2, Year 3 and Year 4)
- On a value basis (relating to each individual intervention)
- On a whole programme basis.

The advantages and disadvantages of each were discussed, with the key factor being the need to balance the timely delivery of the TCF programme with the drive to maximise efficiency, whilst mindful of existing arrangements. It was agreed, however, that there was an advantage in streamlining the management of the programme delivery and providing the opportunity to reduce the number of contracts and contractors involved.

As a result, the preferred procurement strategy is based on division by a balance of a theme and geographical basis. This mirrors the approach taken on other funding bids with the DfT and other Government departments and will be underpinned by back-to-back agreements between the SCR and the South Yorkshire Local Authorities.

All contracts will be let in line with SCR's, SYPTE's and the South Yorkshire Local Authorities' standing orders to ensure that best value for money is delivered. Evaluation and award of contract will most likely be made on the most economically advantageous tender received by the procuring authority. Every attempt will be made to co-ordinate evaluation

criteria across different authorities by sharing such criteria (and adapting if necessary) before any contracts are awarded.

All tendered contract packages will be let in accord with the contract procedure of the authority letting the contract or the procurement route for any schemes over the OJEU threshold (if this still applies after the UK leaves the EU) will be via the YORCivils framework. As in many cases the design of an individual scheme will be straightforward, a more typical client/designer and contractor/constructor relationship will be deployed. Procurement of larger schemes could be on a design and build basis using the NEC form of contract.

The NEC suite of contracts are well understood and are a tried and tested set of contracts used on large scale construction schemes. In addition, the implementation of NEC contracts has resulted in major benefits for projects both nationally and internationally in terms of time, cost savings and improved quality. The recent update to the NEC4 suite of contracts from NEC3 reflects procurement and project management developments and emerging best practice, with improvements in flexibility, clarity and the ease of administration.

Further details on the approach to procurement are provided in the following paragraphs.

Active Travel Schemes

Delivery of the works in **Barnsley** will be considered under the terms of the Council's contract procedure rules to ensure best value for money in terms of cost, quality of work and actual delivery timescales to maximise expenditure.

This will include a combination of the following (depending on the nature of the works and the availability of resources):

- The procurement of the works via the YORCivils framework contract which has already been established and complies with OJEU regulations, allowing the Council to minimise the procurement timescales once approval for a scheme is granted – appointment will be on the most economically advantageous bid
- The delivery of the works being provided in-house by Barnsley Metropolitan Borough Council (BMBC), subject to approval by the Executive Director of Place, and if so, subject to value for money considerations, progress all works.

In **Doncaster**, the majority of the work is likely to be carried out by Doncaster Council Officers – this includes design, feasibility and delivery of the works. If required, contractors will be procured via framework community partnering arrangements for the works, initially in an ECI role (for design development/buildability input and to maximise value engineering opportunity and help develop robust baseline programme and cost data).

In **Rotherham**, the majority of the works will be also undertaken by RMBC's in-house Highway Delivery Team. The costs associated with the Highway Delivery Team have been commercially tested and offer value for money compared to other similar organisations. However, the Council is a member of the Midlands Highway Alliance Framework which enables the appointment of design and construction contracts. If there are any issues with design or delivery, the Council can utilise this framework to procure services. This framework builds on previous experience and includes a series of KPIs to ensure that the contractor performance is constantly revised and fed back into contractor selection models. Contractors are therefore incentivised to continue to deliver schemes on time and within budget. Membership also gives access to a professional services framework contract for design services.

In **Sheffield**, SCC has an existing competitively tendered highways PFI contract with Amey Hallam Highways that contains two different types of service 'core' and 'non-core'. 'Core' works cover the investment and maintenance in highway infrastructure. 'Non-core' works cover the design and construction of capital works for both highway and off-highway schemes. Amey will be engaged under the 'non-core' element of the contract for schemes that are below OJEU threshold as this is the fastest route to delivery as the need to tender the works is negated. For works over the OJEU threshold, works will be tendered through existing framework arrangements, such as the YORCivils framework.

Public Transport Schemes

The public transport schemes will be delivered in a similar way to the recent successful Better Bus Area (BBA) Fund schemes, where design has been undertaken 'in house' and construction integrated into ongoing work with the South Yorkshire bus partnership arrangements. The details for delivery will vary depending on the type, size and location of the scheme. For larger schemes this will include:

- The use of consultants for design from existing frameworks where there is no in-house capacity
- Competitively procured works contractors or as noted above in Sheffield, the option to utilise current PFI contractor Amey Hallam Highways where schemes are classed as 'non-core' elements of the existing PFI contract.

For smaller schemes the current process for dealing with South Yorkshire Bus Partnership works will be used (for example, hotspot groups in each Local Authority area).

The relevant bus and train operators will be involved in the Project Teams, as set out in the Management Case.

The low emission bus trial element of the TCF programme will require more bespoke contractual arrangements – these are being designed in discussion with SYPTE's Legal Department.

Consequences

As a result of the preferred procurement strategy, it is currently envisaged that there will be around 30 separate contracts to deliver the interventions within the TCF programme over the four year period. As this TCF Tranche 2 bid is being submitted by SCR, there will be back-to-back funding arrangements and contracts put in place with each of the relevant procuring authorities. This is similar to the process for the LGF programme and so is already well understood.

Whilst it is acknowledged that this is not a particularly straightforward procurement strategy (such as one contract for the whole of the programme), it is hoped that the DfT appreciate that the TCF programme is significantly different to a single road or public transport scheme, and hence the procurement strategy has been developed to suit the particulars of the programme and the local circumstances in the SCR.

There is a need for time, cost and quality issues to be managed and their inevitable tensions balanced as part of the implementation of the preferred procurement strategy. The strong governance arrangements that are set out in the Management Case have been designed to address this potential issue.

RISK ALLOCATION AND TRANSFER

The construction contracts will include clauses to facilitate the transfer of appropriate risks from the procuring authority to the contractor, such as risks associated with construction costs increasing above those predicted in the Financial Case.

The scheme costs currently include a level contingency associated with risk, following the Quantified Risk Assessment, the outcome of which is described in the Management Case. At this stage of the development of the TCF programme and prior to the appointment of contractors, the cost estimate contains a greater proportion of risk borne by the SCR and its partners than will remain after the contractor appointment. The risk of the final scheme costs being higher than currently predicted remains until the tendering process is complete, at which point this risk can be transferred to the relevant contractor.

HUMAN RESOURCES ISSUES

No significant human resources issues have been identified that could affect the deliverability of the SCR TCF programme, although it is recognised that it has a considerable human resources requirement, across the SCR, SYPTE, South Yorkshire Local Authorities, the design teams and the contractor teams. At this time, resources have been identified to deliver the TCF programme, but the resource requirement will be kept under review by the TCF Programme Board and, if necessary, additional resources brought in, particularly in the area of programme and project management.

It should be noted, however, that the SCR retains an in-house programme and project assurance capabilities to guide the process centrally and ensure that the Senior Responsible Owner (SRO) will be in control of delivery and risks throughout the delivery process.

6. MANAGEMENT CASE

INTRODUCTION

This section describes how the scheme will be managed and delivered. The methodology used to define the process and procedures necessary to manage this project are based on the PRINCE2 methodology promoted by the Office of Government Commerce (OGC).

The key points from the Management Case are as follows:

- The South Yorkshire Local Authorities and SYPTE have collective experience in delivering a diverse range of similar projects and have a strong track record in the procurement and delivery of such schemes on time and to the agreed budget.
- Effective governance structures have already been established through a TCF Project Board and it is intended to retain the fundamental elements of this structure for the implementation of the programme, underpinned by effective delivery mechanisms already in place across the SCR.
- An outline phasing plan for the implementation of the TCF programme has been developed.
- Beyond the approval of this bid, further approval of the interventions within the preferred TCF programme will be made in accordance with the SCR's agreed Assurance Framework.
- A stakeholder management plan has been developed to ensure clear and consistent communications about the TCF programme.
- A risk register has been developed and is maintained by the Project Board, with the key programme-level risks scored and their impacts quantified.
- The TCF programme will be subject to a process of before and after monitoring and evaluation, in line with the SCR's Assurance Framework and the framework for the overall TCF programme evaluation that is being developed by the DfT.

The scope of the individual schemes included within the preferred TCF programme has been tailored to ensure that it is entirely deliverable within the timescales within which funding is available.

During the development of the programme, challenges around risk, costs and deliverability have all been undertaken, as well as a value for money assessment, to ensure as far as practicable that the TCF programme is deliverable and robust.

EVIDENCE OF SIMILAR PROJECTS

The South Yorkshire Local Authorities and SYPTE have collective experience in delivering a diverse range of similar projects, and have a strong track record in the procurement and

delivery of such schemes, with some examples of recent projects delivered on time and to the agreed budget including:

- Barnsley Quality Bus Corridor Improvements (A61 Phase 3 Burton Road - £7 million)
- A61 Birdwell Highway Improvements (£9.7 million)
- Dearne Towns Link Road (£30 million)
- Cudworth & West Green Bypass (£23 million)
- M1 Junction 37 signalisation (DfT pinch point scheme – £1.567 million)
- Dodworth Bypass (£5.7 million)
- A638 Quality Bus Corridor (£12 million)
- Great Yorkshire Way Phases 1 and 2 (£66 million combined)
- Doncaster Southern Gateway White Rose Way (£32 million)
- DN7 Unity Link Road (£15.8 million)
- Doncaster Station improvements (£7 million)
- Rotherham Sheffield BRT North (£29.8 million)
- Tram-Train Trial (in conjunction with DfT, Network Rail and South Yorkshire Supertram - £75 million)
- Rotherham Central Station improvements (£8.5 million)
- Rotherham Interchange improvements (£12 million)
- A61 Penistone Road Pinch Point / Better Buses scheme (£5 million, including a £1 million contribution to a major junction improvement from a large retailer)
- Sustainable Transport Access Fund in Sheffield and Rotherham (including Cycleboost, Independent Travel Training, Busboost and EcoStars – £7.5 million)
- CBTF (covering 117 buses in Sheffield).

Collectively, the SCR has successfully delivered various DfT-funded programmes (including Local Sustainable Transport Fund (LSTF) and BBA). The BBA programme probably represents the most directly applicable example of delivery for the TCF programme and has provided a number of ‘lessons learnt’ for other programmes across the SCR.

In 2013 SYPTE, SCC and local bus operators worked with DfT on the development of the BBA grant proposals. These involved the use of Bus Service Operator Grants (BSOG) to fund capital and revenue investment in bus service improvements. The result of this for Sheffield was the award of £18.3 million grant over the period 2013 to 2018 – this funding and local match was used to successfully deliver a variety of public transport schemes across the City.

Many of the BBA schemes and the environment in which they were delivered are similar to the public transport schemes included in this TCF bid including:

- Working closely with bus operators to ensure their requirements are met
- Working with the Local Highway Authority and other local stakeholders
- Managing change and risk over a five year programme.

The longer term impact of the BBA programme is being reported to the DfT as part of the agreed monitoring plan, but highlights to date include the following.

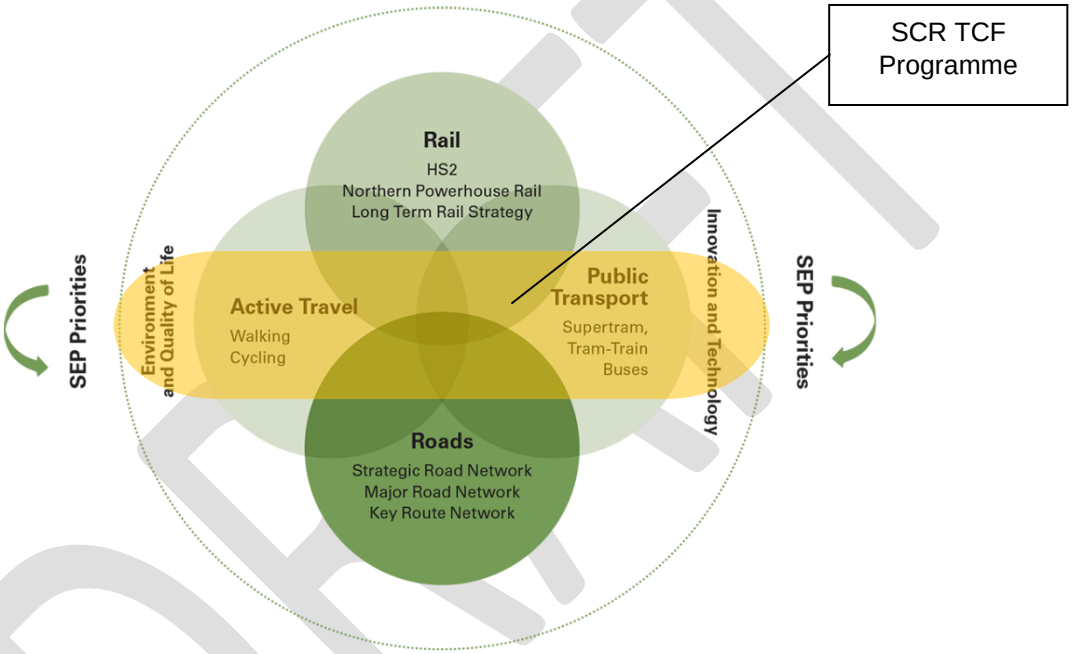
- The Penistone Road bus lane opened in March 2015 – early findings since implementation showed a 32% reduction in average bus journey times along this key section of route
- The Chesterfield Road bus priority improvements were completed in the Autumn 2018 and are now fully operational, with the final scheme enhanced by the completion of core highway maintenance works by SCC prior to completion – the scheme has delivered a more consistent and reliable inbound journey time by bus

(particularly in the morning peak) and a total journey time over the new section of bus lane of approximately 3 minutes compared to a baseline of approximately 4 minutes

- The co-location of bus operator and SCC staff at the Urban Traffic Control centre has been rewarded with many positive outcomes, and the sharing of information is benefitting all parties, both in terms of minimising the disruption when incidents occur and reducing the time taken to return services to normal following an incident.

PROGRAMME DEPENDENCIES

The TCF programme forms a key element of the implementation of the SCR Transport Strategy, but cuts across the implementation plans being developed to underpin the strategy as shown by the diagram below.



The Active Travel elements of the TCF programme will form the first four years of the Active Travel Implementation Plan and set the benchmark for the standards and delivery of the remainder of the ambitious active travel interventions that the SCR is progressing. Some of the active travel interventions within the TCF programme are focused on improving access to the South Yorkshire rail network and others will involve works on the Key Route Network (KRN) that has been defined within the emerging Roads Implementation Plan.

There is also a significant overlap between the Public Transport elements of the TCF programme and both the Roads and Public Transport Implementation Plans, although the latter will be developed in detail following the conclusion of the Bus Review described in the Strategic Case. All of the planned bus priority interventions within the TCF programme lie on the defined KRN and are aimed at improving journey times and reliability for buses along these routes, one of the key objectives of the Roads Implementation Plan.

The planned improvements to rail station facilities are entirely in accord with the recently published Integrated Rail Plan and are aligned to the minimum standards envisaged for all of the North's rail stations within the TfN Long Term Rail Strategy.

GOVERNANCE

Effective governance structures have already been established and it is intended to retain the fundamental elements of this structure for the implementation of the programme. The governance arrangements are illustrated in the diagram overleaf.

The Senior Responsible Owner (SRO) for the package is Mark Lynam, Director of Transport, Housing and Infrastructure at the SCR. The SRO is responsible to the Transport Executive Board (TEB), the Transport Thematic Board and ultimately the SCR Mayoral Combined Authority (MCA). The SRO and/or their nominated Officer(s) are also responsible for reporting progress to the DfT.

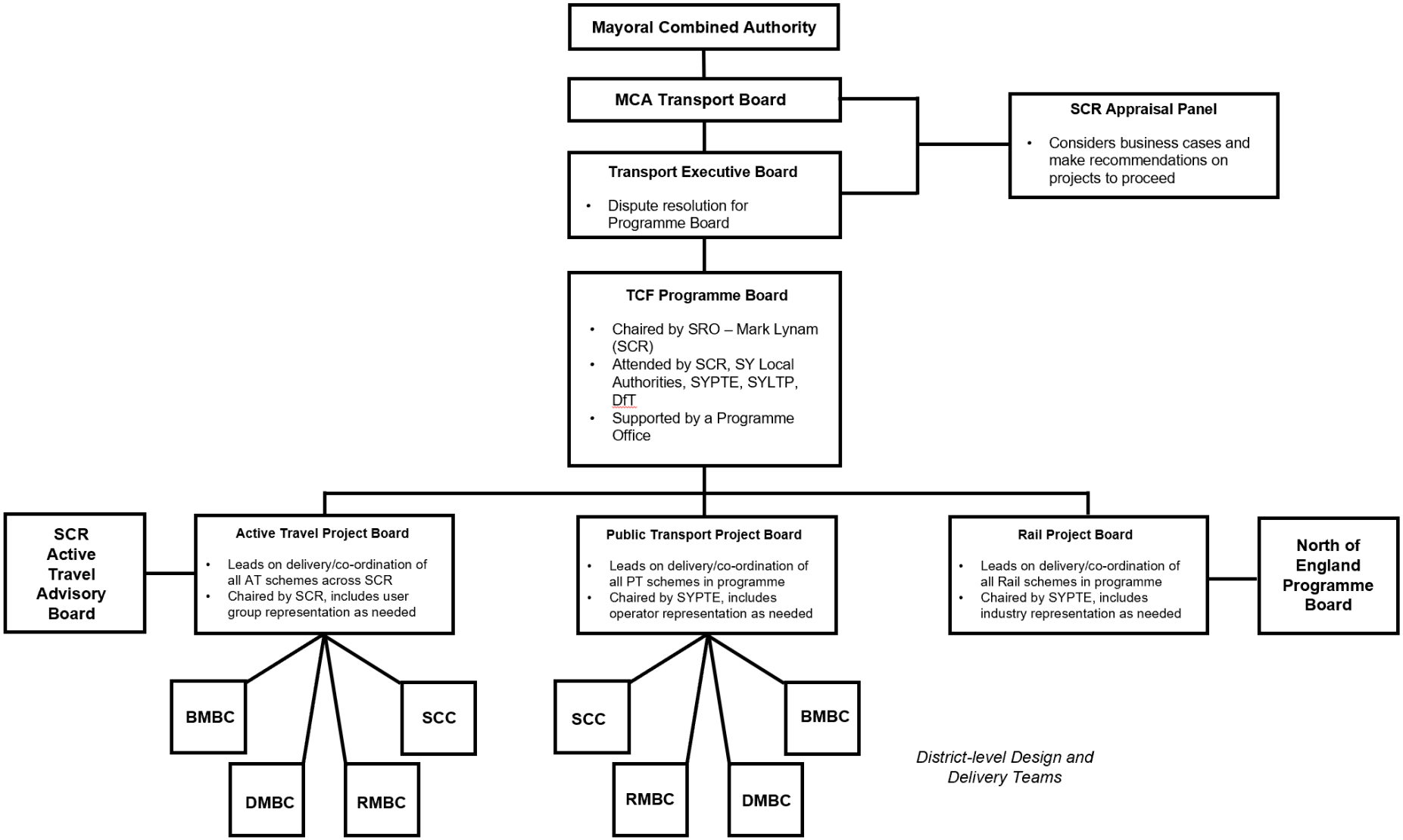
Ultimate financial accountability for the TCF programme lies with the MCA, who have approved the content of the TCF programme and this TCF bid.

A TCF Project Board, chaired by the SRO and with representatives of all key partners, has been established since January 2019, and it is intended to retain the essence of the structure for the implementation of the TCF programme, although with a recognition that it should now become a TCF Programme Board. DfT has been represented at the (current) Project Board meetings that have overseen the development of the SOBC and it is intended that this arrangement will continue into the delivery phase as part of the Programme Board.

The Programme Board meets on a monthly basis and its principal responsibilities are as follows:

- Agree and own the SOBC
- Confirm projects and resources within the TCF programme
- Accountable for the success of the TCF programme in terms of user and supplier requirements
- Receive TCF programme updates and take decisions on issues raised by the Project Boards by exception, with escalation points clearly agreed at the start of the programme
- Provide leadership, direction and challenge to the Project Boards, Project Teams and the Project Manager
- Approve (either into or continuation within) of schemes into (and through) the capital programme gateways
- Agree tolerances for time, quality and cost – this will include reviewing delegations and meeting frequency within SCR to facilitate programme delivery
- Monitor spend on the programme and delivery of outcomes
- Agree the purpose and content of project reports to be escalated through the governance structure, including both scheduled and ad hoc reports
- Maintain an overview of the programme-level risk register and own the programme-level risk pot
- Ensure effective communication with stakeholders, owning the Stakeholder Management Plan and Communications Plan
- Set up and oversee the implementation of the Monitoring and Evaluation Plan.

The SRO is supported by a Project Manager and a Bid Manager. The nominated Project Manager at this time is Peter Elliott, Principal Programme Delivery Manager at SYPTE. Peter has been responsible for the option assessment work done to date. The nominated Bid Manager is David Whitley, Senior Programme Manager (Transport) in the SCR Executive Team. It is anticipated that the TCF programme once approved will be managed by a Programme Manager supported by a Programme Office function, most likely to be serviced using internal SCR resources.


Mayoral Combined Authority
MCA Transport Board
SCR Appraisal Panel
• Considers business cases and make recommendations on projects to proceed
Transport Executive Board
• Dispute resolution for Programme Board
TCF Programme Board
• Chaired by SRO – Mark Lynam (SCR)
• Attended by SCR, SY Local Authorities, SYPTE, SYLTP, DfT
• Supported by a Programme Office
SCR Active Travel Advisory Board
Active Travel Project Board
• Leads on delivery/co-ordination of all AT schemes across SCR
• Chaired by SCR, includes user group representation as needed
Public Transport Project Board
• Leads on delivery/co-ordination of all PT schemes in programme
• Chaired by SYPTE, includes operator representation as needed
Rail Project Board
• Leads on delivery/co-ordination of all Rail schemes in programme
• Chaired by SYPTE, includes industry representation as needed
North of England Programme Board
BMBC
SCC
DMBC
RMBC
SCC
BMBC
RMBC
DMBC
District-level Design and Delivery Teams

Below the TCF Programme Board is a series of individual Project Boards, covering the three key elements of the TCF programme. Given the relationship between the active travel elements of the TCF programme and the overall SCR Active Travel Implementation Plan, the Active Travel Project Board leads on delivery/co-ordination of all active travel schemes across SCR, not just those within the TCF programme (and so has a wider remit). This Project Board is also related to the SCR Active Travel Advisory Board, ensuring a strong link to the Mayor's Active Travel Commissioner.

The Public Transport and Rail Project Boards are more autonomous and have a dedicated focus (at this point) on the interventions within the TCF programme, although it is recognised that there will be some relationship between the proposed improvements to rail stations and the North of England Programme Board established by the DfT. These Project Boards will also deal with the interface with other the active travel schemes and other public transport programmes across the SCR. Both Boards are chaired by SYPTE and include operator and industry representation as required. The format and chairing of these meetings will be designed to ensure the interests of operators are dealt with in line with SYPTE's duties regarding the unbiased treatment of all operators and the resolution of conflicts of interest.

The key responsibilities of the three Project Boards are as follows:

- Recommend the approval of schemes in capital programmes (either into or continuation within) – this would include ensuring that schemes met any minima quality criteria
- Receive monthly reports from Project Teams (and/or programme management office) and make clear recommendations to address delivery issues when they occur
- Settle any matters that may arise within workstreams across Local Authorities – matters to be brought could include:
    - How under/overspends are managed within the relevant programme;
    - Change control processes within programmes;
    - Matters relating to project priorities;
    - Matters relating to the use of resources, both internal and external; and
    - Escalation of risks
- Escalation point for decisions relating to the programme where consensus cannot be reached at a Project Team level
- Agree, as appropriate, what goes forward as recommendations/advice to the Programme Board for advice or approval (for example, priorities or use of the risk pot)
- Refer issues to the Programme Board when matters of conflict cannot be resolved within the Project Board.

Thereafter, there is a series of design and delivery teams that align to the preferred procurement strategy outlined in the Commercial Case, broadly arranged on a South Yorkshire Local Authority basis. The roles of these Project Teams include:

- Delivery of the agreed project and its outputs
- Working with users to establish and meet business needs
- Advising the Project and/or Programme Board of any risks that may arise that are likely to affect delivery of programme objectives and to be part of the risk reduction process
- Providing information for project documentation
- Producing project reports as planned to the required level of quality and to agreed timescales
- Delivery of the project specific elements of the Stakeholder Management Plan and Communications Plan

- Management of the project-level risk register – escalating issues that may require a draw down on the programme level risk pot
- Providing monthly update reports to the Project Board (and/or programme management office), requesting decisions based on clear recommendations to address issues when they occur
- Responsible for seeing a project through local political processes.

These teams, although receiving direction from the TCF Programme Board, already have their own effective delivery mechanisms in place for the types of intervention within the TCF programme.

PROGRAMME IMPLEMENTATION PLAN

An outline plan for the implementation of the TCF programme has been developed to inform the Financial Case, but more detailed delivery plans for each of the interventions will be developed in due course. The outline plan developed is shown in the table below.

Delivery Stage	Key Dates
Preliminary Design	May 2019 – December 2020
Consultation	October 2019 – April 2021
Detailed Design	April 2020 – April 2022
Start on Site	April 2020
Completion on Site	March 2023

The outline phasing plan has the design and development of the interventions front-loaded within the timeframe so as to minimise risk in terms of cost and deliverability and identify any issues at an early stage – this includes any necessary consultation.

A small number of schemes require land and/or statutory approvals, but again the early and properly planned design and development of all of the interventions within the TCF programme is intended to minimise any risk associated with these schemes.

ASSURANCE AND APPROVALS

As noted previously, beyond the approval of this SOBC, further approval of the interventions within the TCF programme will be made in accordance with the SCR's agreed Assurance Framework.

All schemes and projects seeking investment in the SCR undergo a proportionate appraisal to assess the merits of the application, its strategic fit and value for money. The first stage in the process is the production of a Strategic Business Case (SBC), which provides a first view of the 'how, what and when' the project will deliver and its strategic fit with the SEP.

A SBC is assessed in line with the five-case model in the HM Treasury Green Book guidance, and so this SOBC will address this requirement of the SCR's Assurance Framework, once approved by the DfT, given that it has also been approved by the MCA prior to submission.

Beyond the SBC stage, a project applicant or scheme promoter is required to develop the business case further. The requirements at this stage are dependent on the nature, scale, risk and complexity of the project, but would generally require an Outline Business Case (OBC) and thereafter a Full Business Case (FBC).

As set out in the Commercial Case, the individual interventions within preferred TCF programme have been grouped into a series of packages on a theme and geographic basis, and it is intended that the following OBCs (and the FBCs) will be progressed through these packages.

The required OBCs and FBCs build on the foundations of this SOBC in that they will provide more detail on each of the five cases outlined in the HM Treasury Green Book guidance but particularly that all impacts of a scheme (monetised and non-monetised) are presented in the OBC and FBC for consideration.

Once an OBC and FBC is fully developed it is then submitted to the SCR Appraisal Panel for review. An independent assessment is undertaken of all OBCs and FBCs to quality assure and scrutinise the project as well as undertaking all necessary due diligence checks. Transport projects are subjected to a WebTAG compliant appraisal at this stage, and an Appraisal Scoping Report template is used to assess such schemes.

The SCR Assurance Team completes a Value for Money (VfM) Statement and submits the appraisal report and VfM Statement to the SCR Appraisal Panel for their assessment. The Panel reviews the technical analysis undertaken by the SCR Executive Team, along with the VfM Statement. The Appraisal Panel then agrees what recommendation they will make to the relevant SCR Thematic Board – either to fully approve the project or defer the project for further work. In this case of the TCF programme, the Panel's recommendation will be made to the MCA Transport Board.

The Appraisal Panel does have delegated authority to approve projects with a grant value of £100,000 or less directly, however, it is not expected that this will be relevant for any of the packages within the TCF programme.

The MCA Transport Board can then approve a package if it is within their delegated limit (currently those with a grant value of less than £2 million), with a Delegated Decisions paper then presented to the MCA.

Packages which exceed the delegation limit would be endorsed by the MCA Transport Board and submitted to the MCA for approval.

Once packages are approved, the SCR Executive Team drafts a Grant Agreement which is based on the details in the FBC and includes any required conditions. If the package is not approved, promoters are provided with written feedback on the reasons why and invited to re-submit the application in the future.

If a significant change is required post-FBC, the promoter would submit a Change Request Form with supporting documentation to the SCR Contract Lead, who would then complete a review and submit the request to the Appraisal Panel for consideration. Depending on the impact of the change request, and the value of the initial grant, the changes would then

require the approval of either the Appraisal Panel, the MCA Transport Board or, ultimately, the MCA.

COMMUNICATIONS AND STAKEHOLDER MANAGEMENT

A Stakeholder Management Plan has been prepared to seek views, communicate progress and create consensus during the further development of the TCF programme, based on an initial mapping of the relevant stakeholders and their categorisation into the following three groups to allow a more focussed approach to each:

- Informed: those stakeholders who are kept up to date on progress or outcomes
- Consulted: those stakeholders whose opinions and solutions are sought throughout or at particular points
- Actively Involved: those stakeholders who will responsible or accountable for achieving the outcome.

The stakeholder management plan is designed to ensure existing communication processes are captured, rather than just adding new ones. This includes the integration of the four bus partnerships and Countywide governance into the TCF plan, thereby allowing for feedback on both the TCF development and the input of the wider environment in which the bus companies operate.

The current stakeholder management plan is shown on the following pages and this plan has already started to be implemented.

To supplement the stakeholder management plan, a wider Communications Plan is being developed across the SCR. The aim of the Communication Plan is to ensure the consistent and structured delivery of messages to all key stakeholders throughout the lifecycle of the TCF programme. This is to ensure that:

- Customers and stakeholders feel informed about the scheme and how it may impact them
- Customers and stakeholders feel they have had the opportunity to share their views about the scheme
- Customers are informed of the benefits the scheme will have on the local area.

This communications plan will be aligned with the communications around the overall TCF programme being developed by the DfT and also with the agreed TCF programmes of neighbouring authorities, particularly West Yorkshire.

Both the stakeholder management plan and the communications plan are to be updated at key points during the programme delivery stage, being treated as a ‘live’ document and additional information added when applicable.

The Project Boards are responsible for ensuring the agreed plans are implemented.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
Actively Involved	Funder	DfT	Delivery of the projects in TCF will contribute towards Government objectives for increasing the number of cyclists and easing congestion. Bid is being co-developed with DfT to meet fund objectives.	H	H	Will continue to communicate with DfT on development of the bid to ensure alignment with the fund objectives. DfT to continue to sit on TCF Programme Board.
Actively Involved	Approver/ Funder	Local Authorities	New infrastructure will increase the capacity on the existing network and will help to ease congestion and help deliver quality of life improvements	H	H	Work with Local Authority Officers to ensure that proposals meet the needs of the authorities. Co-ordinate through TCF Programme Board, Strategic Transport Group and Network Managers Group.
Actively Involved	Bus Operators	South Yorkshire Bus Operators	Journey time savings will reduce costs which can be reinvested in the network to improve customer offer and increase patronage	H	H	Involve operators in design and development work. Will manage through existing Bus Partnerships.
Actively Involved	Operator	South Yorkshire Supertram Limited (SYSL)	Increased patronage on the tram will support investment in the network. Congestion will also be eased further downstream from the use of the P&R.	H	H	Involve SYSL in design work of relevant elements.
Actively Involved	Operator	Northern Rail	Improved station access will lead to increased patronage and greater revenue returns that can be reinvested in the network.	H	H	Work with Northern to progress the detail design for schemes, then their implementation.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
Actively Involved	Owner	Network Rail	Improved access to rail stations will increase customer satisfaction with the Network Rail owned facilities.	H	H	Network Rail to be involved through discussions Northern Rail.
Actively involved	Deliverer	Amey	TCF projects in Sheffield that impact on the highway will impact on the existing Amey PFI contract.	H	H	Work with Amey on the design of TCF interventions in Sheffield to ensure they are delivered in a coordinated manner within their existing programme and to understand the cost implications for the PFI contract.
Consulted	User Group	Sustrans	Increase in cycling will potential shift some shorter journeys from car, improve health and have a positive impact on air quality. Could lead to increased use of the NCN.	H	M	Contact Sustrans and consider their involvement in the design stage. Identify whether there are overlaps with the NCN.
Consulted	Landowner	Verdian and Harworth (iPort Bridge scheme)	Sustainable site access will be improved to enable mode shift from car to active travel modes.	M	H	Work with landowners to ensure site access issues are addressed collaboratively.
Consulted	Landowner	Magna	Provision of a new tram-train facility at Magna will increase the available labour market and improve sustainable access to the site for employees and visitors.	M	H	Involve Magna in the design stage of the project. Encourage supporting measures to promote use of the new tram-train stop and park and ride facilities.
Consulted	Landowner	Parkgate Retail	Delivery of the link road scheme will improve site access, ease congestion and unlock land for development enabling the delivery of a park and ride site.	M	H	Work with landowners on scheme design.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
Consulted	Government Agency	Highways England	Some elements of the TCF programme will ease congestion and improve traffic circulation assisting smooth running of the strategic road network.	M	M	Highways England to be involved in the design work of relevant elements.
Consulted	Government Agency	Canals and Rivers Trust	Construction of infrastructure will contribute to enhanced public realm.	M	M	Include CRT in design phase to ensure compliance with regulations.
Consulted	Government Agency	Environment Agency	Construction of infrastructure will contribute to enhanced public realm including improved biodiversity.	M	M	Include EA in design phase to ensure compliance with regulations.
Consulted	Employer	DSA	Improved connectivity will widen the labour pool available to DSA and ease the flow of people and goods to the Airport.	M	L	Align with refreshed Surface Access Strategy being developed by DSA.
Consulted	Employer	AMID/AMRC	Improving reliability of existing transport links to the AMID and AMRC will help employers to access a wider labour pool as public transport becomes a viable travel choice. By improving sustainable travel access alongside PT reliability, congestion around the site could be eased as people travel to AMID using sustainable modes.	M	M	Work with AMID and AMRC to identify how connectivity is restricting access to labour markets and to encourage supporting measures to increase active travel.
Consulted	Employer	AWRC/OLP	Providing active travel links between the City Centre and OLP will increase the presence of OLP.	M	M	Involve AWRC and OLP in scheme design. Encourage provision of supporting measures to ensure infrastructure is promoted.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
			Enabling sustainable access to the site will help to manage congestion from car traffic as the site develops.			
Consulted	Businesses	Frontages within XXm	The benefits delivered by TCF will help to ease congestion which will enable employees to access employment and speed up the delivery of goods across the network.	M	M	Work with the Chamber of Commerce to communicate the benefits of this project.
Consulted	Residents	Residents within XXm	TCF will improve the active travel infrastructure available across the region and ease congestion on the network.	M	M	Work with our communications team to promote the benefits of the TCF bid through our communications channels.
Consulted	Safety	Police/ community safety teams	The creation of improved waiting facilities, improved station access and introduction of new active travel infrastructure, will promote feelings of safety.	M	L	Inform police / community safety teams of the station access improvement works and consider sharing designs to ensure they incorporate best practice.
Consulted	Utility Provider	National Grid	New waiting facilities and station infrastructure will create a safe and comfortable waiting environment. The low emissions bus project will lead to the reduction of emissions from diesel buses.	M	H	Installation of infrastructure both on street and at stop requires connection to/accommodation on National Grid asset register. Work with National Grid and DNO to ascertain capabilities to support introduction of EV charging at various locations.
Informed	Utility Provider	Telecomms provider	Provision of real time information at stops will improve the customer experience by increasing the confidence	L	H	Inform of TCF plans for real time information provision and the affected locations.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
			in public transport and lead to increased patronage.			
Informed	User Group	Rail passengers	At the stations that are subject to accessibility improvements, commuters/passengers will experience the benefits to the station environment however there will possibly be disruption during construction.	M	L	Work with Northern to develop communication materials to inform passengers
Informed	User Group	Public transport passengers	Delivery of the TCF programme will see improvements to journey time reliability that will benefit end users. Station access improvements will improve the customer experience of using regional rail services.	H	M	Contact user groups to test facility designs to ensure they are fully accessible and meet customer needs. Co-ordinate through SYPTE.
Informed	User Group	Cycle Sheffield (and any equivalent for other Districts)	Improving cycling infrastructure provision across the region will enable more people to travel sustainably – this could lead to higher numbers of people cycling and could encourage more people to switch from car to cycle for short journeys.	H	L	Inform of plans for provision of cycle infrastructure on TCF routes in the groups' areas of interest. Invite input at the design stage to overcome known local issues.
Informed	Landowner	Universities	Improving reliability of transport links to the AMID and AMRC will help students to connect with employment and training opportunities.	H	M	Work with university to identify how connectivity is restricting access to opportunities.
Informed	Government Agency	Public Health England	Increasing the provision of cycling and walking infrastructure will enable the uptake of active travel modes and increase the number of people achieving	H	L	Inform directors of public health of the improvements to active travel infrastructure.

Grouping (Actively Involved/ Consulted/ Informed)	Sub-Group	Stakeholder	Key Needs	Interest (H/M/L)	Influence (H/M/L)	Key Actions/Activity
			the recommended levels of daily exercise – this will improve the health of residents and visitors to the City Region and reduce the call on future resources.			

RISK IDENTIFICATION AND MANAGEMENT

A programme-level Risk Register has been developed and is maintained by the Programme Board. This is the primary means of recording risk information and monitoring risk exposure throughout the life of the programme. It not only records all identified risks, but also includes suggested mitigation measures and responsibilities.

This risk register focuses on programme-level risks and the key risks have been scored and their impacts quantified. This has been used to provide the QRA value that has been included within the Economic and Financial Cases.

The most immediate risks at this time are summarised in the following table. Reporting of key risks is undertaken at Programme Board meetings each month as necessary.

Risk Type	Description of Risk / Planned Mitigation	Owner
Management/ Resources	Resources insufficient to deliver a large scale bid, and a lack of resources may impact on the quality of the bid and/or delivery of the programme post-submission. *Mitigations:* 1) Resources to be standing item at Programme Board 2) Programme to be monitored by SRO, Programme Board and Project Boards 3) Effective resource planning to be implemented 4) Making use of frameworks – early engagement 5) Other 2019/20 funding being used to progress schemes before the outcome of the bid is known.	Programme Board
Economic/ Appraisal	Forecast outcomes are not correct, or some schemes cannot progress as planned leading to reduced outcomes and a lower BCR/VfM. *Mitigations:* 1) Sifting process to test robustness of scheme VfM/BCR 2) Appraisal process to be scoped and agreed with DfT 3) Business case(s) to be tested with appropriate level of optimism bias 4) Outcome delivery (forecast and actual) to be managed by Programme Board 5) Contingency plan to be prepared to make up any shortfall in outcomes 6) Appraisal workshop by SCR TCF Task & Finish Group to ensure consistent approach by partners with standard approach and consistent assumptions.	SRO
Financial	Inability to deliver within the allocated annual funding profiles means that some schemes may have to be curtailed or removed from programme. *Mitigations:* 1) Project Teams to be realistic about delivery of schemes in preparation of SOBC 2) Programme management processes to maintain some flexibility in funding years 3) Flexibility of profile to be discussed with DfT.	Project Manager (s)

Risk Type	Description of Risk / Planned Mitigation	Owner
Financial	Some schemes being designed at risk before confirmation of funding – if TCF bid is not successful, costs may need to be covered by revenue funding, with a lack of capacity within existing funding streams eg Integrated Transport block. *Mitigations:* 1) Discussion with DfT regarding early confirmation of some funding post-submission. 2) Confirmation that costs incurred after SOBC submission can be included in cost estimates.	SRO
Inflation	(In)accuracy of inflation forecasts may lead to final outturn costs being higher than agreed programme budget *Mitigations:* 1) Provision to be made in QRA/risk adjusted price 2) To be monitored/managed by Programme Board.	Programme Board

One of the key risks relating to the delivery phase of the programme identified within the risk register is that regarding the need to secure the necessary powers/consents for individual schemes. It is clear that most of the interventions will require some form of consent, but it is difficult to understand at this stage the level or likelihood of this risk as schemes are at an early stage of development.

The front-loading of the preliminary design of all of the interventions within the TCF programme described previously is intended to minimise this risk. As well as this approach, the risk register also includes the mitigation measure of developing some alternative and/or replacement schemes that can address this issue in the delivery phase.

A further risk identified is that around communications, particularly as consultation on a small some interventions is intended in Autumn 2019 to ensure delivery in early 2020. Inconsistent messages can undermine scheme development and/or delivery, and this is particularly important given the alignment of SCR's TCF programme with the work of the Active Travel Commissioner. To address this, the stakeholder management plan and communications plan described previously have been developed and the former is being implemented.

Project-level risks have been identified and are owned by individual Project Teams, with separate risk registers being developed at the appropriate time.

BENEFITS, MONITORING AND EVALUATION

The TCF programme will be subject to a programme of before and after monitoring and evaluation, in line with the SCR's agreed Assurance Framework and the framework for the overall TCF programme evaluation that is being developed by the DfT. The latter is expected in Autumn 2019, but some guidance on evaluation has been provided for this SOBC. This guidance suggests a general outline for monitoring and evaluation based around five elements:

- Establish a 'theory of change' for interventions
- Develop a counterfactual (usually a before and after study)

- Collect baseline data
- Plan what monitoring is needed
- Plan for data.

The SCR and its partners are committed to the monitoring and evaluation of the TCF programme to ensure the benefits of the investment are fully realised and the programmes value for money in terms of delivering economic growth and quality of life outcomes for the SCR can be demonstrated.

Any programme of monitoring and evaluation needs to demonstrate the extent to which the TCF objectives were met, monitor performance of the individual elements of the programme and ensure that any potential issues post implementation are identified and addressed.

The proposed programme of monitoring and evaluation for the TCF programme needs to support this SOBC, but also to provide a framework for development of more detailed monitoring and evaluation plans for each of the packages of interventions. It should therefore seek to enable to assessment of the entire TCF programme whilst providing flexibility to define more bespoke monitoring and evaluation plans for the individual packages that will be delivered.

As a starting point, and to pick up on the 'theory of change' approach advocated, an outline Benefits Realisation Plan (BRP) has been to identify, track and compare the various benefits expected to be delivered. In this case, a "benefit" is an outcome of change that is measurably positive and "benefits realisation" is the process for the identification, definition, measurement and realisation of benefits from a project.

The TCF objectives have been used to develop the initial 'desired outputs, outcomes and impacts' for the programme and the individual elements. These desired outputs, outcomes and impacts are the actual benefits that are expected to be derived from the programme:

- Desired outputs – tangible effects that are funded and result from the programme
- Desired outcomes – what happens as a result of the outputs
- Desired impacts – the final impacts brought about by the scheme in the short, medium and long term as a result of the outputs and outcomes.

The suggested 'desired outputs, outcomes and impacts' for the TCF programme are summarised overleaf and provide the basis for the outline BRP that will be developed further as the TCF programme progresses.

TCF Programme Objective	Desired Outputs	Desired Outcomes	Desired Impacts
To better connect the areas of transport poverty with areas of opportunity in a safe and sustainable way To affect a mode shift away from the private car on those corridors where new opportunities are likely to see an increase in demand or where growth could be stifled To create a cultural shift towards making cycling and walking the natural choice for shorter journeys To achieve the above in ways that address current health issues and improve air quality across the SCR	XXkm of improved walking and cycling infrastructure XXkm of new walking and cycling infrastructure XXkm of new infrastructure to benefit buses XXkm of new bus lanes XX junction improvements to benefit non-car modes Improvements to the facilities at 12 local rail stations Deployment of XX low emission buses for the period of the TCF programme	More walking and cycling journeys across the SCR Reduced bus journey times Improved bus journey time reliability Increased bus patronage Increased tram patronage Increased rail patronage Reduced car commuting Improved air quality	Support inclusive growth Enhanced opportunities to access new employment sites Create healthy streets where people feel safe Improve the quality of our outdoors

Based on the outline BRP, an outline Monitoring and Evaluation Plan (MEP) has also been developed for the TCF programme. It is intended that the outline MEP is refined in collaboration with the contractor commissioned by the DfT to undertake the national evaluation of the overall TCF programme. The updated MEP will be used during the implementation period to manage delivery, and post-implementation of the TCF programme, to evaluate its impact.

Through the monitoring and evaluation of the TCF programme, the SCR, alongside the national evaluation contractor will seek to:

- Understand whether and how the programmes main objectives have been achieved, exceeded or not reached
- Provide transferable evidence that may be used to inform future decision making on similar investment programmes
- Improve the efficiency and effectiveness in the delivery of future investment programmes based on the lessons learnt from the programme.

As well as the specific TCF evaluation guidance issued, the suggested draws upon the guidance set out in the document “Monitoring and Evaluation Framework for Local Authority Major Schemes” (2012) as well as MEPs used for recent similar programmes, for example BBA and LSTF.

It is initially proposed that the monitoring and evaluation will be undertaken at the level of the packages of interventions that have been defined as part of the proposed governance and assurance arrangements within this SOBC.

Once a particular intervention is completed and open, the expected benefits should be realised, however, as with many large scale transport schemes, the full realisation of the benefits (particularly the intended impacts) will take place over an extended period of time, and so this has been recognised in the development of the MEP.

Assessing the impact of the packages as a whole (whether it achieved its objectives; how well it was planned and delivered; whether it represented value for money etc) will mean a focus on accountability based research questions, seeking to assess the overall level and direction of change in defined metrics, and less on issues of attribution (mechanisms through which change occurred). However, this proposed approach will be reviewed in collaboration with the national evaluator at the appropriate point to ensure it is reflective of the needs of both the local and national evaluation programmes.

Indicators for measuring the outputs, outcomes and impacts of the programme are defined in the outline MEP so as to identify whether or not the objectives of the scheme have been achieved. The MEP also identifies when and how the indicators will be tracked. Where benefits are difficult to measure, directly proxy indicators have been defined. They way in which the indicators are defined should also allow for the extent of benefits realisation to be understood and inform the change management process.

Monitoring of the outputs are to be at both a programme and a project level and will focus on evidencing outputs are successfully delivered and cost targets and programme milestones met. The monitoring of these metrics will be a requirement of the governance and assurance processes detailed previously for the individual packages of interventions. The metrics set out in the table overleaf are therefore proposed.

Outputs	Measure	Data to be used
Project/Programme	Programme/project plan assessment Risk management effectiveness	Programme/ project management reporting
Cost	Outturn investment costs Identification of cost savings Analysis of cost overruns	Financial monitoring of project/programme

Based on the outcomes and impacts in the outline BRP, the metrics set out in the following two tables are currently proposed for the TCF programme across the SCR. In accordance with the guidance issued to date, a predominantly counterfactual approach will be adopted so as to understand the outcomes and impacts by comparing what has happened with what would have happened in the absence of any intervention.

Outcome	Measure	Data to be used
To better connect the areas of transport poverty with areas of opportunity in a safe and sustainable way	% of people living in the most deprived areas brought within a 30 minute journey time by public transport of an urban centre, SCR growth area or university	DfT methodology of assessing accessibility using the Accession software
	Walking and cycling accessibility assessment to an urban centre, SCR growth area or university	Local Transport Plan and DfT methodology of assessing accessibility using the Accession software
To affect a mode shift away from the private car on those corridors where new opportunities are likely to see an increase in demand or where growth could be stifled	Total bus patronage	Bus operator statistics
	Total rail patronage	SYPTE surveys
	Total tram patronage	Stagecoach Supertram statistics
	Morning peak traffic flow (car miles) along key corridors Mode split of peak flows along key corridors	Trafficmaster data Traffic surveys
	Satisfaction with public transport	(i) Bus ‘user’ from SYPTE household survey ii) Bus ‘user’ from Passenger Focus onboard survey iii) Rail ‘user’ from Passenger Focus onboard survey iv) Tram ‘user’ from Passenger Focus onboard survey
To create a cultural shift towards making cycling and walking the natural	Morning peak cycle flows along the key corridors	Cycle surveys
	Attitudes to cycling	User/Non-user surveys

Outcome	Measure	Data to be used
choice for shorter journeys	Attitudes to walking	
Address current health issues and improve air quality across the SCR	Total carbon emissions from the transport system (kT CO_2)	Latest data from UK local authority and regional carbon dioxide emissions national statistics
	Nitrogen dioxide (NO_x) and particulate matter (PM10) levels in AQMAs	Days where threshold exceeded in AQMAs (NO_x/PM10)
	KSI accidents (5 year average)	STATS19 data

Desired Impacts	Measure	Data to be used
Support inclusive growth	Increase in jobs - employment levels (% employed 16-64) Skills attained (NVQ4+ or equivalent) Increase in GVA (South Yorkshire)	TBC
Enhanced opportunities to access new employment sites	TBC	TBC
Create healthy streets where people feel safe	Life expectancy (M/F)	TBC
	Perceptions of safety	TBC
Improve the quality of our outdoors	TBC	TBC

The SCR will work with the national evaluators to ensure there is consistency in data collection processes and absence of bias in the data collected as required for the needs of both the local and national evaluation programme.

Although the suggested metrics apply to the overall TCF programme across the SCR, they are also considered suitable for evaluating the individual packages of interventions that sit within it. Each package will develop their own MEP and define the metrics in more detail in accordance with the objectives of the package and its geographical scope.

As a starting point, it is considered that the following metrics should be considered by the Project Teams for inclusion within the package-specific MEP as the OBCs are prepared. This approach uses existing data sources as well as some programme-specific sources. SCR will aim to ensure that a consistent approach to measurement is adopted across different packages where similar metrics are proposed across a range of work packages.

- Active Travel Interventions
  - Number of people using new and improved walking and cycle facilities
  - Attitudes to walking and cycling
- Public Transport Interventions
  - Bus Punctuality (% of services 'on time') and Reliability (standard deviation of wait times mins/trip) by route
  - Average Bus Journey Times (by service)
  - Bus Patronage (by service)
  - Passenger Satisfaction (with infrastructure and services)
  - Number of people using park and ride facilities
  - Tram Patronage (on services using new and improved park and ride facilities)
- Rail Interventions
  - Rail Patronage (on services using stations with improved facilities
  - Passenger Satisfaction (with infrastructure and services
- All Interventions
  - Accessibility to Workplace and Jobs

SCR recognises the importance of setting specific indicators and targets and accepts that this outline MEP does not yet include these. The MEP will be updated with targets following collaboration with the national evaluator and in relation to the Measures for Success included within the SCR Transport Strategy.

Costs associated with monitoring and evaluation are included within the overall TCF programme cost estimates but will need to be confirmed once further collaboration has been undertaken with the national evaluation contractor. Monitoring and evaluation will be coordinated by the SCR, who will also oversee the monitoring and evaluation of the overall TCF programme whilst the Project Boards and Project Teams for the individual packages of interventions will be required to manage the monitoring and evaluation of their projects in accordance with the agreed governance and assurance processes (for example, in line with agreed MEPs produced as part of the OBCs and FBCs required for the progression of the individual packages).

Under these arrangements, the collection and analysis of the monitoring and evaluation data will be the responsibility of the Project Teams and will be reported to the relevant Project Board. The Programme Board will set up systems to monitor the effectiveness of the TCF programme, be responsible for ensuring the agreed measures have been monitored and will consider the results of the evaluation. This approach builds upon and is in line with, the agreed SCR Assurance Framework, and means that the Programme Board can work with the Project Boards/Teams to agree corrective action if required and as a final resort secure the desired outcomes via alternative measures if necessary.

In terms of reporting on monitoring and evaluation, the following timescales are considered appropriate at this time:

- Baseline data collection will take place between September 2019 and the beginning of implementation of specific work packages
- Regular monitoring reports from individual work packages will be provided to the Project Boards and Programme Board on a monthly basis
- Individual work packages will deliver monitoring and evaluation reports as stipulated in their agreed MEPs
- An annual monitoring summary for the overall TCF programme will be produced by SCR
- On completion of the TCF programme a '1 year after' and '5 year after' evaluation report will be produced which contains the results of a meta-analysis of all

evaluations carried out, although recognising that the preferred TCF programme of interventions is such that some benefits (particularly impacts) will only occur over a much longer timescale.

The findings from proposed monitoring and evaluation process will be communicated to key stakeholders and all reports publicised via the SCR website. However, as with the remainder of the outline MEP, this proposal is subject to revision following consultation with the national evaluation contractor.

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