Transport for the South East

Economic Connectivity Review

steer

Contents

Figures and Tables

Figures

Tables

Executive Summary

ECONOMIC OUTCOMES OF TRANSPORT CONNECTIVITY

Connect business | Expand workforce | Enable development | Access gateways | Support deprived communities

THE SOUTH EAST

HIGHEST PRODUCTIVITY
in the UK outside London

7.5 m people

4 m jobs

0.3 m businesses

£200 bn
GVA per year

AND IT'S FORECAST TO GROW

HIGH GROWTH

8 high growth sectors:

- Finance & professional
- IT
- Creative
- Low carbon environmental
- Marine, maritime & defence
- Advanced engineering & manufacture
- Tourism
- Transport & logistics

Supported by **5** enabling sectors

- Business support
- Construction
- Education
- Health
- Retail

BACKING HIGH GROWTH SECTORS COULD DELIVER:
6.8m jobs
£500bn GVA

DRIVES THE UK ECONOMY

International gateways for UK trade

0.8 m homes by 2030s
just **1/2** of what could be realised by 2050

1 minute journey time saving on key corridors adds **£4.5** m to the economy

BUSINESS MUST BE ABLE TO TRADE EFFECTIVELY TO SUPPORT
a buoyant economy

Overview

Transport for the South East is a shadow Sub-national Transport Body established to speak with a single voice about strategic transport priorities for the Transport for the South East area ("the South East"). Its primary aim is to support and grow the economy through identification and prioritisation a programme of integrated strategic transport projects and programmes.

To guide the development of Transport for the South East, the following vision statement has been developed:

The South East is crucial to the UK economy and is the nation's major international gateway for people and businesses.

We will grow the South East's economy by facilitating the development of a reliable, high quality, integrated transport system that makes the region more productive and competitive, improves access to opportunities for all, and protects and enhances the environment.

The key mechanism for expressing how Transport for the South East will realise its vision will be through its Transport Strategy, and this Economic Connectivity Review is the first stage in developing that strategy.

The Economic Connectivity Review identifies the role of strategic transport in supporting the South East and UK economy, makes the case for transport investment to increase productivity and identifies the severe impacts of not investing; and provides a platform from which to bring key partners together for the ongoing development of the Transport Strategy.

Our approach is to understand the role of strategic transport connectivity in supporting the businesses and higher education and research institutes across the South East investing in and delivering incredible levels of innovation, providing jobs, and driving up productivity. The South East is a world leader in marine, maritime and defence; advanced engineering; biosciences; and connected digital sectors, all supported by digital enabling technologies and other high growth sector specialisms in finance and professional services, and transport and logistics.

Supporting the economy of the South East and the UK

Building on the advantages of the South East for inward investment: The South East is a powerful driver of the UK economy and the nation's major international gateway for people and businesses. It has many concentrations of excellence with a rich mix of innovative and integrated sectors One of the key challenge is maintaining this competitiveness in the face of intensifying international competition. The UK's global competitors continue to make important investments in their supporting infrastructure and it is vital that the UK makes a similar commitment to invest more in the infrastructure of the South East so that it continues to be a superb location for investment and to grow a business. The South East adds more than £200 billion to the UK economy each year and this is forecast to grow to over £330 billion per year in the next 30 years. Even under this 'business as usual' scenario with a corresponding increase in employment from 4 million to 4.5 million jobs, a significant increase in investment is required in transport and related infrastructure.

Promoting access to international markets for trade: The South East is a major area for international trade and foreign investors are attracted by excellent international connectivity, proximity to major markets, and higher education and research institutions. This could be significantly undermined without a period of sustained investment in infrastructure. Equally important is the area's outstanding export performance, which relies on reliable and efficient transport of goods and people to the International Gateways of the South East including the two busiest UK airports – Heathrow and Gatwick; Associated British Ports (ABP) Southampton – a deep-sea port on the main international shipping line; Port of Dover – through which one seventh of all UK trade passes and Europe's busiest ferry port; and a high speed railway link to Europe via the Channel Tunnel Rail Link. This provides a compelling argument for the need to invest in the South East as well as the Northern Powerhouse and Midlands to ensure all of these areas have strong access to international markets.

Enhancing the role of the South East as a pivot for the wider national transport system:

The South East is a transport hub connecting UK businesses to the rest of the world. The effective functioning of the strategic transport network is a priority for businesses, communities and visitors to our area. These vital arteries help people access jobs, enable businesses to connect with each other and their customers and help unlock planned development. The network plays a crucial role in supporting wider economic prosperity, innovation and competitiveness. However, infrastructure is straining to accommodate growth. By 2040 large stretches of the transport network of the South East will be severely congested. There needs to be a particular focus on supporting integrated approaches that address congestion and improve movement around our key locations.

Facilitating the development of a more sustainable approach to connectivity in the South East:

Backing the South East's high-growth priority sectors and their economic assets could deliver as much as £500 billion per year to the UK economy by 2050. There is a need to make strategic investments in the infrastructure of the South East to increase productivity and enable growth. The increase in jobs required to deliver this productivity prize is likely to be severely hampered if a significant uplift in the number of homes built through to 2050 cannot be achieved. Investment in transport to support ambitious plans and to open up sites for development will be focussed in high demand locations and needs to be supported by local sustainable transport solutions, improved skills infrastructure, smarter working and harnessing innovative, enabling technologies, the South East will provide individuals with better access to employment and businesses with the workforce they need removing this constraint to growth.

Summary

The Economic Connectivity Review shows the key roles that the transport network and its strategic corridors have in driving economic growth in the South East and the UK.

The corridors have been sequenced for further investigation based on the extent to which they support economic outcomes and the requirement and feasibility of transport intervention on the corridor. This sequencing does not rank corridor importance, but given budgetary constraints it is necessary to identify the order in which the corridors should be subject to further study as part of the next stage of Transport Strategy development. The sequencing is presented in Table 0.1

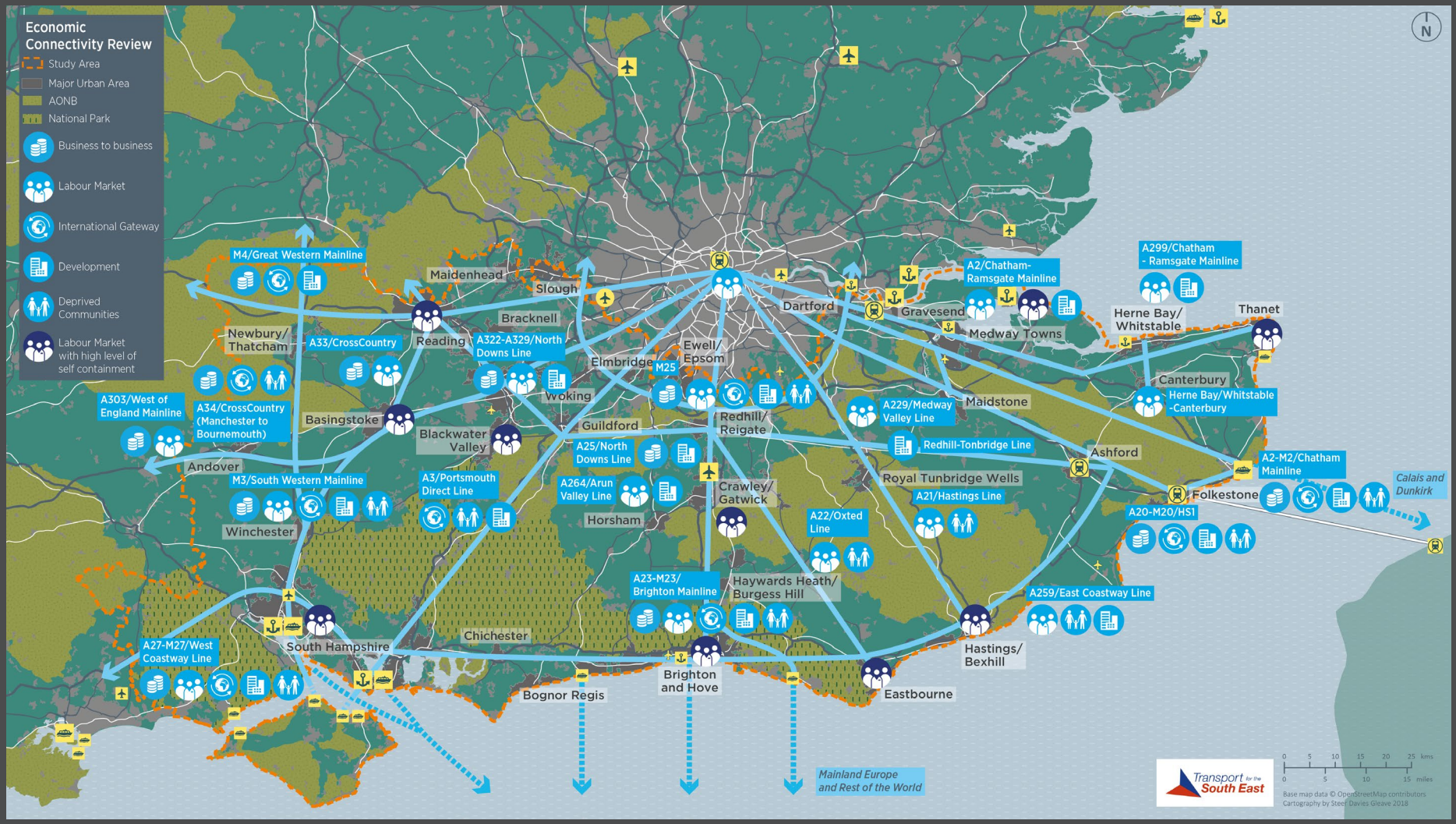
Strategic corridors, which are not sequenced highly, are key enablers of economic growth and play an important role in ensuring the transport network and economy function effectively.

As further work is carried out in the development of the Transport Strategy the other strategic corridors as well as the local transport network and its integration will continue to be considered.

TABLE 0.1: Sequencing of corridors

CORRIDOR	RANK
M25	1
M4/Great Western Mainline	2
A27-M27/West Coastway Line	3
M3/South Western Mainline	4
A23-M23/Brighton Mainline	5
A34/CrossCountry Manchester-Bournemouth	6
A2-M2/Chatham Mainline	7
A3/Portsmouth Direct Line	8
A2/Chatham-Ramsgate Mainline	9
A33/CrossCountry Manchester-Bournemouth	10
A229/Medway Valley Line	11
A20-M20/HS1	12
A259/East Coastway Line	13
A322-A329/North Downs Line	14
Redhill-Tonbridge Line	15
A22/Oxted Line	16
A25/North Downs Line	17
A299/Chatham-Ramsgate Mainline	18
A264/Arun Valley Line	19
A21/Hastings Line	20
A303/West of England Mainline	21
Herne Bay/Whitstable-Canterbury	22

FIGURE 0.1: STRATEGIC CORRIDORS



1

Introduction

Transport for the South East

Transport for the South East is a newly established shadow Sub-national Transport Body representing 16 Local Transport Authorities and five Local Enterprise Partnerships (see Figure 1.1) to speak with a single voice about strategic transport priorities for the South East.

1Transport for the South East's primary aim is to support and grow the economy in the South East by identifying and prioritising a programme of integrated strategic transport interventions. It also aims to improve the experience of the travelling public and businesses and bring about more reliable journeys free of congestion whilst safeguarding the environment.

The key mechanism for expressing how Transport for the South East will realise its vision and strategic priorities will be through its transport strategy, and this Economic Connectivity Review is the first stage in developing the strategy.

Policy and Governance

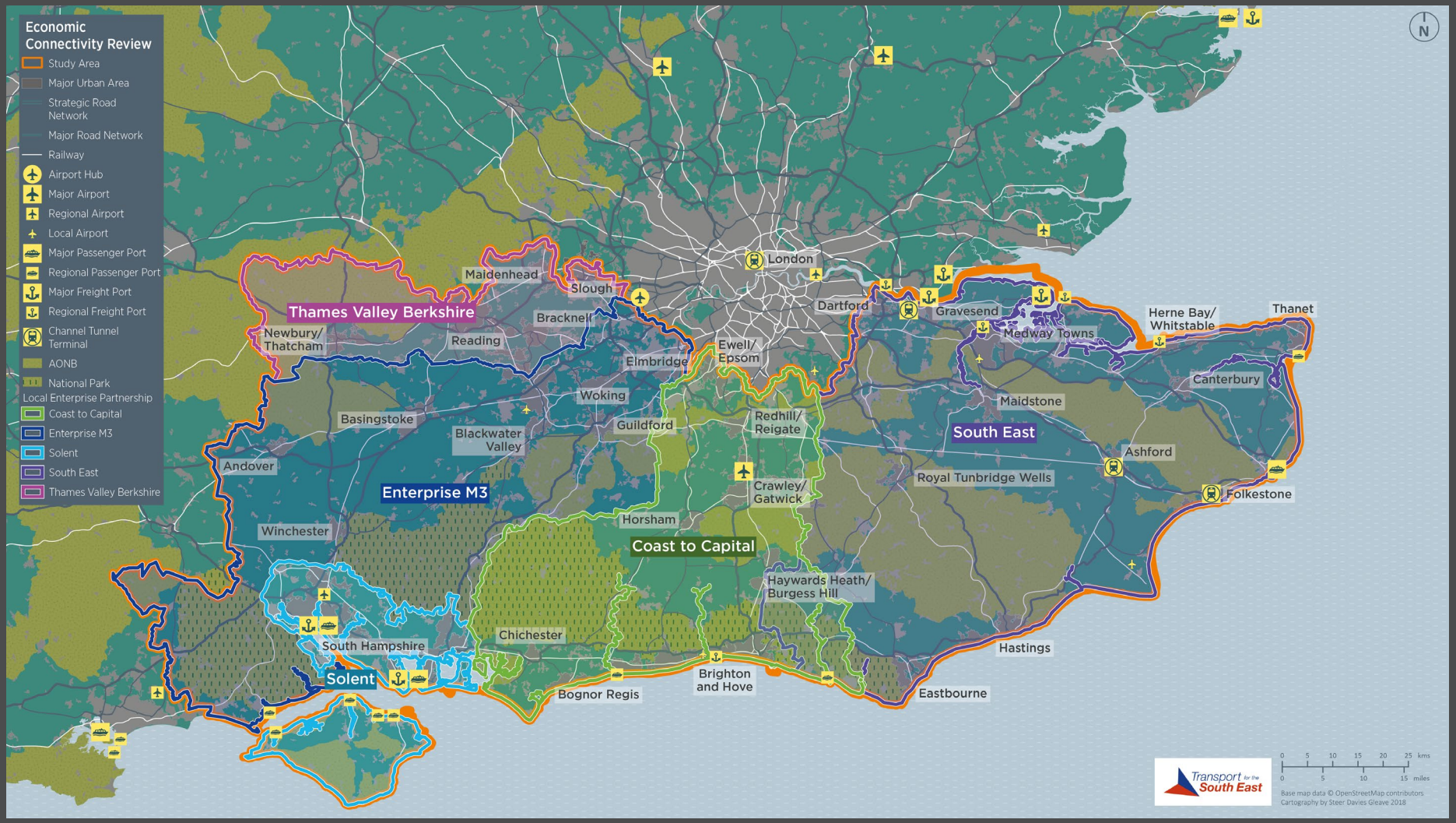
In recognition of the gap in transport planning at the regional level outside London, the Government has created the opportunity for local transport authorities to come together to form Sub-national Transport Bodies through the Cities and Local Government Devolution Act 2016.

In its Transport Investment Strategy published in July 2017, the Department for Transport set out the critical role for Sub-national Transport Bodies advising the Secretary of State, through their transport strategies, on the prioritisation of transport investments, including those overseen by Highways England and Network Rail. They can also take on powers and responsibilities aimed at improving condition for the travelling public such as the introduction of smart and integrated ticketing systems.

There has been considerable progress in setting up the Governance arrangements for Transport for the South East:

- A **Shadow Partnership Board** has been formed as the main decision-making body led by democratically elected local council leaders and other senior representatives, including co-opted Local Enterprise Partnership Chairs and the Chair of the Transport Forum as voting members. Additional non-voting Board members include the National Parks and protected landscapes, district and borough authorities. The Department of Transport also attend the Shadow Partnership Board as observers.
- A **Transport Forum** has been established to engage with wider stakeholders, including user groups, operators, business representative groups, Local Enterprise Partnerships, and funding bodies (such as Network Rail and Highways England).

FIGURE 1.1: TRANSPORT FOR THE SOUTH EAST AREA



Vision and Strategic Principles

To guide the development of Transport for the South East and its Transport Strategy and supporting governance, policy and analytical work, the following vision statement and strategic principles have been developed —a framework of collective aims and aspirations which have been informed by the findings of the Economic Connectivity Review.

Draft Vision Statement

The South East is crucial to the UK economy and is the nation's major international gateway for people and businesses.

We will grow the South East's economy by facilitating the development of a reliable, high quality, sustainable, integrated transport system that makes the region more productive and competitive, improves access to opportunities for all and protects the environment.

Draft Strategic Principles

1. Ensuring the delivery of a high quality, sustainable and integrated transport system that supports increased productivity to grow the South East and UK **economy** and compete in the global marketplace by:
   - Supporting partners to meet the current and future housing needs, employment space, and regeneration;
   - Facilitating improved connectivity between international gateway ports, airports and Eurotunnel Terminals and their markets within the South East and to the wider UK and the rest of the world;
   - Determining how digital technologies could reduce the need to travel, promote shared transport, and improve network efficiency through the creation of a digitally connected transport network;
   - Ensuring improved connectivity and journey time reliability for people and goods between major economic hubs within the South East, to and from London, and beyond to the rest of the UK and internationally; and
   - Ensuring a well-maintained transport network is in place that is resilient to incidents and extreme weather events.

2. Facilitating the development of a high quality, sustainable and integrated transport system that works to improve safety, quality of life and access to **opportunities for all** by:
   - Ensuring the delivery of an accessible, affordable, safe and sustainable transport network across all modes, with seamless planning, payment and interchange for journeys within the South East, to the rest of the UK, and internationally; and
   - Improve accessibility to, from and within deprived communities, particularly coastal communities, to support sustainable economic growth and the rebalancing of these local economies.

3. Facilitate the delivery of a high quality, sustainable and integrated transport system that protects and enhances the South East's unique natural and historic **environment** by:
   - Considering the impact of transport on the South East's National Parks, Areas of Outstanding Natural Beauty (AONB), UNESCO World Heritage Sites and other environmental and heritage designated sites;
   - Supporting the implementation of new technologies and other approaches to help minimise emissions and reduce the South East's contribution to global climate change;
   - Considering the value of open spaces to the economy, well-being and the importance of tourism to the rural economy; and
   - Considering the impact of transport interventions on land uses, landscapes, habitats and biodiversity, and ensuring the most appropriate environmental mitigation measures are implemented.

The Economic Connectivity Review

The aims of the Economic Connectivity Review are to:

- Take a strategic view and identify the economic priorities for transport in the South East;
- Make the case for investment in transport to increase productivity in the South East; and
- Be a platform for further discussions with key stakeholders in the ongoing development of the Transport Strategy.

The Economic Connectivity Review includes a review of the location and nature of current and future economic activity within the South East and connections to major centres outside the region, including:

- Economic hubs and their industrial clusters, connectivity requirements and sensitivities, and labour markets (Section 5 and Section 6);
- International gateways and their contribution to the national economy (Section 7);
- Regional growth centres for employment and housing (Section 8); and
- Differential economic performance within the region and the associated need for regional rebalancing (Section 9).

The review builds on existing evidence and previous studies to provide an overarching view of the region's current economic geography, and assess its economic potential and the role of strategic transport interventions up to 2050. Specific transport schemes are not identified in the review itself, but the case for investment in transport is made along with categorisation and prioritisation of strategic transport infrastructure (Section 10) – a first step in developing the Transport Strategy.

Long term planning on this scale inherently presents uncertainty – uncertainty for businesses and investors, and uncertainty about the future of the determinants of demand for and supply of infrastructure as well as the spatial and temporal distribution of movement. The impact of factors such as an ageing population, vehicle and energy technology, disruptive digital technologies, and the need for climate change resilience and adaptation will all present uncertainty. For this reason, rather than extrapolate current supply and demand in a 'predict and provide' manner, it will be important to carry out scenario testing to assess the robustness of the Transport Strategy to ensure that the approach is 'Vision and Validate'.

2

The Economy of the South East

A powerful motor for national prosperity underpinned by its economic and natural assets

The Transport for the South East area ("the South East"[1]) adds more than £200 billion to the UK economy each year or 14% of the UK total.[2] The South East is home to 7.5 million people (9% of the UK total)[3] and 4 million workers (13% of the UK workforce)[4] employed by 330,000 companies[5], and the average employment rate across the South East is high at 77%, above the UK average of 74%[6]. The South East is also home to national and world leading universities (six in the UK Top 50 and world's top 350[7]) and research centres operating across a broad and dynamic range of disciplines and sectors.

The South East area stretches from north east Kent to South Hampshire and West Berkshire to the East Sussex Coast. It has a long coastline with important coastal assets to the south and the east such as the internationally strategic ports of Southampton and Dover. The South East also is home to the nation's busiest and most important airports at Heathrow and Gatwick, and is traversed by the Channel Tunnel Rail Link / High Speed 1 with its international stations and Eurotunnel terminal.

The major urban centres of Reading, Southampton, Portsmouth, Brighton, Guildford and Ashford are all found in the South East, and these towns and cities are surrounded by two National Parks, four Areas of Outstanding Natural Beauty, and other greenbelt and rural areas providing not only important natural assets, but containing many smaller communities and centres of commerce which provide a high quality of life and are home to many businesses.

Across the South East, its major urban areas, gateways, and natural assets are connected by some of the country's most important motorways, trunk roads, and railway links. They are the arteries that provide connectivity not only within the region, but to London, the rest of the United Kingdom, and to mainland Europe.

Major infrastructure projects planned in the areas bordering the South East such as Lower Thames Crossing, Crossrail 2 and East West Rail (linking Oxford, Milton Keynes and Cambridge) have the potential to bring about significant connectivity improvements, stimulating transformational economic growth. These schemes will not only improve access to and from the economic assets of neighbouring regions, but also to the economic assets of the South East.

1 "The South East" usually refers to Oxfordshire, Buckinghamshire and Milton Keynes as well as our study area. However, these areas are within the England's Economic Heartland shadow Sub-national Transport Body so are excluded from full consideration in this study.

2 Local Economic Forecasting Model (Cambridge Econometrics, 2017)

3 Population Estimates (Office for National Statistics, 2016)

4 Local Economic Forecasting Model (Cambridge Econometrics, 2017)

5 Ibid.

6 Business Register and Employment Survey (Office for National Statistics, 2016)

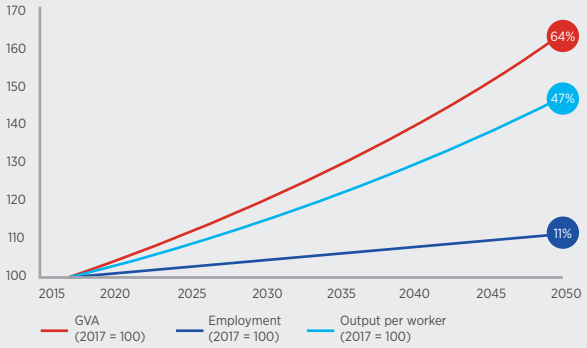
7 Source: https://www.ukuni.net/uk-ranking/overall and https://www.timeshighereducation.com/world-university-rankings/2018/ (accessed 30th April 2018)

Delivering high growth for the nation...

The contribution of the South East to the UK economy is forecast to grow by 64% between 2017 and 2050 to over £330 billion Gross Value Added (GVA) per year. Over the same period, employment will grow by only 11%. This is a 47% increase in output per worker and a clear sign that the South East can play a significant part in addressing the UK's "productivity challenge" (see Figure 2.1).[8]

Even this baseline level of growth will require increased investment in transport infrastructure above today's levels. However, increased investment in transport alone is not enough — significant investment in skills, innovation, digital and mobile infrastructure, housing and employment, amongst other areas, is also required to ensure that the businesses of the South East are fully supported to increase productivity and drive economic growth in the South East.

FIGURE 2.1:
BASELINE FORECAST ECONOMIC GROWTH 2017-2050



8 Local Economic Forecasting Model (Cambridge Econometrics, 2017)

Priority Sectors have been identified as Advanced Engineering and Manufacturing; Creative Industries; Financial and Professional Services; IT and Data Services; Low Carbon Environmental Industries; Marine, Maritime and Defence; Tourism; and Transport and Logistics. These sectors fulfil one or more of the following criteria:

- **High Value, High Volume, High Growth:** These are sectors in which the South East **currently excels.** The proportion of the workforce employed in these sectors is far higher in the South East than in the rest of the UK. This implies that this is an area of economic activity in which the South East is strong and may have a national and international competitive advantage.
- **Additional priority sectors** are other sectors locally identified on the basis that they have **potential for high levels of growth in the future.** Local Enterprise Partnership Strategic Economic Plans, and other sub-regional economic development strategies have been developed to boost business growth and ensure the competitiveness of the UK economy in the future. They identify industries which will be prioritised for investment and provide an indication of the sectors which could be strong in the future.[9]

9 UK Industrial Strategy (Her Majesty's Government, 2017); Local Economic Forecasting Model (Cambridge Econometrics, 2017); Strategic Economic Plans for Coast to Capital LEP (2014); Enterprise M3 LEP (2017); Solent LEP (2014); South East LEP (2014); and Thames Valley Berkshire LEP (2015); Science and Innovation Audit (Innovation South, 2017); Productivity and Growth Strategy Update (Solent LEP, 2017); and Background Paper 1: Economy, Greater Brighton & Coastal West Sussex (Transport for the South East, 2015)

These sectors account for more than 36% of total GVA of the South East and with the wider supply chain of these sectors included, this grows to over half.

Advanced Engineering and Manufacturing

The South East is specialist in high-value, innovation-intensive engineering and manufacturing with a focus on supporting the UK's defence and aerospace sector. This sector adds £15.5 billion per year to the economy of the South East. There are world-class and outstanding universities and research institutes with the University of Southampton and University of Surrey ranked first and second for particular fields of engineering research.

There is a concentration of internationally-significant advanced engineering and manufacturing businesses, with many aerospace and defence companies around Farnborough in Hampshire. There is also a huge array of specialist firms providing leading-edge and research-intensive engineering and manufacturing services. Ricardo, in Shoreham supplies the McLaren Formula One team, which is based in Woking.

Creative Industries

This sector adds just under £7 billion per year to the economy of the South East. The South East has several clusters of creative industry activity, accounting for one quarter of creative clusters identified within the UK.[10] This includes hotspots in East Sussex: Hastings and Eastbourne's TechResort. It is home to four university campuses uniquely focused in this field: The University for the Creative Arts (with two campuses in Kent and two in Surrey).

Many more of the universities of the South East are in the top 30 in the UK for research related to creative industries, with Sussex in the top five as well as the Centre for Insight, Design and Innovation at the University of Winchester, and TIGA award winning gaming courses at the University of Portsmouth.

Financial and Professional Services

The financial and professional services sector is diverse and includes banking, insurance, legal services, accountancy, and management consultancies. It has been a key driver of UK economic performance in recent years and accounts for almost a third (31%) of national GVA. This includes a contribution of £17.5 billion to the economy of the South East each year.

Although the City of London is the centre of the financial and professional services sector, the South East has towns and cities that are home to regional, national and international headquarters. American Express has located their European headquarters in Brighton and Hove where Legal and General also has sizeable operations. Moreover, within the M4 corridor in Thames Valley Berkshire there are over 200 European or global HQ operations

10 The Geography of Creativity in the UK (NESTA and Creative England, 2016)

IT and Data Services

The IT economy is driven by digital sectors focused on the supply of digital infrastructure and applications that generate output and wealth in their own right. As well as the 'core' digital sectors, they are transforming other sectors across the economy to create emerging fields such as EdTech, FinTech, and HealthTech where the UK is already leading the way.

This UK success is in no small part down to the outstanding performance of the sector in the South East with annual GVA of just under £15 billion per year driven by a very strong concentration of large corporates including significant international players such as Fujitsu, Oracle, Microsoft, and Telefonica. Supported by several high-profile clusters of digital companies, the South East is capitalising upon the opportunities to apply digital technologies across a raft of sectors and services.

There is good evidence that the South East has substantial and significant research strengths across all IT disciplines. These are linked, most directly, to the University of Southampton, University of Surrey, University of Sussex and Royal Holloway. However, the skills of the IT and Data Services sector are dispersed across a range of academic disciplines and many of the universities across the area are contributing to the research excellence of the South East. These institutions are Canterbury Christ Church and Southampton Solent Universities and the Universities of Brighton, Chichester, Kent, Portsmouth, Reading and Winchester.

Low Carbon Environmental

Low carbon environmental is a key growth sector in the South East and currently adds over £7.5 billion to the economy each year. The former Department for Business Innovation and Skills estimated that the global market for low carbon and environmental goods and services was worth £3.4 trillion in 2011/12[11]. Investment in green energy generation is such that it is now highly likely that some renewable energy sources will achieve cost parity with traditional non-renewable energy sources over the next decade, generating new employment and business opportunities globally.

The levels of growth forecast, combined with the size of the market and the UK's export performance, suggest that there are excellent opportunities for expansion, building on a stable exporting base. The coastal location and natural assets make the South East particularly well-placed to grow the low carbon sector, supporting the environment and the economy.

Demonstrating the link between Low Carbon and Advanced Engineering, for twenty years the University of Brighton and Ricardo have been leading the way in internal combustion research. The partnership, which capitalises on the university's expertise in laser diagnostic techniques and modelling to inform the design and development of novel low carbon internal combustion systems having direct environmental impact through improved fuel efficiency and CO2 reduction.

Marine, Maritime and Defence

The South East is home to the Royal Navy at Portsmouth, the UK's number one vehicle-handling port and cruise terminal at Southampton, and has a long heritage in the marine leisure and tourism sectors. There is exceptional research and industrial capacity in the business of marine, maritime and defence in South East; and, along its extensive coastline, clusters of specialist industrial and academic activity have grown up around the numerous significant ports and natural harbours – from Dover and Ramsgate in the east, through Newhaven, Brighton and Hove, Shoreham, to Portsmouth and Southampton in the west.

The South East is one of the strongest contributors to the UK's marine, maritime and defence industry. According to the Government's 2015 Maritime Growth Study, "The Solent's…business base, skills, traditions, research and educational strengths, place it at the forefront of the national marine, maritime and defence economy."[12]

Together with the region's outstanding industrial and research assets, including Lloyd's Register, BAE Systems, QinetiQ, the National Oceanography Centre and the Marine Robotics Innovation Centre, the substantial growth opportunities in the sector play extremely well to the strengths of the South East.

11 Low carbon and environmental goods and services report (Department for Business, Innovation & Skills, 2013)

12 Maritime Growth Study (Department for Transport, 2015)

Tourism

Tourism is vital to the rural and coastal economies of the South East contributing over £7.5 billion in GVA per year. On the Isle of Wight, it supports more than 20% of employment and generates £500 million of direct and indirect expenditure. With its natural assets and the heritage offer – two national parks, five areas of outstanding natural beauty and hundreds of miles of coastline – the South East attracts many new visitors every year.

The visitor economy of the South East is supported by high quality research and teaching across the academic disciplines which encompass tourism, accommodation and hospitality. Leading institutions from the South include the Universities of Winchester and Portsmouth.

Transport and Logistics

The South East is home to the UK's most important international and national transport assets – the busiest airports serving the most destinations, South Coast ports on the main international shipping line and cross channel services from Dover and through Eurotunnel providing capacity equivalent to a second Gatwick. As a result, the South East has become a powerhouse in the transport and logistics sector with a GVA of over £8 billion per year.

The South East is at the leading edge of research into the future of the transport and logistics sector with institutions such as the Transport Research Laboratory in Wokingham exploring how operations in this sector can be streamlined to provide better outcomes for clients and suppliers. This is backed up by high quality research facilities at the University of Portsmouth, Canterbury Christ Church University and Southampton Solent University.

Figure 2.2 shows the spatial distribution of these research institutions, universities, Enterprise Zones and major companies and their relationship to the location of the eight Priority Sectors.[13]

Enabling sectors

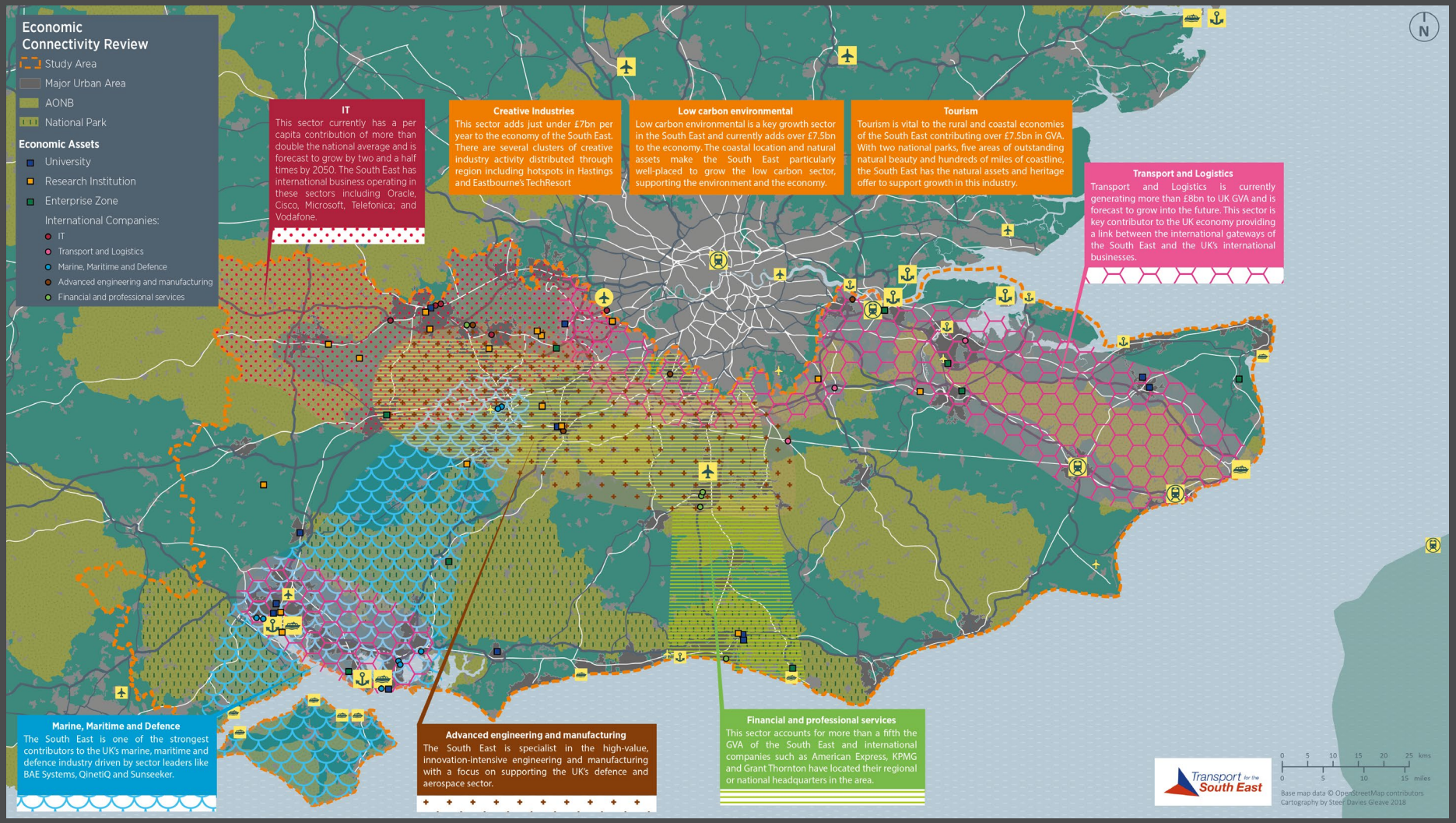
The economy of the South East is further driven by five large sectors which account for nearly 29% of the total output.[14] These sectors are construction, education, health, business support (e.g. office administration services), and retail. These sectors do not necessarily generate high value per worker, but they underpin the economy of the South East providing skills, healthcare and other important services which allow the Priority Sectors to flourish. The change in the number of jobs in these sectors in the future is much more closely tied to demographic shifts and shaped by automation and digital technology potentially reducing the need for labour.

Other local specialisms and sectors can be found which make a key contribution to their local economies. The strategic Priority Sectors and Enabling Sectors, together with the remaining local sectors complete the sectoral 'picture', against which local priorities are identified.

13 Economic Impact of the Solent Area Universities (Biggar Economics, 2018)

14 Local Economic Forecasting Model (Cambridge Econometrics, 2017)

FIGURE 2.2: KEY SECTORS AND THEIR ECONOMIC ASSETS



...with the potential for higher productivity and resilience

Under an aspirational, but realistic growth scenario – based on sectoral growth with a historical precedent sustained over the past 30 years – the GVA of the South East could grow to up to £500 billion by 2050. This GVA uplift is the result of employment productivity growth, but also significantly higher employment growth than in a business as usual scenario.

This scenario provides one alternative future which is likely to require significant demographic shifts including population displacement from other areas of the UK as well as significant immigration from outside the UK. Though there is currently limited potential for this level of employment growth, testing this scenario gives an indication of the potential impact that the prioritisation of these sectors could have on the economy of the South East.

Addressing important technological, economic and regulatory issues could unlock the commercial potential of enabling technologies and put the South East in a position to increase productivity significantly in the eight Priority Sectors described earlier in this chapter.

Scenario planning is used to test the resilience of the assumptions implicit in long term strategy planning. High levels of uncertainty as to the future demand for and supply of transport mean that as the development of the Transport Strategy continues, additional scenarios will be tested. e.g. considering the impacts on the labour market of a future with increased automation and improved digital infrastructure.

Figure 2.3 and Figure 2.4 show the difference in population and employment growth between the business as usual scenario and the scenario in which the strategic sectors are prioritised.

FIGURE 2.3: FORECAST EMPLOYMENT GROWTH (JOBS)

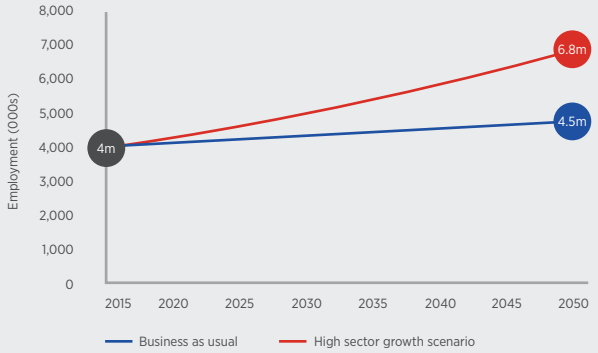
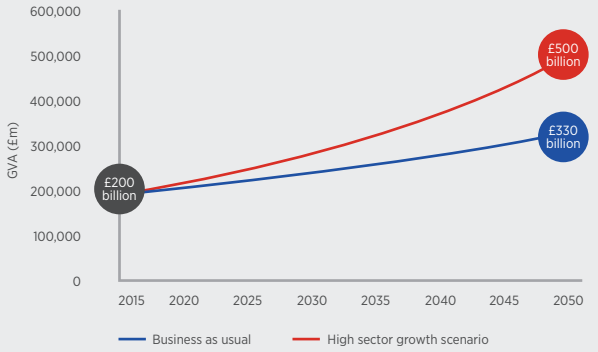


FIGURE 2.4: FORECAST GVA GROWTH



International Gateways

Providing swift and efficient access between the UK and the rest of the world, the international gateways of the South East are relied upon by businesses to ensure the smooth flow of goods and services. Heathrow and Gatwick serving more international destinations than any other UK airport, a deep-sea port on the main international shipping line, and a high speed railway link to the continent ensure that businesses continue to locate in the South East to be positioned for ease of trade with both other parts of the UK and mainland Europe.

The strength of the international gateways is sought after across the UK. With a half of all freight passing through Dover coming from or going to a location outside the South East and cars from the industry heartlands of the West Midlands and North East being exported to the United States and the East Asia through Southampton, the International Gateways of the South East truly are the international gateways of the UK.

Businesses, initially drawn by strong connectivity to international markets have clustered around international gateways and are now benefitting from proximity to other businesses in their sector. With marine, maritime and defence industry concentrated around the Ports of Portsmouth Southampton and the Gatwick Diamond being a focus for the professional services sector, international gateways are economic hubs in their own right.

Brexit Resilience

Withdrawal from the European Union presents significant uncertainty. With its strong economy and substantial economic assets – major international gateways and ambitious, outward facing enterprise - the South East can lead the way supporting the UK's response to this uncertainty.

The most productive area in the UK outside London, specialist in knowledge intensive, high value industries and location of choice for businesses, the South East is the powerful motor driving UK competitiveness and ensuring the UK can embrace and benefit from the opportunities that change could bring.

From the operations of the Port of Dover providing cross channel capacity for 10,000 vehicles per day to London Heathrow Airport connecting the UK to 194 destinations in 84 countries, the international gateways of the South East are trusted to reliably ease the movement of goods and services around the world and ensure that the UK remains an attractive place to locate and do business.

Without the right investment and business-supportive policy decisions, the economy of the South East, and therefore, the UK, will suffer along with the ability of its international gateways to facilitate international trade.

Housing and employment growth

A ratio of median house price to median earnings of nearly 9.5 compared to the national average of 7.5 puts into sharp focus the affordability constraints facing the South East. However, the South East is proactively responding to its low levels of housing affordability to prevent it from becoming a constraint on the future growth of the economy.

Affordability constraints are unevenly distributed across the South East with parts of Surrey two times less affordable than the national average while certain coastal and estuarine areas are much more affordable than the national average. The South East has ambitious plans for residential and commercial development focussed in high demand locations to increase affordability and ensure easy access to employment.

Development can be sustainable in the South East. Prioritising densification of urban areas allows a growing population to be accommodated with no adverse impact on the protected natural assets which are so important to ensuring that the good quality of life enjoyed by the residents of the South East continues. Building in close proximity to public transport provision allows residents to access employment, leisure and retail facilities in a sustainable way.

To maintain this strong output, investment is required

Employment and population in the South East have quickly grown with businesses and individuals drawn to locate in an area with a prosperous economy, and significant economic assets. This has driven growth of 25% in the economy of the South East since 1997.

The resultant increase in demand means the infrastructure of the area is under increasing pressure. Reduced access to or effectiveness of transport, skills and digital infrastructure and services will erode the potential for further economic growth.

The long-term planning horizon presents uncertainty about the future demand for and supply of infrastructure as well as the spatial and temporal distribution of movement. The impact of factors such as "Brexit", new vehicle and energy technologies, disruptive digital technologies, changing working patterns and preferences and extreme climactic events will play a part in determining the types of transport investment which will most benefit the economy.

These are issues which require a policy, regulatory and investment approach which is formulated using joined up, strategic thinking across the South East to ensure that solutions are not restricted by administrative or political boundaries.

3

Transport is an enabler of economic growth

Economic outcomes of transport

Transport congestion erodes the potential for economic growth in an area by increasing journey times and reducing the efficiency of the transport network. Transport investment can secure or improve connectivity between different locations: allowing products to be delivered to market; linking people to jobs; underpinning supply chains and logistics; and supporting domestic and international trade. It is a vital component in supporting a growing economy.

Economic Outcomes of Transport

Understanding the links between the availability of good transport infrastructure and services, and the performance of the wider economy has been the subject of numerous studies over several decades.[15] This work tells us that transport connectivity supports economic growth through:

- **Improved business connectivity,** notably by travel time savings, improving journey time reliability;
- **Improved labour market efficiency**, enabling firms to access a larger labour supply, and wider employment opportunities for workers and those seeking work. Key to this is the higher capacity and connectivity that transport investment can deliver;
- **Enabling development** through unlocking sites and locations that were previously poorly connected;
- **Providing access to international gateways** to increase domestic and international trade by reducing trading costs.
- **Supporting deprived communities** by delivering an improvement in accessibility of jobs and skills, increasing the residents of these communities' participation in the labour market.

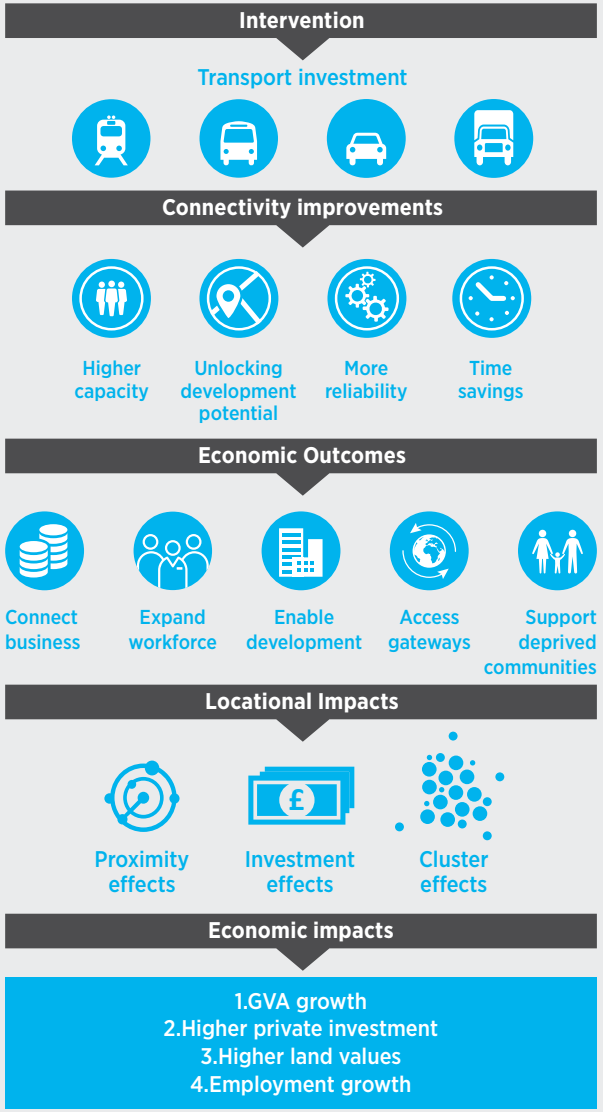
The next five chapters explain how transport can support each of these economic outcomes and in turn drive economic growth in the South East.

Transport network investment affects the location and pattern of economic activity, and by extension, supports growth at a local, regional and national level. The economic outcomes of transport investment lead to locational impacts which represent productivity impacts.

Transport can increase productivity of an area in three ways:

- By reducing transport costs and thereby improving accessibility around and between jobs. This, in effect, brings firms closer together. This is described as a 'proximity effect'.
- Where transport investment changes the scale or location of employment in an area or between areas. This is termed a 'cluster effect' whereby the change in the number of jobs in an area directly affects the 'effective density'.
- By facilitating new jobs through more direct links (e.g. linkages to new business parks, rather than time savings between established locations), where encouraging new business activity (inward investment) to the area will increase the density of activity, and as a result productivity benefits will accrue.

FIGURE 3.1: TRANSPORT AND THE ECONOMY



15 Northern Powerhouse Independent Economic Review (SQW, 2016); Midlands Connect Conditional Outputs Report (Steer Davies Gleave, 2014)

4

Increasing business connectivity

Overview

A comprehensive, safe, efficient and reliable transport network is key to connecting businesses and ensuring that trade can be carried out in an effective way, whether to businesses or customers.

Businesses being connected to one another enables them to access higher quality and/or lower cost resources such as staff. It also increases effective proximity to competitors which provides opportunities to learn from each other and applies pressure to increase efficiency. Improved connectivity of businesses has the effect of allowing a wider pool of customers and suppliers to be accessed.

Within the economy of the South East businesses working in different industrial sectors have transport requirements. Below, the role of transport in supporting the operations of the priority sectors is described.

The Role of Transport

Different industrial sectors have different transport network needs and this is reflected in their choice of business location, whether it be near to a railway station or near to a junction on the strategic road network. This is reflected in the identification of key business connectivity corridors. In the South East, common to both strategic road and rail networks, however, is their paucity of direct connections which are often poor, requiring travel via London or the M25 for fastest journey times, or along congested lower capacity roads or lower frequency rail routes.

Industries such as, **Advanced Engineering and Manufacturing, Transport and Logistics and Marine, Maritime and Defence** rely largely on the highway network for day-to-day operations of transporting goods, but also the rail network for roll-on / roll-off freight servicing the automotive sector and for some aggregates. Access to London as a major market is important along all arterials, as well as to the major economic hubs along those corridors. In addition, the region's international gateways are essential for trading in these sectors, and as such strategic routes connecting them are an integral part of the economy. Strategic connectivity is not only provided along the arterial routes to and from London, but via the M25 and other non-arterial routes such as the A34/CrossCountry and M27-A27/West Coastway Line corridors.

For business travel, **IT and Data Services and Financial and Professional Services** sectors require the transport network to connect and move employees to meet clients and for travel between offices, principally. Connectivity to London and major economic hubs close to London is important, for example, along the M4/Great Western Mainline and M3/South Western Mainline. Whilst rail is a minor mode, it plays an important role, particularly for access to and from London and to the region's airports.

For Priority Sectors that are more widely distributed across the South East, such as **Creative Industry, Tourism and Low Carbon Environmental**, both the strategic road and rail network, and the region's international gateways play different yet important roles, and are often required to be integrated for transfer between modes or for onward connections.

For all sectors, good connectivity is necessary, not just within the South East, but to other regions of the UK and to international gateways to connect beyond the UK. Corridors such as the A34/CrossCountry, M4/Great Western Mainline, M25, A303/West of England Mainline, M27-A27/West Coastway Line provide such connectivity, and the connectivity, capacity and access they provide are vital for not only the economy of the South East but the UK economy as a whole.

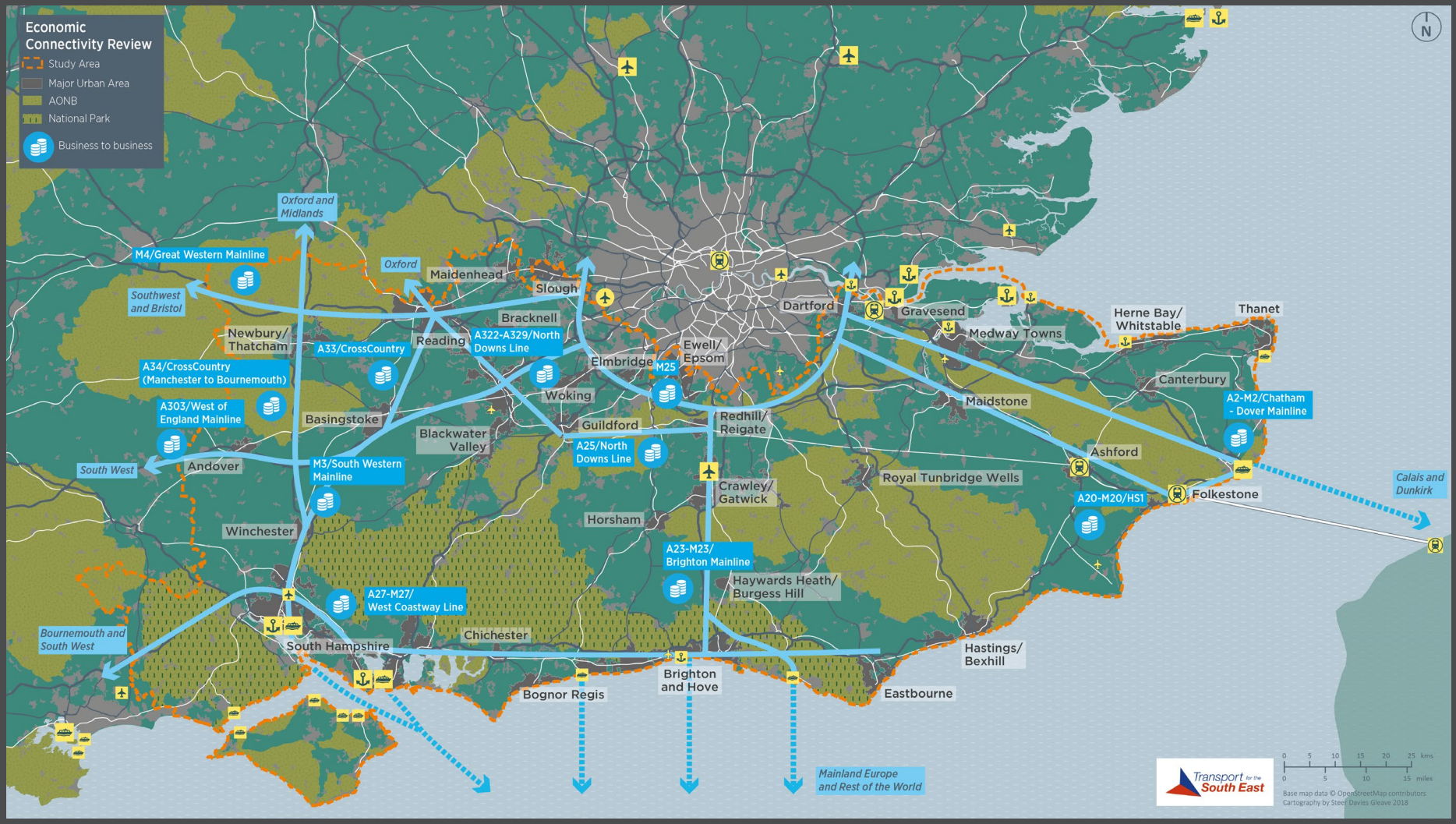
Location of trading partners

Analysis of the value of trade between priority sectors and the other sectors of the economy has shown that, typically, the most valuable trading relationship within supply chains is intra-sector. As a result, significant amounts of trade will occur between businesses in the same sector operating in the same area, but also from different geographic areas with specialisms in the same sector.

Many of the priority sectors also have highly valuable levels of intermediate transactions with businesses outside their own sector. For example, businesses in the **Transport** and **Logistics** sector, conduct 7.8% of their trade by value with businesses in **IT and Data Services** sector. The importance of these transactions to their business operations and the role that good connectivity plays in the efficiency of this trade means that the transport network is a key factor when businesses decide where to locate.

The key corridors have been identified taking into consideration the importance of transport to increasing business connectivity. These are corridors which link the locations of businesses in eight Priority Sectors with each other and with their wider supply chain. These have been mapped in Figure 4.1.

FIGURE 4.1: CORRIDORS SUPPORTING BUSINESS CONNECTIVITY



Corridor Assessment

Analysis has been carried out on highway flows data from the South East Regional Transport Model to identify the annual impact of delay to business and freight users on the strategic corridors of the South Eastin the base and in the 2041 'do minimum'. Through showing the current impact, but also forecasting the future impact of delay, this analysis shows the potential impact of transport intervention targeted at congestion relief on business and freight users. Business and freight user benefits generate a direct uplift to the economy of the South East.

Analysis has also been carried out to identify the annual business and freight user benefits resulting from a one minute journey time improvement on the rail corridors of the South East.

Results from this analysis are provided in Table 4.1. The highway results are reported per kilometre to reflect the fact there is substantial variation in the length of the strategic corridors of the South East. The methodology and further detail on this analysis is provided in the Annex 1: Transport Analysis note.

This analysis shows that the impact of congestion is driven principally by corridor demand and network capacity. The top seven corridors, by impact of highway congestion, are all either key radial routes connecting the most populous economic hubs in the South East with London (M3, M4) or corridors with highly constrained capacity (A33, M25, A27-M27, A229, A322-A329).

The rail corridors on which the annual impact of one minute of rail delay to business and freight users is most significant are also the main radial routes to London which serve the economic hubs in the South East. These include Brighton Mainline and Great Western Mainline. Rail delay impacts are typically significantly less that highway impacts due to lower mode share.

The highway and rail analysis indicate that business to business connectivity is most constrained, and hence there is greatest potential for GVA uplift from transport intervention, on the key radial routes and constrained links connecting the largest economic hubs.

The highway and rail analysis has shown the corridors on which improvements would bring about the most significant business user benefits and hence direct GVA impacts. However, this is only one factor considered in the sequencing of corridors.

TABLE 4.1: Business and freight impact of delay by corridor

CORRIDOR	BUSINESS AND FREIGHT IMPACT OF DELAY PER KM (BASE)	BUSINESS AND FREIGHT IMPACT OF DELAY PER KM (2041)	BUSINESS AND FREIGHT ANNUAL IMPACT OF ONE MINUTE OF RAIL DELAY	ASSESSMENT
A33/CrossCountry	£836,000	£1,547,000	£5,000	✓✓✓
M4/Great Western Mainline	£624,000	£1,017,000	£460,000	✓✓✓
M25	£612,000	£3,220,000	£1,000	✓✓✓
A27-M27/West Coastway Line	£534,000	£1,208,000	£35,000	✓✓✓
A229/Medway Valley Line	£478,000	£1,249,000	£1,000	✓✓✓
A322-A329/North Downs Line	£315,000	£1,019,000	£17,000	✓✓✓
M3/South Western Mainline	£290,000	£638,000	£410,000	✓✓
A2/Chatham-Ramsgate Mainline	£252,000	£724,000	£50,000	✓✓
A25/North Downs Line	£250,000	£500,000	£2,000	✓✓
A22/Oxted Line	£212,000	£536,000	£142,000	✓✓
A34/CrossCountry Manchester-Bournemouth	£200,000	£417,000	£9,000	✓✓
A3/Portsmouth Direct Line	£193,000	£601,000	£621,000	✓✓
A23-M23/Brighton Mainline	£153,000	£446,000	£1,202,000	✓✓
A2-M2/Chatham Mainline	£108,000	£372,000	£390,000	✓✓
A20-M20/HS1	£101,000	£431,000	£264,000	✓✓
A303/West of England Mainline	£51,000	£419,000	£1,000	✓✓
A21/Hastings Line	£83,000	£279,000	£135,000	✓
A264/Arun Valley Line	£81,000	£268,000	£4,000	✓
Redhill-Tonbridge Line	£80,000	£229,000	£1,000	✓
A259/East Coastway Line	£53,000	£182,000	£9,000	✓
Herne Bay/Whitstable-Canterbury	£47,000	£132,000	£1,000	✓
A299/Chatham-Ramsgate Mainline	£45,000	£173,000	£2,000	✓

5

Improving labour market efficiency

Overview

The transport network plays a key role to play in the efficiency of the labour market. Improved transport connectivity to an area of employment increases the size of the labour market catchment area and consequently provides employers with a higher number of potential employees with a broader range of skills.

Similarly, improved connectivity of residential areas will expand the catchment from which workers can seek employment. Improving the ability of workers to get to their places of employment and increasing the labour market catchments through reduction in journey times, drives increased employment and productivity contributing to higher levels of economic growth.

Travel to work catchments

Labour market catchments are driven by the location of jobs, the location of housing and the efficiency of the transport network. Figure 5.1 shows that the labour market commuting catchments of the South East overlap significantly but the corridors which are key to the efficiency of the commuter trips are clear.

Thames Valley

Within the Thames Valley area, including Berkshire, Surrey and north Hampshire the labour market catchment map shows the polycentric nature of the area. Farnborough, Reading and Bracknell all have strong labour markets with overlapping boundaries. The area has key arterials, but also orbital and north south connectivity which are important for improving labour market efficiency.

Gatwick Diamond

For the Gatwick Diamond, a large number of trips are concentrated around Gatwick Airport and the neighbouring towns. This indicates the importance of the A23-M23/Brighton Mainline, and A264/Arun Valley Line.

Kent and Medway

Kent and Medway is a large area which drives the polycentric labour catchments. The key centres are typically located on the A2-M2/Chatham Mainline or the A20-M20/HS1 highlighting the importance of the strategic corridors in providing local connectivity.

Solent

In the Solent and Winchester there is a lot of movement locally within the urban areas themselves. There are also high numbers of commuter flow along the M27/West Coastway Line and the southern stretches of the M3/South Western Mainline corridor.

Sussex Coast

The Sussex Coast labour market catchments indicate the four key economic hubs of Chichester, Brighton and Hove, Eastbourne and Hastings/Bexhill. This highlights the importance of the A27/West Coastway Line and the A259/East Coastway Line.

Travel to work flows

Across the UK the highest travel to work flows occur within local areas. 6.5 times more daily travel to work trips take place within the South East area than travel to work flows from the South East area to London.[16] The high incidence of intra-urban travel to work trips highlights the importance of the local road network and of first mile last mile connectivity in support of labour market efficiency.

The South East is home to many large urban areas which provide a focus for business activity, attracting workers from the surrounding towns drawn by a wider range of job opportunities as shown by Figure 5.2.

For example, within the Brighton and Hove built up area -stretching from Worthing in the West to Kemptown in the East - there are 137,000 daily travel to work trips principally to the City Centre.[17] Some of these movements are on local roads, but strategic connectivity through the built up urban area including road and rail is key to the efficiency of these trips.

London is a global hub of enterprise to which millions of people commute every day and which has a strong influence on the labour market of the South East. In addition to very high flows to and from areas immediately adjacent to outer London Boroughs, 7.5% of all commuter trips from the South East are to inner London. This rises to 25% in some areas - the strategic, arterial road and rail infrastructure of the South East is a key contributor to ensuring an efficient labour market for shorter trips across boundaries as well as longer distance commuting. Figure 5.3 clearly demonstrates this contribution with areas with the highest flows to inner London including areas immediately adjacent to London, but also areas benefitting from relatively fast journey times into London, such as Haselmere, Brighton & Hove, Hayward Heath/Burgess Hill and Tunbridge Wells.

Taking into consideration the intraurban and interurban flows and flows to London as well as the labour market catchments for the South East and London, the key commuter corridors in the Transport for the South East area are shown in Figure 5.3.

16 Census travel to work data (Office for National Statistics, 2011)

17 Ibid

FIGURE 5.1: COMMUTER CATCHMENTS

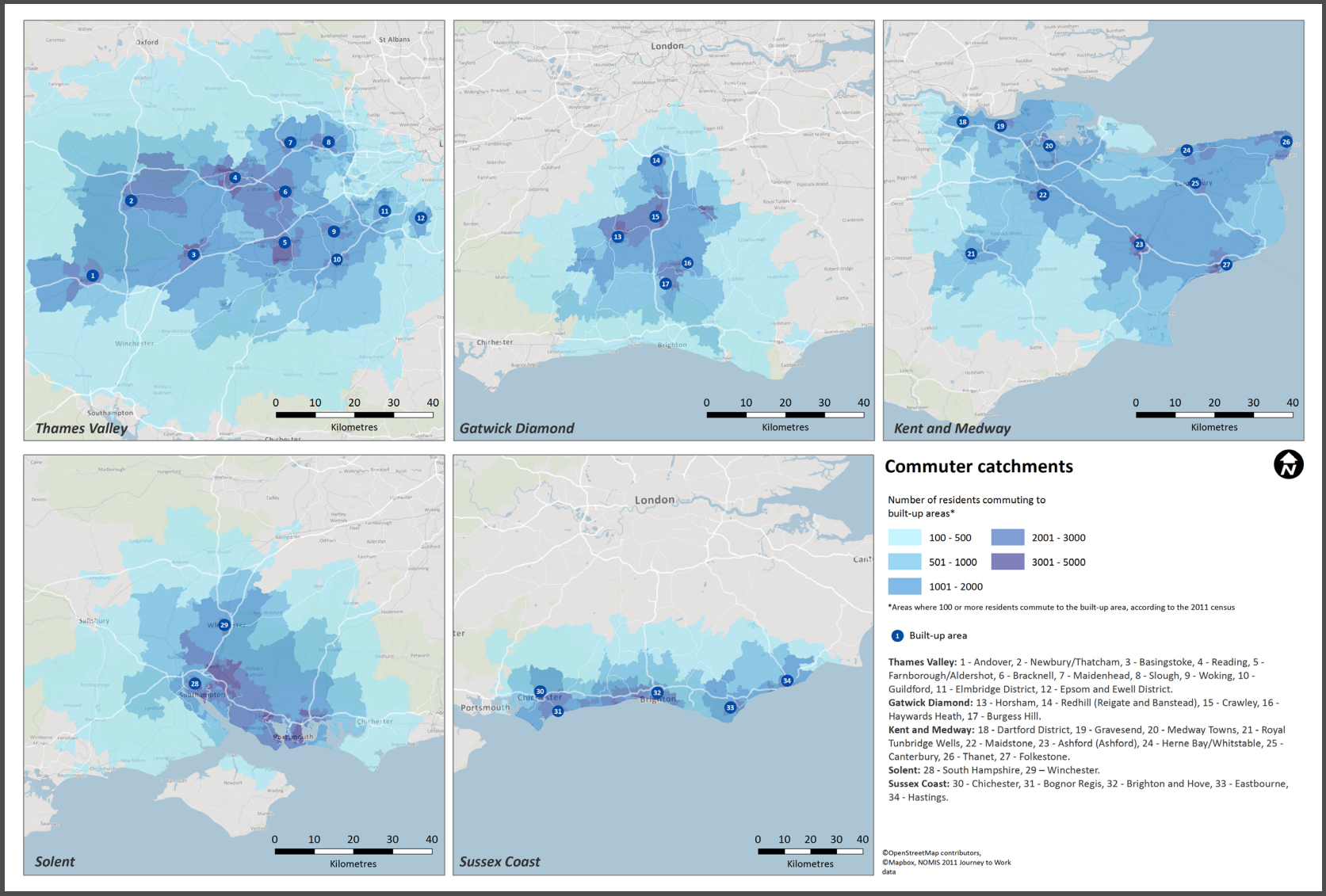


FIGURE 5.2: ECONOMIC HUBS IN THE TRANSPORT FOR THE SOUTH EAST AREA WITH THE HIGHEST DAILY INTRA-URBAN FLOWS

FIGURE 5.3: COMMUTER CATCHMENT OF GREATER LONDON

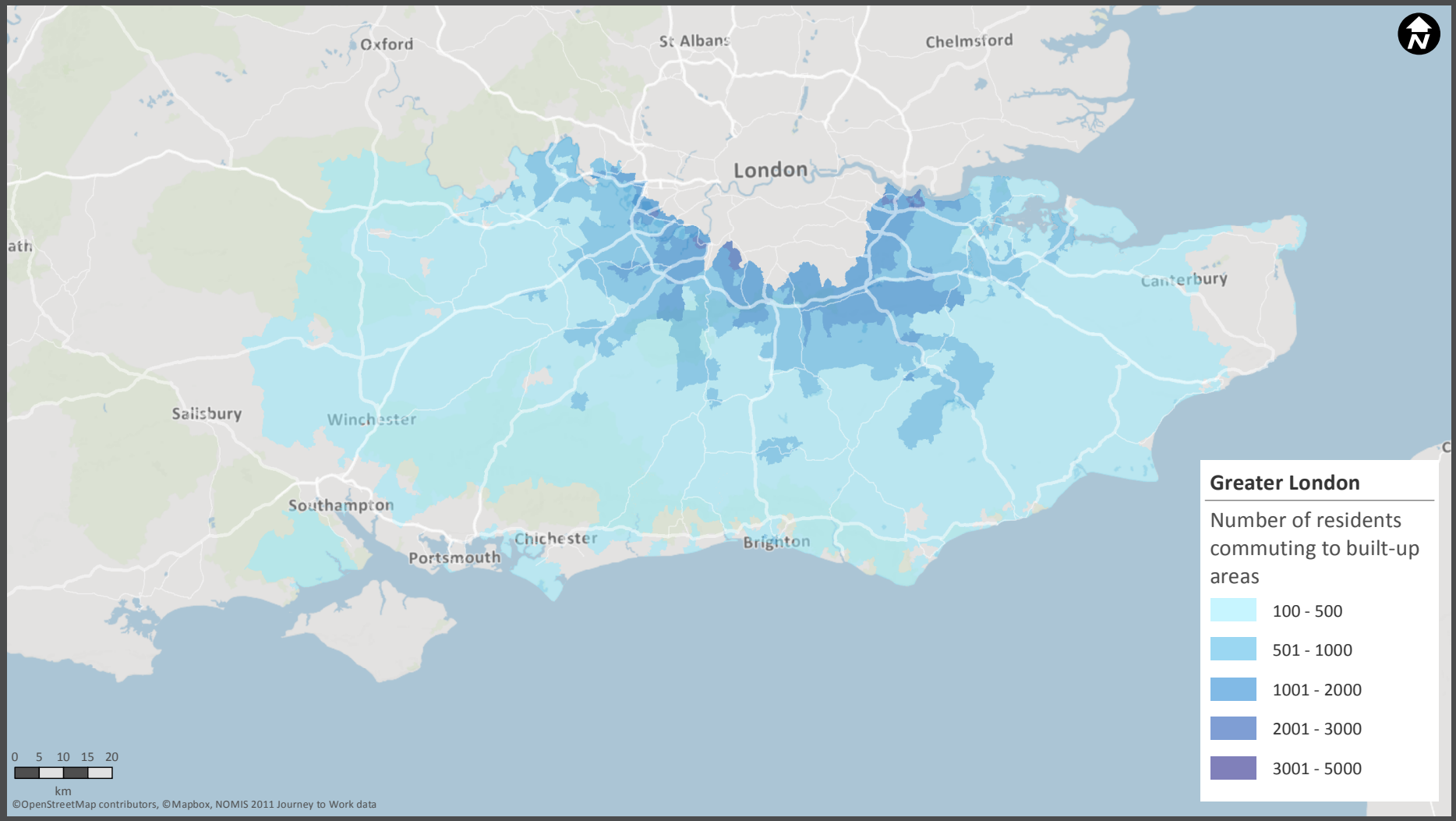


FIGURE 5.4: CORRIDORS SUPPORTING LABOUR MARKET EFFICIENCY

Corridor Assessment

Highway analysis using the South East Regional Transport Model has enabled identification of the annual impact of delay to commuters on the strategic corridors of the South East in the base and in the 2041 'do minimum'. Through showing the current impacct, but also forecasting the future impact of delay, this analysis shows the potential impact of transport intervention targeted at congestion relief on commuters.

Results from this analysis are provided in Table 5.1. The results are reported per kilometre to reflect the fact that there is substantial variation in the length of the strategic corridors of the South East. The methodology and further detail on this analysis is provided in the Annex 1: Transport Analysis note.

The top six corridors, by impact of highway congestion, serve urban areas, connecting towns and cities of significant populations with centres of employment. The A33/Crosscountry, for example, connects Basingstoke and Reading, while the A229/Medway Valley Line connects the Medway Towns economic hub with Maidstone. This analysis indicates that transport investment should be targeted at areas of high population to bring about the greatest level of economic benefits.

TABLE 5.1: Commuter impact of delay by corridor

CORRIDOR	COMMUTER IMPACT OF DELAY PER KM (BASE)	COMMUTER IMPACT OF DELAY PER KM (2041)	ASSESSMENT
A33/CrossCountry	£414,000	£739,000	✓✓✓
A322-A329/North Downs Line	£238,000	£557,000	✓✓✓
A229/Medway Valley Line	£232,000	£617,000	✓✓✓
A27-M27/West Coastway Line	£136,000	£208,000	✓✓✓
M4/Great Western Mainline	£125,000	£157,000	✓✓✓
M25	£114,000	£433,000	✓✓✓
A3/Portsmouth Direct Line	£85,000	£215,000	✓✓✓
A25/North Downs Line	£98,000	£194,000	✓✓
A22/Oxted Line	£95,000	£190,000	✓✓
A2/Chatham-Ramsgate Mainline	£90,000	£183,000	✓✓
M3/South Western Mainline	£86,000	£149,000	✓✓
A23-M23/Brighton Mainline	£52,000	£130,000	✓✓
A259/East Coastway Line	£48,000	£123,000	✓✓
A34/CrossCountry Manchester-Bournemouth	£47,000	£75,000	✓✓
A264/Arun Valley Line	£39,000	£112,000	✓✓
Redhill-Tonbridge Line	£37,000	£90,000	✓
Herne Bay/Whitstable-Canterbury	£35,000	£83,000	✓
A2-M2/Chatham Mainline	£34,000	£85,000	✓
A21/Hastings Line	£30,000	£80,000	✓
A20-M20/HS1	£24,000	£73,000	✓
A303/West of England Mainline	£21,000	£111,000	✓
A299/Chatham-Ramsgate Mainline	£21,000	£69,000	✓

6

Access to international gateways

Overview

A high quality and efficient transport network connecting a wide range of strategic locations to the international gateways is a key contributor to the South East's attractiveness to businesses and individuals. For many businesses it will determine whether they locate in and choose to trade with the UK.

The South East provides efficient and reliable access to a wide range of international destinations. Irish beef, Welsh lamb and cars from the West Midlands exported around the world via its international gateways. Therefore, there is a need for strategic connectivity between the gateways and the wider UK to support the UK's international competitiveness.

This must consider transport investment opportunities in the South East, but also major infrastructure projects already in the planning stage which could enhance connectivity between international gateways and key customers in the Midlands and the North. The Lower Thames Crossing, Crossrail 2 and East West Rail (linking Oxford, Milton Keynes and Cambridge), amongst others, will have an impact both on the transport network and economy of the South East. Through partnership with neighbouring transport bodies, Transport for the South East will be involved in the development of these schemes. Figure 6.1 shows the gateways in the South East and the major ports, airports and channel tunnel terminals are described below in the following pages.

Ports

Ports in the South East provide an international gateway for freight and for passengers. The Department for Transport identifies the six major freight ports in the Transport for the South East area as Dover, London, Medway, Shoreham, Portsmouth and Southampton[18]. Consistent data is provided by the Department for Transport for these six ports. As is shown by Table 6.1, Port of Dover, Port of Southampton and Port of London have the greatest levels of freight traffic of the ports of the South East, both in terms of tonnage and total annual unitised traffic. Port of Dover's traffic is primarily to or from the European Union while the majority of Southampton's traffic is to or from non-EU countries.

18 UK Port Freight Statistics, Department for Transport, 2016. Major Ports include ports handling over one million tonnes per year, and a small number of other key ports, together accounting for over 98% of UK port traffic.

TABLE 6.1: Department for Transport major freight port statistics[19]

PORT	ANNUAL FREIGHT TRAFFIC ('000 TONNES)	ANNUAL DOMESTIC FREIGHT TRAFFIC ('000 TONNES)	ANNUAL EU FREIGHT TRAFFIC ('000 TONNES)	ANNUAL NON EU FREIGHT TRAFFIC ('000 TONNES)	ANNUAL UNITISED TRAFFIC ('000 UNITS) [21]
Dover	27,000	8	27,000	212	5,000
London [20]	50,000	10,000	25,000	15,000	2,000
Medway	9,000	2,000	4,000	4,000	379
Portsmouth	4,000	1,000	2,000	1,000	1,000
Shoreham	2,000	1,000	1,000	3	-
Southampton	36,000	6,000	8,000	21,000	2,000

19 UK Port Freight Statistics, Department for Transport, 2016. Major Ports include ports handling over one million tonnes per year, and a small number of other key ports, together accounting for over 98% of UK port traffic.

20 Port of London includes port operations in the north bank of the Thames which are out of the Transport for the South East area.

21 Unitised traffic includes all roll-on/roll-off units whether carrying freight or not (road goods vehicles, unaccompanied trailers, shipborne port to port trailers, passenger vehicles, trade vehicles and other ro-ro units) and lift-on/lift-off containers

Southampton

Southampton is the UK's primary port for exports to non-EU countries[22], handling £71 billion of international trade[23]; and is the only port on the south coast that can accommodate deep-sea container vessels. It is also the UK's biggest cruise port and the UK's number one vehicle handling port with around 840,000 vehicles passing over the quayside every year. Key automotive client included BMW Mini based in Oxford, Honda in Swindon, Jaguar Land Rover in Solihull and Nissan in Sunderland.

Portsmouth

Portsmouth is the largest municipal port in the UK and serves two million passengers, 700,000 vehicles, and transports 250,000 freight units every year. It is the UK's main ferry port for the western channel and the second busiest cross channel ferry port after Dover. France, Spain and the Channel Islands are the principal destinations.

Shoreham

The Port of Shoreham handles two million tonnes of goods per annum with and an average of 300 trucks per day. The majority (90%) of goods through the port are imports and these imports are principally aggregates dredged from the sea bed to the east of the Isle of Wight. More than a quarter of the goods that arrive at Shoreham have an ultimate destination in East Sussex or Brighton and Hove.[24]

Dover

Dover is the busiest international roll-on roll-off (Ro-Ro) port in Europe, handling £119bn of goods – equivalent to 17% of the UK's total trade in goods.[25] Dover handles 2.6 million freight vehicles a year with half of the vehicles going beyond the South East, typically to the Midlands and the North. The smooth operations of the port are reliant upon efficient connectivity from the strategic road network.

Medway Ports

Medway Ports manages both Chatham Docks and the Port of Sheerness. The principal goods handled by the port is car imports which come from continental Europe to the Port of Sheerness and are then transported to dealerships throughout London and the South East. Steel, timber and concrete imports for the construction industry also come through the Medway Ports.

Port of London

The Port of London manages the many ports which operate on the River Thames from its mouth at the North Sea up to the wharves in west and central London, on the north and the south banks. Of the south bank ports in the South East the majority of freight is aggregates for distribution to the construction industry in London and the South East. The Port of London is the second largest in the UK terms of freight tonnage after Felixstowe, handling 55 million tonnes of freight annually.

22 Southampton Port Master Plan – draft for consultation (ABP Southampton, 2016)

23 Ibid.

24 Annual Report (Shoreham Port, 2016)

25 Annual Reports and Accounts (Port of Dover, 2015)

Airports

The South East has two major international airports, London Gatwick and Southampton. In addition to this, London Heathrow is located on the border between Greater London and the South East. Heathrow, Gatwick and Southampton airports are used by 126 million passengers per year which is 45% of the total number of passengers using all UK airports. Heathrow, Gatwick and Southampton airports are used annually to transport 69% of the total amount of freight at UK airports. Freight using Heathrow Airport alone accounts for 31% of the UK's non-EU trade by value.[26]

Table 6.2 shows the scale of the three major airports in the South East. Significantly more freight tonnage passes through Heathrow Airport than Gatwick or Southampton. This is the case for EU, non-EU and domestic markets. In terms of annual passengers, a similar number of passengers travelling from or to other EU countries pass through Gatwick and Heathrow each year. Heathrow handles significantly more passengers travelling from or to non-EU locations than Gatwick of Heathrow.

TABLE 6.2: Freight and passenger usage of major airports of the South East[27]

AIRPORT	TOTAL ANNUAL FREIGHT TONNES	ANNUAL FREIGHT TONNES (EU)	ANNUAL FREIGHT TONNES (NON-EU)	ANNUAL FREIGHT TONNES (DOMESTIC)	TOTAL ANNUAL PASSENGERS	ANNUAL PASSENGERS (EU)	ANNUAL PASSENGERS (NON-EU)	ANNUAL PASSENGERS (DOMESTIC)
Gatwick	97,000	2,000	95,000	300	45,557,000	28,238,000	12,189,000	4,083,000
Heathrow	1,698,000	112,000	1,586,000	1,000	78,013,000	26,114,000	46,405,000	4,801,000
Southampton	200	74	0	126	2,070,000	772,000	8,000	1,216,000

26 Airport statistics (Civil Aviation Authority, 2017); Airports Topic Paper (Transport for the South East, 2017); and Ports Topic Paper (Transport for the South East, 2017).

27 Airport statistics (Civil Aviation Authority, 2017)

Heathrow

Heathrow is a very significant airport in terms of passenger numbers (78 million and growing) and destinations served, (204). It also has a key function as an international hub serving as a transfer point between routes. The high quality international connectivity provided by Heathrow has led to a clustering of economic activity called the "western wedge" focused to the west of the airport. Businesses within this area generate 10% of the UK's total economic output and provide over 2.4 million jobs.[28]

Gatwick

Gatwick Airport handles 46 million passengers flying to more destinations than any other UK airport. 97,000 metric tonnes of freight also pass through the airport. Tens of thousands of jobs are located directly on the Gatwick campus to deliver these services, with many thousands more supported indirectly across the country. Economic clustering has taken place around Gatwick as part of the supply chain to the airport and for other businesses that want to benefit from being in close proximity to the international gateway. The Gatwick Diamond has an annual contribution to UK GVA of £25 billion and is home to many UK and international company headquarters.

Southampton

Southampton Airport is an important regional airport. It serves around two million passengers every year on 35,000 flights to 40 destinations across the UK and Europe. It is the eighteenth busiest airport in the UK and the eighth busiest airport in England outside the London airports. South of Birmingham, only the London airports and Bristol are busier. The contribution of Southampton to the UK economy amounts to more than £160 million annually.

There are also three Smaller airports (Lydd, Shoreham and Farnborough) which play an important role locally by providing employment and business connectivity.[29]

Eurotunnel, Channel Tunnel Rail Link stations and termini

The South East has three international gateways providing access to Europe via the Channel Tunnel Rail Link. These are: Ebbsfleet International, Ashford International and Folkestone Eurotunnel Terminus. More than 2,000 freight trains transported 1.22 million tonnes of freight through the Channel Tunnel in 2017 and 21.3 million tonnes of freight were carried in vehicles using Eurotunnel shuttle services. In the same year 10.3 million passenger travelled on high speed passenger services and 10.4 million passengers travelled on the Eurotunnel shuttle services.[30]

28 London Heathrow Economic Impact Study (Regeneris, 2013)

7 Airports Topic Paper (Transport for the South East, 2017)

30 Channel Tunnel annual traffic data (Getlink Group, 2017)

FIGURE 6.1: TRANSPORT NETWORK SERVING THE GATEWAYS OF THE SOUTH EAST

Different connectivity demands

Freight

Businesses exporting, importing or delivering goods rely on high quality connectivity between the port, airport or channel tunnel terminal through which the goods are passing and the end destination of the goods. Onward connectivity will principally be provided by road corridors.[31] The proportion of land freight transported by rail has increased considerably in the last 20 years, but still 88% is carried by road.[32]

One of the key complexities in the identification of the connectivity needed to support export and import of freight is the difficulty in determining what the end destination of imported goods is. Goods come through international gateways and are often transported to a distribution centre before travelling onto their ultimate destination. These journeys have an impact on the transport network and are key to understanding the relationship between the transport network and international gateways. Further analysis and investigation is needed to understand this in more detail to help ensure investment in transport infrastructure can be well targeted.

In the South East as well as in the wider UK there is a shortage of overnight accommodation and rest facilities and associated parking for road freight vehicles. The need for these facilities, as well as freight management processes such as hard shoulder stacking, increases when an incident on the road network or another factor prevents the ports from operating optimally. There is a risk with the UK's withdrawal from the European Union that the need for increased border checks may exacerbate this further, reducing the ability of the South East and the UK to trade efficiently with the EU and the rest of the world.

Business Travel

Business travellers are more likely to use airports or Channel Tunnel Rail Link stations than ports for the purposes of meeting clients in major international cities. These international gateways provide fast connections to international commercial hubs. For connectivity to international gateways, business travellers have a higher propensity to travel by rail than other users therefore good connectivity along rail corridors is particularly important to the business traveller.[33]

Leisure and Tourism

For Channel Tunnel Rail Link stations such as Ebbsfleet International and Ashford International, rail connectivity provides a convenient link to the Gateway, avoiding the need to drive and park. However, both Ashford and Ebbsfleet International have car parking facilities, so when rail is not the most suitable option, connectivity by road is also available. With connectivity to airports, the parking infrastructure is typically very substantial so the efficiency and reliability of road and rail connectivity are both important. Individuals using ports as their international gateway will typically be driving to the port and boarding a car ferry. Therefore, the most important corridors for connectivity to ports for the purposes of leisure travel are highway corridors.

Local Connectivity

Access to international gateways has an impact on the local transport network across all user types. In the case of freight, many categories of cargo, such as aggregates for the construction industry, will have end destinations which are relatively near to the port. For these trips a reliable local transport network is required.

Taking into consideration the importance of connectivity to international gateways the key corridors have been identified. These are corridors which serve international gateways, but also corridors which facilitate the transportation of goods and people from the international gateways to locations in the wider UK. These have been mapped on Figure 6.2.

31 Data on the origin and destination of freight and the mode of travel of the journey between port and origin/destination is generally not publicly available. Representatives of Southampton Port have provided some data to evidence the proportion of freight.

32 National Rail Trends Portal (Office for Rail and Road, 2016)

33 National Travel Survey (Department for Transport, 2016)

FIGURE 6.2: CORRIDORS PROVIDING ACCESS TO INTERNATIONAL GATEWAY

Corridor Assessment

To assess the extent to which each corridor supports access to international gateways, the major international gateways served by each corridor were identified.

- Corridors scored no ticks if they do not provide access to an international gateway.
- Corridors scored one tick if they provide access to an international gateway, but do not directly serve the international gateway.
- Corridors scored two ticks if they directly serve an international gateway, but it is not a principal route.
- Corridors scored three ticks if they are a principal route to an international gateway.

TABLE 6.3: Major international gateways served

CORRIDOR	MAJOR INTERNATIONAL GATEWAYS SERVED	ASSESSMENT
M25	Ebbsfleet International, London Gatwick Airport and London Heathrow Airport	✓✓✓
M4/Great Western Mainline	London Heathrow Airport	✓✓✓
A27-M27/West Coastway Line	Port of Shoreham, Port of Portsmouth, Port of Southampton and Southampton Airport	✓✓✓
M3/South Western Mainline	Port of Southampton, Southampton Airport and London Heathrow Airport	✓✓✓
A23-M23/Brighton Mainline	Port of Newhaven, Port of Shoreham and London Gatwick Airport	✓✓✓
A34/CrossCountry Manchester-Bournemouth	Port of Southampton, Port of Portsmouth and Southampton Airport	✓✓✓
A2-M2/Chatham Mainline	Port of Dover, Ebbsfleet International, Medway Ports and Port of London	✓✓✓
A3/Portsmouth Direct Line	Port of Portsmouth	✓✓✓
A2/Chatham-Ramsgate Mainline	Medway Ports	✓✓✓
A229/Medway Valley Line	Medway Ports	✓✓✓
A20-M20/HS1	Port of Dover and Ashford International	✓✓✓
A259/East Coastway Line	Port of Newhaven and Ashford International	✓✓
Redhill-Tonbridge Line	London Gatwick Airport	✓✓
A25/North Downs Line	London Gatwick Airport	✓✓
A264/Arun Valley Line	London Gatwick Airport	✓✓
A22/Oxted Line	London Gatwick Airport	✓
A299/Chatham-Ramsgate Mainline	Medway Ports	✓
Herne Bay/Whitstable-Canterbury	Medway Ports	✓
A21/Hastings Line		
A33/CrossCountry		
A322-A329/North Downs Line		
A303/West of England Mainline		

7

Enabling development

Overview

It is crucial that housing availability and affordability do not become serious constraints to the future growth of the economy. Already, a ratio of median house price to median earnings of nearly 9.5 compared to the national average of 7.5 puts into sharp focus the affordability constraints facing the South East, with some parts of Surrey two times less affordable than the national average.

Whilst some coastal communities and estuarine communities do not have chronic affordability issues, there are local challenges still within the housing market around affordability and quality, particularly in the private rental sector.

However, local authorities and their private sector partners are proactively responding to low levels of housing affordability to prevent it from becoming a constraint on the future growth of the economy. Planned residential development is being focussed on the areas of lowest affordability with a view to reducing the mismatch between demand and supply and enabling more people to live in areas of high demand and desirability.

Connectivity plays an important part in enabling development. Good connectivity for businesses and residents to goods, services and employment opportunities helps to ensure the efficient uptake of home and office space and increases land value, as well as providing the capacity for increased travel demand, and immediate site access to the network.

Location of developments

Ambitious targets for housing and commercial development are key to addressing the housing affordability constraint in the South East. Figure 7.1 shows the location of major housing (developments of over 500 homes) and Figure 7.2 the major employment developments (developments delivering more than 250 jobs) between now and the early 2030s, as identified in Local Plans.[34]

Development is being planned sustainably in the South East. Prioritising densification of urban areas allows a growing population to be accommodated with reduced adverse impact on protected natural assets. Building in close proximity to public transport provision provides sustainable connectivity to residents and businesses, as well as providing sustainable access to leisure and retail facilities.

34 Data has been provided by Local Planning Authorities. Data was not available from Isle of Wight, West Berkshire and Royal Borough of Windsor and Maidenhead

Developments, both commercial and residential are typically located at one of the following locations.

- **Urban extensions:** planned expansion of a city or town. This allows the new developments to benefit from the infrastructure already in place in the urban area.
- **Transport hubs:** development or densification of development at and around locations which provide a variety of different transport options. This is desirable as it provides a large catchment area in which the residents of the development can seek employment.
- **A transport corridor:** development of settlements which have fast access to a railway line or major road corridor.

In many cases, the demand for development at these locations stems in part from their convenient location on key strategic transport corridors which provide good access to employment skills, retail, and leisure opportunities. Yet, rail passenger crowding statistics[35] indicate that for London and South East rail operators, passengers in excess of capacity across both peaks is already at an historic peak level of 4.5% and as Figure 7.3 shows, many of the highway corridors of the South East are forecast to be severely congested by 2040, despite delivery of all schemes identified in the Department for Transport's Road Investment Strategy 2015 to 2020 (RIS1).[36] In short, even to accommodate Local Plan levels of growth in housing, and corresponding employment and other development, a significant increase in investment is required.

The Transport Strategy for the South East is looking beyond Local Plan levels to 2050, so further strategic planning is required to consider and mitigate the impact of additional development on these corridors. Without sufficient investment to increase the capacity of strategic transport corridors – the strategic and major road network as well as rail network - and the supporting network, congestion will erode the potential for economic growth in the area by increasing journey times and reducing the efficiency of the transport network.

There is also a need to appreciate the long planning and delivery horizons of major infrastructure and realise that the investment is required sooner rather than later if places are to achieve Local Plan levels, let alone accelerate them or go beyond to 2050.

With this consideration of the importance of connectivity in enabling planned development, the key corridors have been identified. These have been mapped in Figure 7.4.

35 Rail passenger numbers and crowding on weekdays in major cities in England and Wales: 2016 (Department for Transport, 27 July 2017)

36 Figure 7.3 is from the Department for Transport's Road Traffic Forecasts (2015) and uses "Scenario 3" which assumed an extrapolated trend for trip rates, and positive but declining correlation to income, and a 'central' macroeconomic forecast.

FIGURE 7.1: PLANNED RESIDENTIAL DEVELOPMENTS

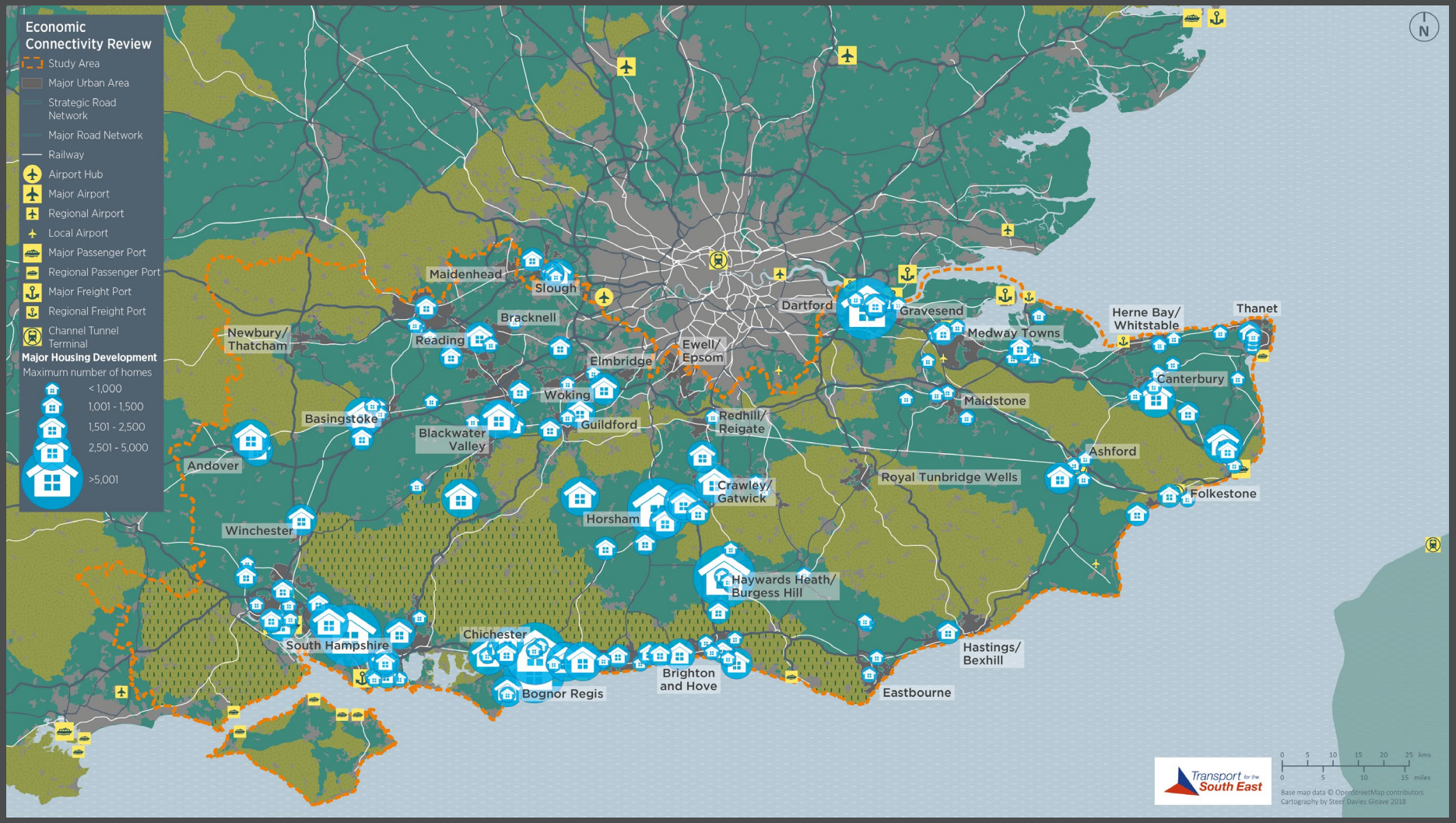


FIGURE 7.2: MAP OF PLANNED EMPLOYMENT DEVELOPMENTS

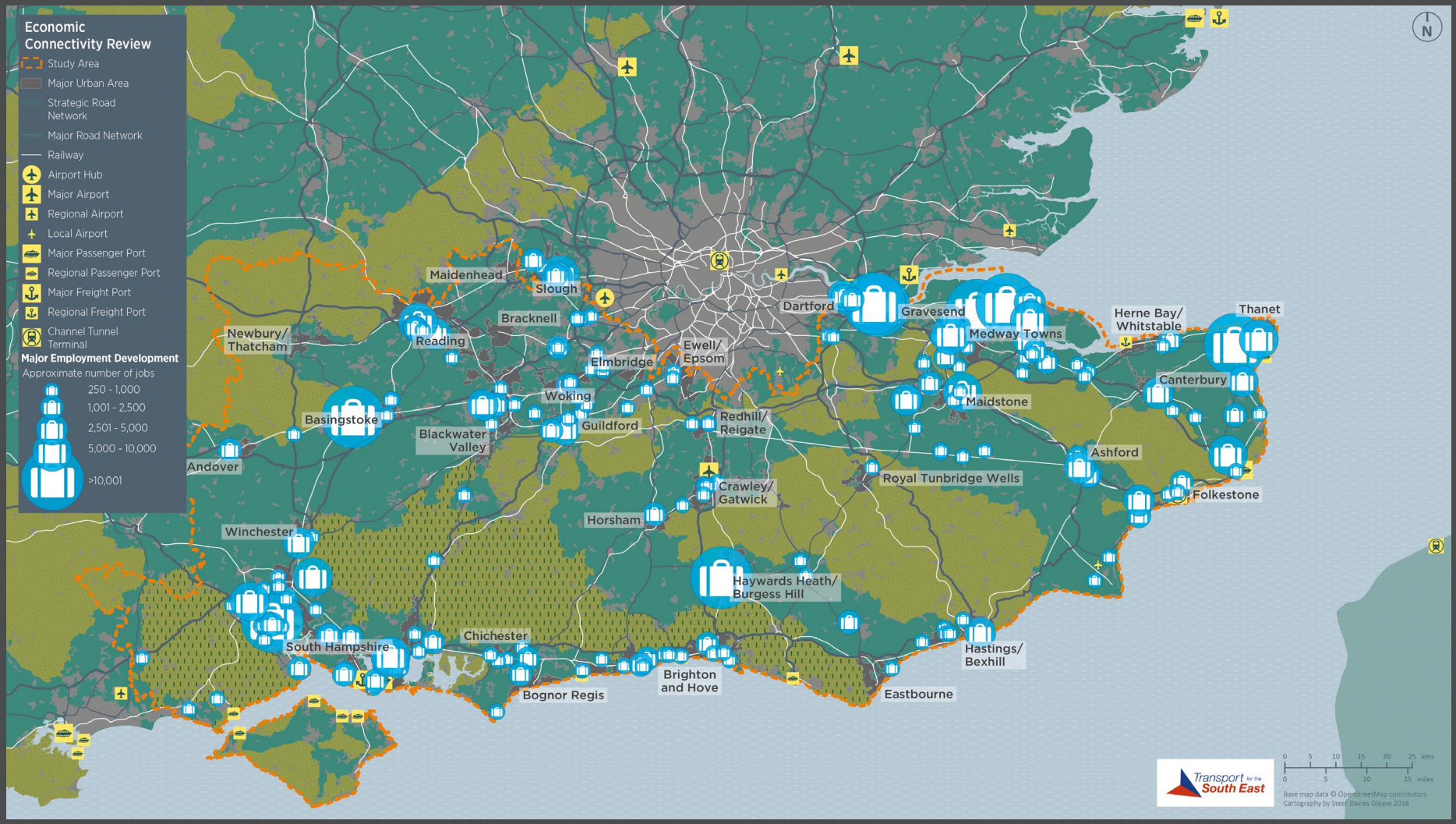


FIGURE 7.3: STRATEGIC AND MAJOR ROAD NETWORK STRESS MAP FOR 2040 ("SCENARIO 3" WITH ALL ROAD INVESTMENT STRATEGY 2015-2020 SCHEMES DELIVERED)

KEY

- Severe congestion
- Regular congestion
- Moderate congestion
- Occasional congestion

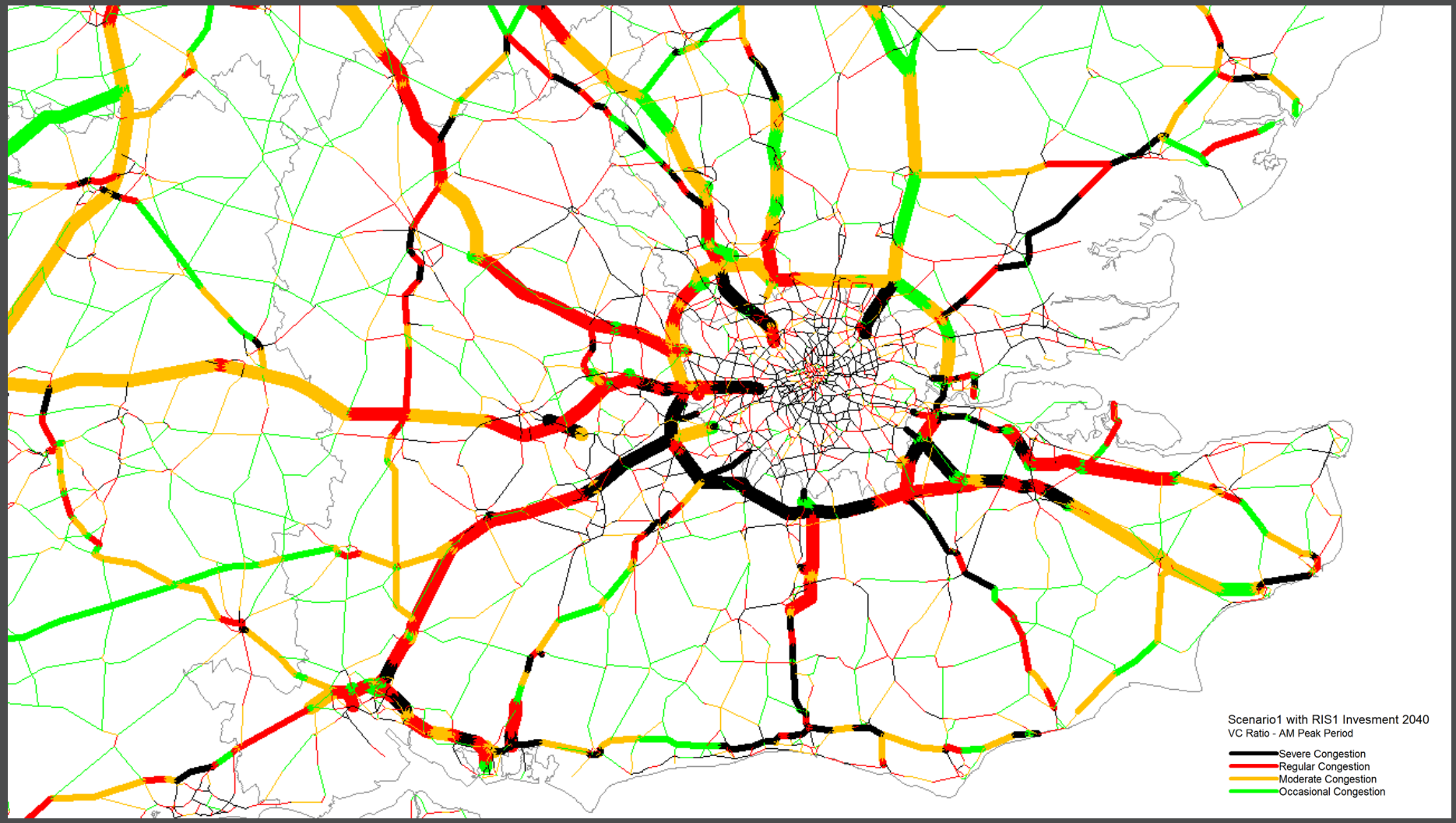


FIGURE 7.4: CORRIDORS ENABLING DEVELOPMENT

Corridor Assessment

To assess the extent to which each corridor enables planned development, the number of homes and jobs in planned major developments by corridor were identified.

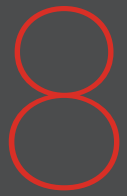
- A score of three ticks was given for corridors on which the total homes and jobs planned in major developments is 30,000 or more.
- A score of two ticks was given for corridors on which the total homes and jobs planned in major developments is more than 7,000, but less than 30,000.
- A score of one tick was given for corridors on which the total homes and jobs planned in major developments is more than 500, but less than 7,000.

Major developments were defined as housing developments of over 500 homes or commercial developments providing capacity for over 250 jobs. Jobs and homes numbers are representative of Local Plan allocations and do not include smaller developments or developments planned beyond the Local Plan period.

It is acknowledged that smaller residential and commercial developments may account for more than half of the planned homes and jobs in the South East.

TABLE 7.1: Homes and jobs in planned major developments

CORRIDOR	HOMES IN MAJOR HOUSING DEVELOPMENTS	JOBS IN MAJOR COMMERCIAL DEVELOPMENTS	ASSESSMENT
A2/Chatham-Ramsgate Mainline	161,000	18,000	✓✓✓
M3/South Western Mainline	90,500	15,000	✓✓✓
A27-M27/West Coastway Line	40,500	62,500	✓✓✓
A3/Portsmouth Direct Line	29,500	20,500	✓✓✓
A23-M23/Brighton Mainline	18,000	23,500	✓✓✓
A299/Chatham-Ramsgate Mainline	25,000	8,500	✓✓✓
M4/Great Western Mainline	25,000	7,000	✓✓✓
A20-M20/HS1	21,500	5,000	✓✓
A2-M2/Chatham Mainline	12,500	6,500	✓✓
A264/Arun Valley Line	3,500	15,500	✓✓
Redhill-Tonbridge Line	10,500	5,500	✓✓
M25	14,000	500	✓✓
A322-A329/North Downs Line	10,000	3,000	✓✓
A259/East Coastway Line	8,500	2,000	✓✓
A33/CrossCountry	8,500	1,000	✓✓
Herne Bay/Whitstable-Canterbury	3,500	6,000	✓✓
A22/Oxted Line	3,000	5,000	✓✓
A303/West of England Mainline	1,500	4,500	✓
A21/Hastings Line	4,500	-	✓
A34/CrossCountry Manchester-Bournemouth	500	2,000	✓
A229/Medway Valley Line	1,000	500	✓
A25/North Downs Line	500	-	✓



Supporting Deprived Communities

Overview

The South East area is the highest per capita contributor to UK GVA after London.[37] It is home to areas of high demand for housing and consequent high house prices. However, there are also significant areas which have large populations, high unemployment and low productivity. This is due in part to poor connectivity to areas of employment or further education and higher education facilities, but may also be due to the areas suffering from a poor quality of place which discourages people and businesses from relocating there.

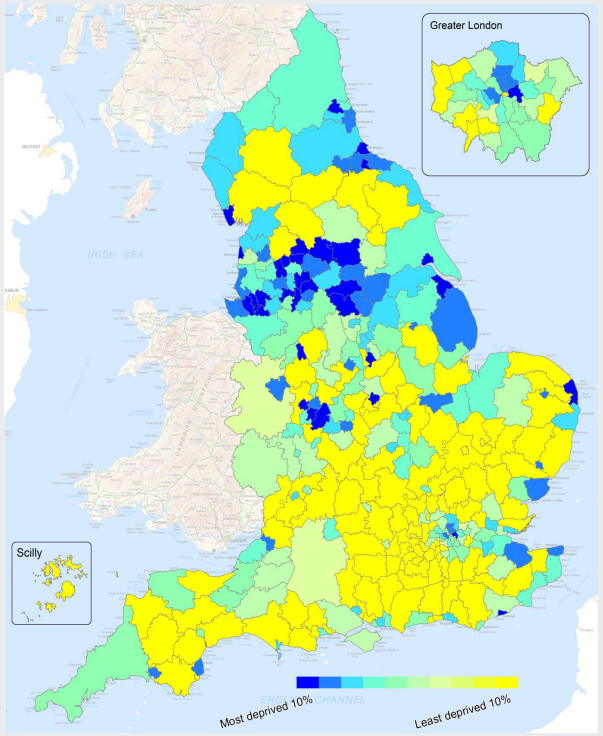
To ensure that the resources of the South East are efficiently utilised and to help raise the welfare of deprived communities, the transport network has a role to play in improving access to skills and employment with the potential impact of increasing economic participation and productivity of the residents of these areas.

Coastal communities

Figure 8.1 shows that the most deprived communities in the South East are overwhelmingly its coastal communities. The support of these communities is a national, regional and local strategic priority. In 2015, the Ministry for Homes Communities and Local Government set up the Coastal Community Fund[38] with a view to recognising that Coastal Communities play a vital role in the economy, history and culture of our country and to help boost economic productivity and strengthen their appeal as places to live, work and visit.

The South East Local Enterprise Partnership (one of five Local Enterprise Partnerships across Transport for the South East area) places a strategic focus on its Coastal Communities and recognises that they are defining features of south east England and require bespoke, co-ordinated programmes of investment to enable them to generate the returns available from the enterprise and employment, culture and heritage that their location provides.[39]

FIGURE 8.1: DEPRIVATION BY LOCAL AUTHORITY



Contains OS data © Crown Copyright (2015)

37 Regional Gross Value Added data (Office for National Statistics, 2017)

38 Source: https://www.gov.uk/government/collections/coastal-communities (accessed 30 April 2017)

39 Strategic Economic Plan (South East Local Enterprise Partnership, 2014)

Access to skills and employment

The size of the South East's economy is driven by number of jobs and the productivity per worker (measured in Gross Value Added - GVA). In the coastal communities, jobs typically have lower levels of GVA per worker, but if large numbers of people are employed in these jobs then the overall contribution to total GVA, and the economy of the South East, can be just as significant.

In some cases, coastal communities suffer due to isolation from economic hubs which are most likely to be locations of jobs and further / higher education facilities which will enable residents of Coastal Communities to be upskilled. However, many coastal communities are very well connected with relatively fast road and rail connections into London and other economic hubs along the way, but the strategic local connectivity and orbital connections to other coastal communities, particularly sustainable transport options, are poor.

Learning new skills increases the range of jobs for which an individual can apply and there is not a lack of further education colleges in major, coastal urban areas of the South East. Connectivity between these urban areas is poor though and this restricts the choice of further education colleges that residents of coastal communities can access.

Poor orbital connectivity also reduces the size of workplace catchments from which individuals can seek employment. For individuals working in high GVA per worker industries with high wages it can be much more easily justified to have long and expensive commutes.[40] However, the principal industries in coastal communities offer lower wages with costly commutes not being affordable.

A high quality strategic local transport network would facilitate residents of coastal communities being able to access skills to increase the type of employment available to them. It would also enlarge the catchment from which they could seek employment. With the result of increased economic participation and a consequent uplift in contribution to the GVA of the South East.

Visitor Economy

The visitor economy is a key employer in coastal communities and includes sectors such as Accommodation, Food, and Retail. which are significant contributors to the GVA of the South East and to overall employment. These are the strengths of coastal communities and the connectivity needs of these sectors informs how the transport network could better support coastal communities.

To support coastal communities, connectivity from areas of significant population within the South East and within the wider UK to coastal communities could be enhanced. It is from these areas where the majority of domestic visitors will be travelling. Improved connectivity between coastal communities and international gateways could also stimulate increased international tourism. The consequent increase in visitor numbers could drive higher employment and GVA in these locations.

Based on this understanding of the how transport investment can have a positive impact on deprived communities, the key economic corridors have been mapped in Figure 8.2.

40 Commuting trends in England 1988 – 2015 (Department for Transport, 2017)

FIGURE 8.2: CORRIDORS SUPPORTING DEPRIVED COMMUNITIES

Corridor Assessment

To assess the extent to which corridors support deprived communities, the Local authority districts in the top 30% most deprived, served by each corridor, were identified. The level of deprivation of the communities and access provided by the corridor were contributing factors to the score that was awarded.

- A score of three ticks was given for corridors which serve more than one Local Authority District in the top 30% most deprived or at least one Local Authority District in the top 20% most deprived.
- A score of two ticks was given for corridors which serve at least one Local Authority District in the top 30% most deprived.

No corridors have been scored no ticks because all corridors are part of a regional and national network which supports access to and from deprived communities. This also acknowledges the fact that all corridors provide access to and from localised areas of deprivation.

TABLE 8.1: Local authority districts in the top 30% most deprived

CORRIDOR	LOCAL AUTHORITY DISTRICTS IN THE TOP 30% MOST DEPRIVED SERVED BY CORRIDOR	ASSESSMENT
A27-M27/West Coastway Line	Southampton, Isle of Wight, Brighton and Hove and Portsmouth	✓✓✓
M3/South Western Mainline	Isle of Wight and Southampton	✓✓✓
A34/CrossCountry Manchester-Bournemouth	Southampton and Portsmouth	✓✓✓
A2-M2/Chatham Mainline	Swale and Medway	✓✓✓
A2/Chatham-Ramsgate Mainline	Swale and Medway	✓✓✓
A259/East Coastway Line	Hastings	✓✓✓
A299/Chatham-Ramsgate Mainline	Thanet	✓✓✓
A21/Hastings Line	Hastings	✓✓✓
A22/Oxted Line	Eastbourne	✓✓
M25	Slough	✓✓
M4/Great Western Mainline	Slough	✓✓
A23-M23/Brighton Mainline	Brighton and Hove	✓✓
A3/Portsmouth Direct Line	Portsmouth	✓✓
A229/Medway Valley Line	Swale	✓✓
A20-M20/HS1	Dover	✓✓
A33/CrossCountry		✓
A322-A329/North Downs Line		✓
Redhill-Tonbridge Line		✓
A25/North Downs Line		✓
A264/Arun Valley Line		✓
A303/West of England Mainline		✓
Herne Bay/Whitstable-Canterbury		✓

9

Findings and next steps

Overview

The Economic Connectivity Review seeks to describe the transport and economic geography of the South East, to identify the region's key economic corridors, and to prioritise these corridors based on the potential impact of transport intervention along the corridor.

Conclusions

The case for strategic investment

The South East adds more than £200 billion to the UK economy each year, is home to 7.5 million people, and 4 million workers in 300,000 companies. Specialist in knowledge-intensive, high-value industries, the economy of the South East is forecast to grow to over £330 billion per year in the next 30 years, but even this 'business as usual' scenario requires transport and other types of intervention and a significant increase in investment.

The high growth sectors will be key in realising this projected growth. These are Advanced Engineering and Manufacturing, Creative Industries, Financial and professional services, IT Services, Low carbon environmental, Marine Maritime and Defence, Tourism and Transport and Logistics. These are supported by the enabling sectors of Business Support, Construction, Education, Health, and Retail. Together these sectors account for 71% of employment and 65% of GVA.

The South East will lead the way supporting the UK's response to Brexit, through its strong economy, strategic location and substantial economic assets such as major international gateways, and ambitious, outward facing enterprise. Building on these assets and backing the region's high-growth sectors could deliver as much as £500 billion per year by 2050.

The international gateways of the South East are the international gateways of the UK: businesses and individuals from across the UK and world rely on the international connectivity provided by a combination of the two busiest UK airports – Heathrow and Gatwick; ABP Southampton– a deep-sea port on the main international shipping line; Port of Dover – through which one seventh of all UK trade passes and is the world's busiest passenger port; and a high speed railway link to Europe via the Channel Tunnel Rail Link and Euro Tunnel; as well as numerous other major gateways.

The South East is proactively responding to the housing affordability crisis, which has resulted in parts of the region being two times less affordable than the national average currently. By pursuing ambitious plans for development, focussed in high demand locations, individuals will have better access to employment and this constraint to economic growth can be removed.

To ensure that the South East can continue to lead the way, driving economic growth throughout the UK investment is required, formulated using joined up, strategic thinking across the area to ensure that solutions are not restricted by administrative or political boundaries.

Transport and Economy

Good transport connectivity supports economic growth through stimulating a range of outcomes:

Increasing business connectivity ensures that trade can be carried out in an effective way with other businesses in the supply chain or the end consumers. Many of the South East's economic strengths such as transport and logistics and construction rely considerably on the transport network.

Improving labour market efficiency through increasing the size of the catchment area from which employers can seek workers and from which individuals can seek employment. Currently 56% of all commuting trips in the South East remain within the local area.

Enabling planned development by increasing the attractiveness of sites to developers, businesses and individuals. This will help to bring forward the additional 780,000 homes forecast to be built by 2039 in the South East.

Improving access to international gateways: 50% of freight passing through Dover has come from or is going to a location outside of the South East of the UK, but 99% of international trade passing through the port is with the EU, so strong strategic road and rail connectivity to international gateways is key to helping the UK retain its attractiveness as a business location for investment and to supporting the UK's international competitiveness.

Supporting deprived communities through improved access to skills and employment - Nine of the South East's local planning authority areas are within the top 100 most deprived areas in the UK. By supporting all parts of the region, it will allow the most successful places and the region to prosper further and more sustainably.

Transport is a major part of the economy, but not the only 'component' requiring additional investment. Key enablers such as innovation, skills, and digital infrastructure are also vital for driving economic growth – enablers that are not removed from transport, but integrated in a complex economic system.

The strategic transport corridors of the South East have been identified as supporting one or more of the economic outcomes described above. They are mapped in Figure 9.1. These corridors are distributed across the geography of the region connecting the economic hubs which drive the economy of the South East both within and outside the region.

Corridor sequencing

The extent to which each of corridors supports the economic outcomes of transport has been presented in the five previous chapters. In addition to this, consideration has been given to the level of transport 'constraint' and transport 'potential' along each corridor.

Transport 'constraint'

Two factors contributed to the assessment of transport 'constraint' along each corridor:

- **Qualitative:** Through review of Highways England's Route Strategies, Network Rail's long-term planning documents, Local Transport Plans, and Strategic Economic Plans, the key transport constraints by corridor were identified (e.g. congestion, heavy traffic, rail network and onboard crowding, safety). The more severe and numerous, the higher the corridor scored.
- **Quantitative:** Using the South East Regional Transport Model, the annual hours of delay per KM for all road users was analysed to identify the total level of 'constraint' on each corridor.

The qualitative and quantitative assessments are not additive. They have been considered and expert judgement has been applied to identify an overall assessment of corridor transport 'constraint'.

The results of the assessment are provided in Table 9.1.

TABLE 9.1: Assessment of transport constraints

CORRIDOR	QUALITATIVE ASSESSMENT	QUANTITATIVE ASSESSMENT	TRANSPORT 'CONSTRAINT'
A27-M27/West Coastway Line	✓✓✓	✓✓✓	✓✓✓
A229/Medway Valley Line	✓✓✓	✓✓✓	✓✓✓
A22/Oxted Line	✓✓✓	✓✓✓	✓✓✓
A322-A329/North Downs Line	✓✓✓	✓✓✓	✓✓✓
A25/North Downs Line	✓✓✓	✓✓✓	✓✓✓
A34/CrossCountry Manchester-Bournemouth	✓✓	✓✓✓	✓✓✓
A2-M2/Chatham Mainline	✓✓	✓✓✓	✓✓✓
A33/CrossCountry	✓✓	✓✓✓	✓✓✓
A259/East Coastway Line	✓✓	✓✓✓	✓✓✓
Redhill-Tonbridge Line	✓✓	✓✓✓	✓✓✓
M25	✓✓✓	✓✓	✓✓✓
A23-M23/Brighton Mainline	✓✓✓	✓✓	✓✓✓
M4/Great Western Mainline	✓✓✓	✓✓	✓✓
M3/South Western Mainline	✓✓✓	✓✓	✓✓
A3/Portsmouth Direct Line	✓✓	✓✓	✓✓
A264/Arun Valley Line	✓✓	✓✓	✓✓
A21/Hastings Line	✓✓	✓✓	✓✓
Herne Bay/Whitstable-Canterbury	✓	✓✓	✓✓
A2/Chatham-Ramsgate Mainline	✓✓	✓	✓✓
A20-M20/HS1	✓	✓	✓✓
A299/Chatham-Ramsgate Mainline	✓	✓	✓
A303/West of England Mainline	✓	✓	✓

Transport 'potential'

Three factors contributed to the assessment of the transport 'potential' along each corridor:

- **Environment:** The extent to which the delivery of transport interventions along each corridor could be affected by proximity to protected areas such as National Parks, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest. The lesser the extent to which transport intervention on the corridor is affected by proximity to protected area the higher the score.
- **Population centres:** The extent to which delivery of transport interventions along each corridor could be affected by proximity to population centres. The lesser the extent to which transport intervention on the corridor is affected by proximity to population centres the higher the score.
- **Identified proposals:** Through review of Highways England's Route Strategies, Network Rail's long-term planning documents, Local Transport Plans, and Strategic Economic Plans, existing proposals on each corridor were identified. The more numerous or substantial the proposals on a corrridor, the higher the score.

The results of the assessment are provided in Table 9.2.

Tables 9.3 and 9.4 identify the corridors and the multi-criteria assessment framework which informs the sequencing of the corridors.

TABLE 9.2: Assessment of transport potential

CORRIDOR	ENVIRONMENT	POPULATION CENTRES	IDENTIFIED PROPOSALS	TRANSPORT 'POTENTIAL'
M25	✓✓	✓✓	✓✓✓	✓✓✓
M4/Great Western Mainline	✓✓	✓✓	✓✓✓	✓✓✓
M3/South Western Mainline	✓✓	✓✓	✓✓✓	✓✓✓
A20-M20/HS1	✓✓	✓✓	✓✓✓	✓✓✓
A2-M2/Chatham Mainline	✓✓✓	✓✓✓	✓✓	✓✓✓
A33/CrossCountry	✓✓✓	✓✓✓	✓✓	✓✓✓
A34/CrossCountry Manchester-Bournemouth	✓✓	✓✓✓	✓✓	✓✓✓
Redhill-Tonbridge Line	✓✓✓	✓✓✓	✓	✓✓✓
A303/West of England Mainline	✓✓✓	✓✓✓	✓	✓✓✓
A299/Chatham-Ramsgate Mainline	✓✓	✓	✓✓✓	✓✓
A21/Hastings Line	✓	✓✓✓	✓✓	✓✓
A23-M23/Brighton Mainline	✓✓	✓✓	✓✓	✓✓
Herne Bay/Whitstable-Canterbury	✓✓	✓✓✓	✓	✓✓
A264/Arun Valley Line	✓✓✓	✓✓	✓	✓✓
A259/East Coastway Line	✓	✓✓	✓✓	✓
A25/North Downs Line	✓	✓✓	✓✓	✓
A2/Chatham-Ramsgate Mainline	✓✓	✓	✓✓	✓
A229/Medway Valley Line	✓✓	✓	✓✓	✓
A322-A329/North Downs Line	✓✓	✓	✓✓	✓
A22/Oxted Line	✓✓	✓✓	✓	✓
A27-M27/West Coastway Line	✓	✓	✓✓	✓
A3/Portsmouth Direct Line	✓	✓✓	✓	✓

TABLE 9.3: MULTI-CRITERIA ASSESSMENT OF STRATEGIC CORRIDORS

	BUSINESS CONNECTIVITY		LABOUR MARKET EFFICIENCY		INTERNATIONAL GATEWAYS	ENABLE DEVELOPMENT		DEPRIVED COMMUNITIES	TRANSPORT CONSTRAINTS		TRANSPORT POTENTIAL		
CORRIDOR	BUSINESS & FREIGHT IMPACT OF DELAY PER KM (BASE)	BUSINESS & FREIGHT IMPACT OF DELAY PER KM (2041)	COMMUTER IMPACT OF DELAY PER KM (BASE)	COMMUTER IMPACT OF DELAY PER KM (2041)	MAJOR INTERNATIONAL GATEWAYS SERVED	HOMES IN MAJOR HOUSING DEVELOPMENTS	JOBS IN MAJOR COMMERCIAL DEVELOPMENTS	LOCAL AUTHORITY DISTRICTS IN THE TOP 30% MOST DEPRIVED SERVED BY CORRIDOR	QUALITATIVE	QUANTITATIVE	ENVIRONMENT	POPULATION CENTRES	IDENTIFIED PROPOSALS
M25	£612,000	£3,220,000	£114,000	£433,000	Ebbsfleet International, London Gatwick Airport and London Heathrow Airport	14,000	500	Slough	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
M4/Great Western Mainline	£624,000	£1,017,000	£125,000	£157,000	London Heathrow Airport	25,000	7,000	Slough	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
A27-M27/West Coastway Line	£534,000	£1,208,000	£136,000	£208,000	Port of Shoreham, Port of Portsmouth, Port of Southampton and Southampton Airport	40,500	62,500	Southampton, Isle of Wight, Brighton and Hove and Portsmouth	✓✓✓	✓	✓	✓	✓✓
M3/South Western Mainline	£290,000	£638,000	£86,000	£149,000	Port of Southampton, Southampton Airport and London Heathrow Airport	90,500	15,000	Isle of Wight and Southampton	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
A23-M23/Brighton Mainline	£153,000	£446,000	£52,000	£130,000	Port of Newhaven, Port of Shoreham and London Gatwick Airport	18,000	23,500	Brighton and Hove	✓✓✓	✓✓	✓✓	✓✓	✓✓
A34/CrossCountry Manchester-Bournemouth	£200,000	£417,000	£47,000	£75,000	Port of Southampton, Port of Portsmouth and Southampton Airport	500	2,000	Southampton and Portsmouth	✓✓	✓	✓✓	✓✓✓	✓✓
A2-M2/Chatham Mainline	£108,000	£372,000	£34,000	£85,000	Port of Dover, Ebbsfleet International, Medway Ports and Port of London	12,500	6,500	Swale and Medway	✓✓	✓	✓✓✓	✓✓✓	✓✓
A3/Portsmouth Direct Line	£193,000	£601,000	£85,000	£215,000	Port of Portsmouth	29,500	20,500	Portsmouth	✓✓	✓✓	✓	✓✓	✓
A2/Chatham-Ramsgate Mainline	£252,000	£724,000	£90,000	£183,000	Medway Ports	161,000	18,000	Swale and Medway	✓✓	✓✓✓	✓✓	✓	✓✓
A33/CrossCountry	£836,000	£1,547,000	£414,000	£739,000		8,500	1,000		✓✓	✓	✓✓✓	✓✓✓	✓✓

TABLE 9.3: MULTI-CRITERIA ASSESSMENT OF STRATEGIC CORRIDORS (CONTINUED)

	BUSINESS CONNECTIVITY		LABOUR MARKET EFFICIENCY		INTERNATIONAL GATEWAYS	ENABLE DEVELOPMENT		DEPRIVED COMMUNITIES	TRANSPORT CONSTRAINTS		TRANSPORT POTENTIAL		
CORRIDOR	BUSINESS & FREIGHT IMPACT OF DELAY PER KM (BASE)	BUSINESS & FREIGHT IMPACT OF DELAY PER KM (2041)	COMMUTER IMPACT OF DELAY PER KM (BASE)	COMMUTER IMPACT OF DELAY PER KM (2041)	MAJOR INTERNATIONAL GATEWAYS SERVED	HOMES IN MAJOR HOUSING DEVELOPMENTS	JOBS IN MAJOR COMMERCIAL DEVELOPMENTS	LOCAL AUTHORITY DISTRICTS IN THE TOP 30% MOST DEPRIVED SERVED BY CORRIDOR	QUALITATIVE	QUANTITATIVE	ENVIRONMENT	POPULATION CENTRES	IDENTIFIED PROPOSALS
A229/Medway Valley Line	£478,000	£1,249,000	£232,000	£617,000	Medway Ports	1,000	500	Swale	✓✓✓	✓	✓✓	✓	✓✓
A20-M20/HS1	£101,000	£431,000	£24,000	£73,000	Port of Dover and Ashford International	21,500	5,000	Dover	✓	✓	✓✓	✓✓	✓✓✓
A259/East Coastway Line	£53,000	£182,000	£48,000	£123,000	Port of Newhaven and Ashford International	8,500	2,000	Hastings	✓✓	✓	✓	✓✓	✓✓
A322-A329/North Downs Line	£315,000	£1,019,000	£238,000	£557,000		10,000	3,000		✓✓✓	✓	✓✓	✓	✓✓
Redhill-Tonbridge Line	£80,000	£229,000	£37,000	£90,000	London Gatwick Airport	10,500	5,500		✓✓	✓	✓✓✓	✓✓✓	✓
A22/Oxted Line	£212,000	£536,000	£95,000	£190,000		3,000	5,000	Eastbourne	✓✓✓	✓	✓✓	✓✓	✓
A25/North Downs Line	£250,000	£500,000	£98,000	£194,000	London Gatwick Airport	500	-		✓✓✓	✓	✓	✓✓	✓✓
A299/Chatham-Ramsgate Mainline	£45,000	£173,000	£21,000	£69,000		25,000	8,500	Thanet	✓	✓✓✓	✓✓	✓	✓✓✓
A264/Arun Valley Line	£81,000	£268,000	£39,000	£112,000	London Gatwick Airport	3,500	15,500		✓✓	✓✓	✓✓✓	✓✓	✓
A21/Hastings Line	£83,000	£279,000	£30,000	£80,000		4,500	-	Hastings	✓✓	✓✓	✓	✓✓✓	✓✓
A303/West of England Mainline	£51,000	£419,000	£21,000	£111,000		1,500	4,500		✓	✓✓✓	✓✓✓	✓✓✓	✓
Herne Bay/ Whitstable-Canterbury	£47,000	£132,000	£35,000	£83,000		3,500	6,000		✓	✓✓	✓✓	✓✓✓	✓

TABLE 9.4: SEQUENCING OF STRATEGIC CORRIDORS

CORRIDOR	ECONOMIC IMPACT		ENABLED BY TRANSPORT			REQUIREMENT AND FEASIBILITY		OVERALL	RANK
	BUSINESS CONNECTIVITY	LABOUR MARKET EFFICIENCY	INTERNATIONAL GATEWAYS	ENABLE DEVELOPMENT	DEPRIVED COMMUNITIES	TRANSPORT CONSTRAINTS	TRANSPORT POTENTIAL		
M25	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	1
M4/Great Western Mainline	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	2
A27-M27/West Coastway Line	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓✓✓	3
M3/South Western Mainline	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	4
A23-M23/Brighton Mainline	✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓✓	5
A34/CrossCountry Manchester-Bournemouth	✓✓	✓✓	✓✓✓	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	6
A2-M2/Chatham Mainline	✓✓	✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	7
A3/Portsmouth Direct Line	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓	✓✓	8
A2/Chatham-Ramsgate Mainline	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓	✓✓	9
A33/CrossCountry	✓✓✓	✓✓✓	-	✓✓	✓	✓✓✓	✓✓✓	✓✓	10
A229/Medway Valley Line	✓✓✓	✓✓✓	✓✓✓	✓	✓✓	✓✓✓	✓	✓✓	11
A20-M20/HS1	✓✓	✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓	✓✓	12
A259/East Coastway Line	✓	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓	✓✓	13
A322-A329/North Downs Line	✓✓✓	✓✓✓	-	✓✓	✓	✓✓✓	✓	✓✓	14
Redhill-Tonbridge Line	✓	✓	✓✓	✓✓	✓	✓✓✓	✓✓✓	✓✓	15
A22/Oxted Line	✓✓	✓✓	✓	✓✓	✓✓	✓✓✓	✓	✓✓	16
A25/North Downs Line	✓✓	✓✓	✓✓	✓	✓	✓✓✓	✓	✓✓	17
A299/Chatham-Ramsgate Mainline	✓	✓	✓	✓✓✓	✓✓✓	✓	✓✓	✓✓	18
A264/Arun Valley Line	✓	✓✓	✓✓	✓✓	✓	✓✓	✓✓	✓	19
A21/Hastings Line	✓	✓	✓	✓	✓✓✓	✓✓	✓✓	✓	20
A303/West of England Mainline	✓✓	✓	-	✓	✓	✓	✓✓✓	✓	21
Herne Bay/Whitstable-Canterbury	✓	✓	✓	✓✓	✓	✓✓	✓✓	✓	22

Next steps

Building on the work of the Economic Connectivity Review, the Transport for the South East Transport Strategy will identify the strategic direction for transport investment.

The inherent uncertainty that comes with long term planning brings with it a need to consider the future of the determinants of demand for and supply of infrastructure as well as the spatial and temporal distribution of movement.

Factors such as an ageing population, vehicle and energy technology, disruptive digital technologies, and the need for climate change resilience and adaptation could all have an impact. To assess the robustness of the Transport Strategy to such uncertainty, scenario testing will be carried out.

The sequencing of corridors, based on the extent to which they support the five economic outcomes as well as the requirement for and feasibility of intervention will guide where further and more extensive investigation of transport corridors. These corridor studies will assess the impact of transport investment in different parts of the South East and will provide a more detailed and nuanced picture, identifying the sections of the corridor which suffer most from congestion and moving towards specifying transport schemes and the development of a transport investment plan.

As has been identified in this report, the role of international gateways and the impact of freight traffic are significant for the economy of the South East, but the evidence base for this is limited by the commercial confidentiality of the firms involved. To reflect this evidence gap and to seek to fill it, economic studies to measure the impact of freight, logistics and international gateways will be carried out. In addition, a topic paper focussed on smart ticketing will be developed.

Transport for the South East

steer