TRANSPORT FOR THE
South East

Transport Strategy for the South East

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Contents

Foreword

Cllr Keith Glazier
Chair, Transport for the South East

I'm incredibly proud to present our Transport Strategy for the South East, which sets out, for the first time, a shared vision for the South East and how a better integrated and more sustainable transport network can help us achieve it.

At the time of writing, in the midst of an unprecedented public health emergency, the future is uncertain for us all. But one thing we do know is that this crisis will pass and, when it does, thoughts will quickly turn to how best we can support people, businesses and communities in our region to recover and thrive once more. That's why it's so important that organisations like Transport for the South East continue with their work and maintain the focus on long-term positive change, even during these tough times.

We know that investment in better transport will be vital for the South East's economic recovery and we know that a prosperous, better connected South East will be vital for the UK's economic recovery. The publication of this strategy marks the next step in the development of Transport for the South East, which has quickly emerged as a powerful and effective partnership for our region. Speaking with one voice on the South East's strategic transport needs, our partnership of civic and business leaders has been able to directly influence how, where and when investment takes place in our roads, railways and other transport infrastructure.

By setting out our thirty-year vision for the region and the strategic goals and priorities which underpin it, this document provides a clear framework for future decision-making which will help us create a more productive, healthier, happier and more sustainable South East. Better for people, better for business and better for the environment.

We already have the second largest regional economy in the UK, second only to London. Our strategy would help the South East's economy more than double over the next thirty years, providing new jobs, new homes and new opportunities – all supported by a modern, integrated transport network. A prosperous, confident South East where people want to live, work, study, visit and do business.

We are clear that it cannot be growth at any cost and that new approaches are needed to achieve our vision. Transport is the single biggest contributor to UK greenhouse gas emissions and the majority of those come from private cars. And transport is the only sector whose contribution continues to grow while others reduce theirs. That needs to change.

The first step on this journey is a simple one; we must make better use of what we already have. Our road and rail networks in the South East may be congested but we know that, in the short-term, targeted investment to relieve pinch-points alongside new technology like digital railway signalling are the best and most effective ways to address short-term capacity and connectivity challenges.

Beyond that, the strategy is clear that catering for forecast road traffic growth in the long term is not sustainable – so we must turn our focus towards large-scale investment in public transport. This shift has become even more important in recent months, with people advised to avoid public transport where possible. When they return, the service on offer to them and to the new users we need to attract must be the best it can possibly be.

We need to ensure that new and emerging technology is used to its full potential to boost physical and digital connectivity. We need to make the case for policy changes which enable more joined up planning, particularly between transport and housing, to help build more sustainable communities.

And we know we will need to make some tough decisions about how, not if, we manage demand on the busiest parts of our transport networks as we cannot continue to simply build our way to growth.

This is a thirty-year strategy. The changes we want to see will not all happen overnight, and, in some instances, there are policy challenges and other hurdles which stand in our way – not least the unprecedented impact of the Coronavirus pandemic which has touched so many lives and caused far-reaching economic hardship. But I am confident in the ability of our partnership to make the case for doing things differently as we look forward, together, to a brighter future.

I'm also convinced that some of the biggest issues we face in our communities – improving air quality, investing in better public transport, supporting the switch to green vehicles, encouraging active travel and more sustainable employment and housing growth – require a bigger picture view. That's why Transport for the South East is so important, bringing together local authorities, local enterprise partnerships and organisations like Network Rail and Highways England to plan for the future we have chosen.

This strategy was published in draft in October 2019 and since then we have carried out an extensive programme of consultation. More than 3,000 responses were received as part of that process, providing valuable insight into the needs and priorities of people, businesses and other organisations across the South East and beyond.

Our challenge now is to use this strategy to develop something which has never before existed – an integrated, prioritised, deliverable, strategic transport investment programme for the South East which will enable us to achieve our collective vision.

If we get this right, the prize is huge – for government, for taxpayers, for businesses and for everyone who lives and works in the South East.

Cllr Keith Glazier
Chair, Transport for the South East

Executive Summary

Introduction

This document is the Transport Strategy for the South East. It has been prepared by Transport for the South East, the sub-national transport body for the South East of England (see **Figure i**), with the support of its 16 constituent local transport Authorities, 5 local enterprise partnerships, 46 district and borough councils and wider key stakeholders.

Transport for the South East's mission is to grow the South East's economy by delivering a safe, sustainable and integrated transport system that makes the South East more productive and competitive, improves the quality of life for all residents, and protects and enhances its natural and built environment. Its ambition is to transform the quality of transport and door-to-door journeys for the South East's residents, businesses and visitors.

In economic terms, we have identified the potential to grow the number of jobs in the region from 3.3 million today to 4.2 million and increase productivity from £183 billion to between £450 and £500 billion Gross Value Added a year by 2050. This is almost 500,000 more jobs and at least £50 billion more per year than without investing in the opportunities identified within the transport strategy.

The publication of this strategy in summer 2020 has coincided with the Covid-19 global pandemic. We recognise that changes to the way we live, work and do business as a result of coronavirus are likely to have an impact on travel behaviour and demand for travel. In the short term, these changes could go some way to helping to achieve the strategic priorities set out in this transport strategy but, given the level of modal shift required to achieve our vision for 2050, significant challenges are likely to remain that will require strategic intervention.

Further technical work will be undertaken to identify the potential short term impacts of the Covid-19 pandemic on travel behaviour, employment patterns and the economy in the South East. The outputs from this work will be fed into the five area and thematic studies, which will follow on from this transport strategy and feed into the forthcoming Strategic Investment Plan, will need to reflect on and take account of the potential impact of any changes to the economy and wider society. These changes may not be immediately apparent – and it may be some time before the 'new normal' establishes itself – but Transport for the South East remains committed to achieving our vision of a better, more productive and more sustainable South East and this strategy provides the framework to get there.

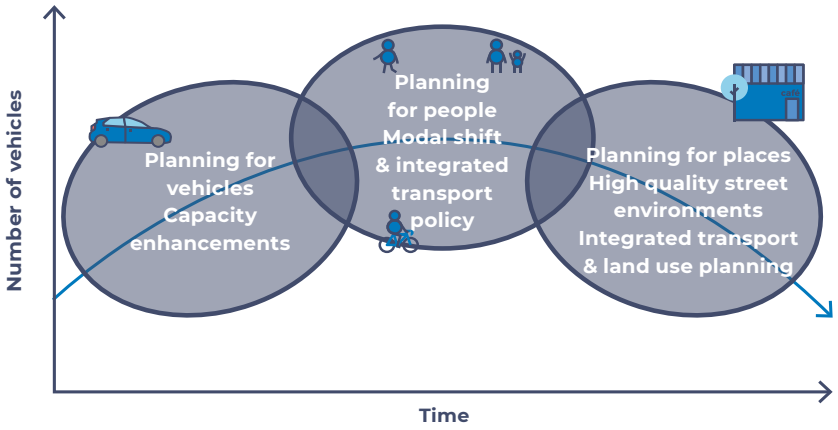
Figure i The Transport for the South East area

Overarching approach – planning for people and places

This transport strategy presents a shift away from traditional approaches of transport planning – one based on planning for a future based on recent trends and forecasts – to an approach of actively choosing a preferred future and setting out a plan to get there, together.

The traditional approach, one that is akin to '**planning for vehicles**' with extensive highway capacity enhancements for cars, is not sustainable in the longer term. Instead, there needs to be a transition from the current focus towards more '**planning for people**' and more '**planning for places**' (see **Figure ii**).

Figure ii Evolution of Transport Planning policy



The transport strategy has utilised modelling to understand how and where the transport network will see future strain. However, instead of simply expanding the network where strain will be most acute, the transport strategy sets out how this congestion could be alleviated by investing in attractive public transport alternatives and developing integrated land use planning policies to reduce the need to travel, adopting emerging transport technologies, and implementing more significant demand management policies (e.g. paying for the mobility consumed on a 'pay as you go' basis using pricing mechanisms and tariff structures across modes to incentivise those using all vehicle types to travel at less busy times or by more sustainable modes).

Currently, many parts of the South East are in the first stage of the process focussed on 'planning for vehicles', however, every place is different and there are exemplars that we can learn from here in the South East as well as, around the UK and internationally that are in the second and third stages. If we are to achieve out 2050 vision, every effort must be made to ensure the transition towards planning for people and planning for places.

Our Vision

Vision Statement

Transport for the South East's vision is:

The vision statement forms the basis of the strategic goals and priorities that underpin it. These goals and priorities help to translate the vision into more targeted and tangible actions.

By 2050, the South East of England will be a leading global region for net-zero carbon, sustainable economic growth where integrated transport, digital and energy networks have delivered a step change in connectivity and environmental quality.

A high-quality, reliable, safe and accessible transport network will offer seamless door-to-door journeys enabling our businesses to compete and trade more effectively in the global marketplace and giving our residents and visitors the highest quality of life.

Strategic Goals

The strategic goals, aligned to the pillars of sustainability, are:

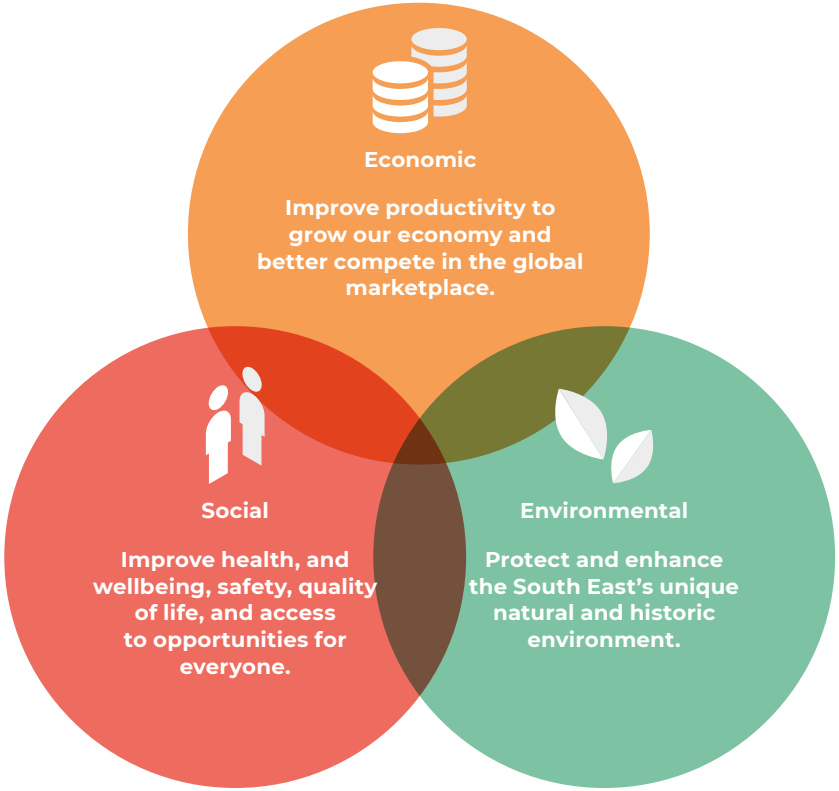
Economy: improve productivity and attract investment to grow our economy and better compete in the global marketplace.

Society: improve health, safety, wellbeing, quality of life, and access to opportunities for everyone.

Environment: protect and enhance the South East's unique natural and historic environment.

The interrelationship between these three pillars of sustainability is shown in **Figure iii**. This transport strategy aims to balance these three pillars to achieve overall sustainability, represented by the point where the three pillars interconnect at the centre of **Figure iii**.

Figure iii Strategic Goals



Strategic Priorities

Beneath each of the strategic goals lies a set of fifteen strategic priorities. These priorities narrow the scope of the goals to mechanisms and outcomes that will be most important to effectively deliver its vision. They are designed to be narrow enough to give clear direction but also broad enough to meet multiple goals.

The Strategic priorities are as follows:

Economic priorities:

- Better connectivity between our major economic hubs, international gateways (ports, airports and rail terminals) and their markets.
- More reliable journeys for people and goods travelling between the South East's major economic hubs and to and from international gateways.
- A transport network that is more resilient to incidents, extreme weather and the impacts of a changing climate.
- A more integrated approach to land use and transport planning that helps our partners across the South East meet future housing, employment and regeneration needs sustainably.
- A 'smart' transport network that uses digital technology to manage transport demand, encourage shared transport and make more efficient use of our roads and railways.

Social priorities:

- A network that promotes active travel and active lifestyles to improve our health and wellbeing.
- Improved air quality supported by initiatives to reduce congestion and encourage further shifts to public transport.
- An affordable, accessible transport network for all that promotes social inclusion and reduces barriers to employment, learning, social, leisure, physical and cultural activity.
- A seamless, integrated transport network with passengers at its heart, making it simpler and easier to plan and pay for journeys and to use and interchange between different forms of transport.
- A safely planned, delivered and operated transport network with no fatalities or serious injuries among transport users, workforce or the wider public.

Environmental priorities:

- A reduction in carbon emissions to net zero by 2050 at the latest, to minimise the contribution of transport and travel to climate change.
- A reduction in the need to travel, particularly by private car, to reduce the impact of transport on people and the environment.
- A transport network that protects and enhances our natural, built and historic environments.
- Use of the principle of 'biodiversity net gain' (i.e. development that leaves biodiversity in a better state than before) in all transport initiatives.
- Minimisation of transport's consumption of resources and energy.

The lists above show each of the strategic priorities grouped beneath the strategic goals. This is useful for organising the principles and makes it easier to understand broadly where these priorities are focussed. In reality, many of the strategic priorities support more than one of the goals.

Key principles for achieving our vision

Transport for the South East has developed a framework that applies a set of principles to identify strategic issues and opportunities in the South East, in order to help achieve the vision of the transport strategy.

Supporting economic growth, but not at any cost

Economic growth, if properly managed, can significantly improve quality of life and wellbeing. However, without careful management, unconstrained economic growth can have damaging consequences or side-effects. This transport strategy strongly supports sustainable economic growth which seeks to achieve a balance with social and environmental outcomes.

Achieving environmental sustainability

Transport for the South East strongly believes that the South East must reach a point where future economic growth is decoupled from damaging environmental consequences. Attractive, sustainable alternatives to the car and road freight must be provided, coupled with demand management policies. Land use planning and transport planning (along with planning for digital and power technologies) must also become more closely integrated.

Planning for successful places

This transport strategy envisages a South East where villages, towns and cities thrive as successful places, where people can live and work with the highest quality of life. Transport networks that simply aim to provide the most efficient means of moving along a corridor have the potential to have a wide range of damaging consequences, particularly socially and environmentally.

The best way to ensure that this occurs is to develop a transport network that considers both 'place' and 'link' functions. Some parts of the transport network are designed to fulfil 'link' roles while other parts contribute more to a sense of 'place' (or both).

Putting the user at the heart of the transport system

This transport strategy envisages a transport network – particularly a local public transport network – that places both passenger and freight users at the heart of it.

This approach seeks to understand why people make journeys and why they choose between different modes, routes, and times to travel. It also seeks to understand the whole-journey experience, from origin to destination rather than just a part of the whole journey.

This principle highlights the need for much better integration between modes. This is not just limited to physical interchanges (which are undoubtedly needed), but also integration in timetables, ticketing and fares, and information sharing.

Planning Regionally for the Short, Medium and Long Term

This transport strategy seeks to build on the excellent work of Transport for the South East's constituent authorities and other planning authorities in the South East. The transport strategy builds on transport plans set out by local transport authorities, local plans issued by local planning authorities, and the strategic economic plans and local industrial strategies created by local enterprise partnerships.

This transport strategy adopts a larger scale perspective that looks across the South East area focussing on cross-boundary journeys, corridors, major economic hubs, issues and opportunities. As far as possible, it also seeks to align with the ambitions of the Greater London Authority and Transport for London, and other neighbouring sub-national transport bodies.

This transport strategy also adopts a multi-modal approach. It views corridors as being served by different types and levels of infrastructure, from the Strategic Road Network to first and last mile, from intercity rail services through to rural bus operations. This transport strategy does not differentiate its approach to the future development of infrastructure based on how this infrastructure is currently managed. Transport for the South East views the transport system as a holistic system, while acknowledging key interdependencies and interfaces between different owners and actors.

Our Strategy

The strategy applies the **principles** above to six **journey types** to help identify key **challenges** and gives an initial indication of the types of measures that will be needed to address them. These challenges, and the **responses** to them, will be explored further through a programme of subsequent area and thematic studies. The outputs from these studies will be fed into a Strategic Investment Plan setting out our short, medium, and longer-term scheme priorities.

Radial journeys

Challenges

- Slow journey times to North East Kent, Maidstone and stations on the Reading – Waterloo line
- Poor A21/London to Hastings Line rail corridor connectivity
- Crowding on many rail routes, particularly on the Brighton Main Line and South Western Main Line, and particular issues with reliability and resilience on the Brighton Main Line
- Constraints on road corridors passing through urban areas (e.g. A3)

Responses

- Improve connectivity to Maidstone, North Kent, Reading – Waterloo and Hastings corridors
- Provide capacity on corridors such as the Brighton Main Line and South Western Main Line rail corridors
- Improve the resilience of the Strategic Road Network
- Extend radial route public transport (e.g. Crossrail)
- Reduce human exposure to noise and poor air quality on radial corridors

Orbital and coastal journeys

Challenges

- M25 congestion
- Few long-distance orbital rail services
- Multiple issues and challenges on M27/A27/A259/Coastway Line rail corridor
- Connectivity gaps in mid Sussex/Gatwick area
- Constraints on road corridors that pass through urban areas

Responses

- Holistic demand management initiatives that address road congestion while avoiding displacement effects from one part of the network to another
- Electrification and bi-mode rolling stock on orbital rail routes
- Enhancements where orbital rail routes cross radial rail routes
- Reinstate cross country services to the east of Guildford
- Build consensus on a way forward for M27/A27/A259 corridor
- Reduce people's exposure to major orbital roads

Inter-urban journeys

Challenges

- Some routes fall below standard
- Bus services face competition and congestion from car trips and reduced financial support
- Gaps in rail routes on inter-urban corridors
- Road safety hotspots

Responses

- Support schemes proposed and prioritised locally for government's National Roads Fund for the Roads Investment Plan (2020 – 2025), Large Local Major Schemes, and for the Major Road Network
- Increase support for inter-urban bus services
- Deliver better inter-urban rail connectivity

Local journeys

Challenges

- Conflicts between different road user types
- Poor air quality in some urban areas and along some corridors
- Poor integration in some areas
- Pressure on bus services, particularly in rural areas
- Affordability of public transport
- Lack of alternatives to the car in rural areas

Responses

- Invest in infrastructure and subsidies for high quality public transport
- Improve air quality
- Prioritise vulnerable users, especially pedestrians and cyclists, over motorists
- Develop better integrated transport hubs
- Improve the management of the supply and cost of car parking in urban areas
- Advocate for a real-terms reduction in public transport fares

International gateways and freight journeys

Challenges

- The potential impact on surface transport networks from the proposed expansion of Heathrow Airport
- Access to Port of Dover
- Access to Port of Southampton (and proposed expansion)
- Dartford Crossing congestion
- Rail freight mode share is relatively low
- Freight disrupted by congestion on many strategic road corridors
- A shortage of lorry parking and driver welfare facilities
- Difficulties decarbonising heavy goods vehicles
- The UK leaving the European Union (i.e. "Brexit")

Responses

- Further investment in improved public transport access to Heathrow
- Improved road and rail access to international ports
- Lower Thames Crossing
- Demand management policies to improve the efficiency of the transport network for road freight and to invest in sustainable alternatives
- Rail freight schemes
- New technologies
- Develop a Freight Strategy and Action Plan

Future journeys

Challenges

- Gaps in electric and digital infrastructure
- Risk that some parts of the South East will be 'left behind'
- Risk that new technologies may undermine walking, cycling and public transport
- Risk that new technologies may lead to further fragmentation
- Alternative fuel vehicles will not solve congestion

Responses

- Future proof electric and digital infrastructure (standards, etc)
- Incorporate 'mobility as a service' into public transport networks
- Encourage consistency in roll out of smart ticketing systems
- Develop a Future Mobility Strategy for the South East

Implementation

Priorities for investment

In the course of developing the strategy, a wide range of partners and stakeholders have been asked for their priorities for schemes and interventions across the South East. The priorities for interventions and suggested timescales identified by partners and stakeholders are as follows:

- Changing traffic flow patterns of the road network means there will always be a need for localised **highway schemes** to address issues that will continue to arise. New roads, improvements or extensions of existing ones should be prioritised in the short term but become a lower priority in the longer term. Highways schemes should target port access, major development opportunities, and deprived communities.
- **Railway schemes** are a high priority across all timelines – Brighton Main Line upgrades are prioritised for the short term, while new Crossrail lines are a longer-term goal.
- **Interchanges** are a high priority across all timelines where these facilitate multi modal journeys and create opportunities for accessible development.
- **Urban transit schemes** (e.g. Bus Rapid Transit and Light Rail Transit schemes, where appropriate for the urban areas they serve) are high priority and generally medium to long-term.
- **Public transport access to airports** is a high priority and, in the case of Heathrow Airport, must be delivered alongside any airport expansion.
- **Road and public transport access to ports** is also high priority and improvements are prioritised for delivery in the short-term.
- **Technology and innovation in transport technology** – vehicle, fuel and digital technologies – is supported, however the widespread roll-out of some beneficial technologies may only be realised in the medium to long-term.
- **Planning policy interventions** are relatively high priority and short-term.
- **More significant demand management policy interventions** are a longer-term goal.

Funding and financing

Funding sources and financing arrangements are an important consideration in the development of an implementation plan for schemes and interventions identified in the transport strategy.

A Funding and Financing Report has been developed that explores potential funding mechanisms for schemes and interventions. Multiple sources of funding and financing will be required to deliver the transport strategy.

Public finance is likely to remain the key source of funding for highway and railway infrastructure in the near future. Looking further ahead, in order to manage demand and invest in sustainable transport alternatives, new funding models will need to be pursued. This could include funding models, such as hypothecated transport charging schemes, as a means of both managing demand in a 'pay as you go' model or as part of a 'mobility as a service' package.

Monitoring and evaluation

A mechanism for monitoring delivery of prioritised interventions, as well as evaluating outcomes related to the strategic goals and priorities, will be developed as part of the area studies.

Governance

Transport for the South East has put in place governance arrangements that will enable the development, oversight, and delivery of the transport strategy.

Powers and Functions

Transport for the South East proposes to become a statutory sub-national transport body and take on the 'general functions' of a sub-national transport body, as set out in legislation.

There are also a number of additional powers being sought relating to rail planning, highway investment programmes and construction, capital grants for public transport, bus provision, smart and integrated ticketing, and Clean Air Zones.

The powers which are additional to the general functions relating to sub-national transport bodies will be requested in a way that means they will operate concurrently and with the consent of the constituent authorities.

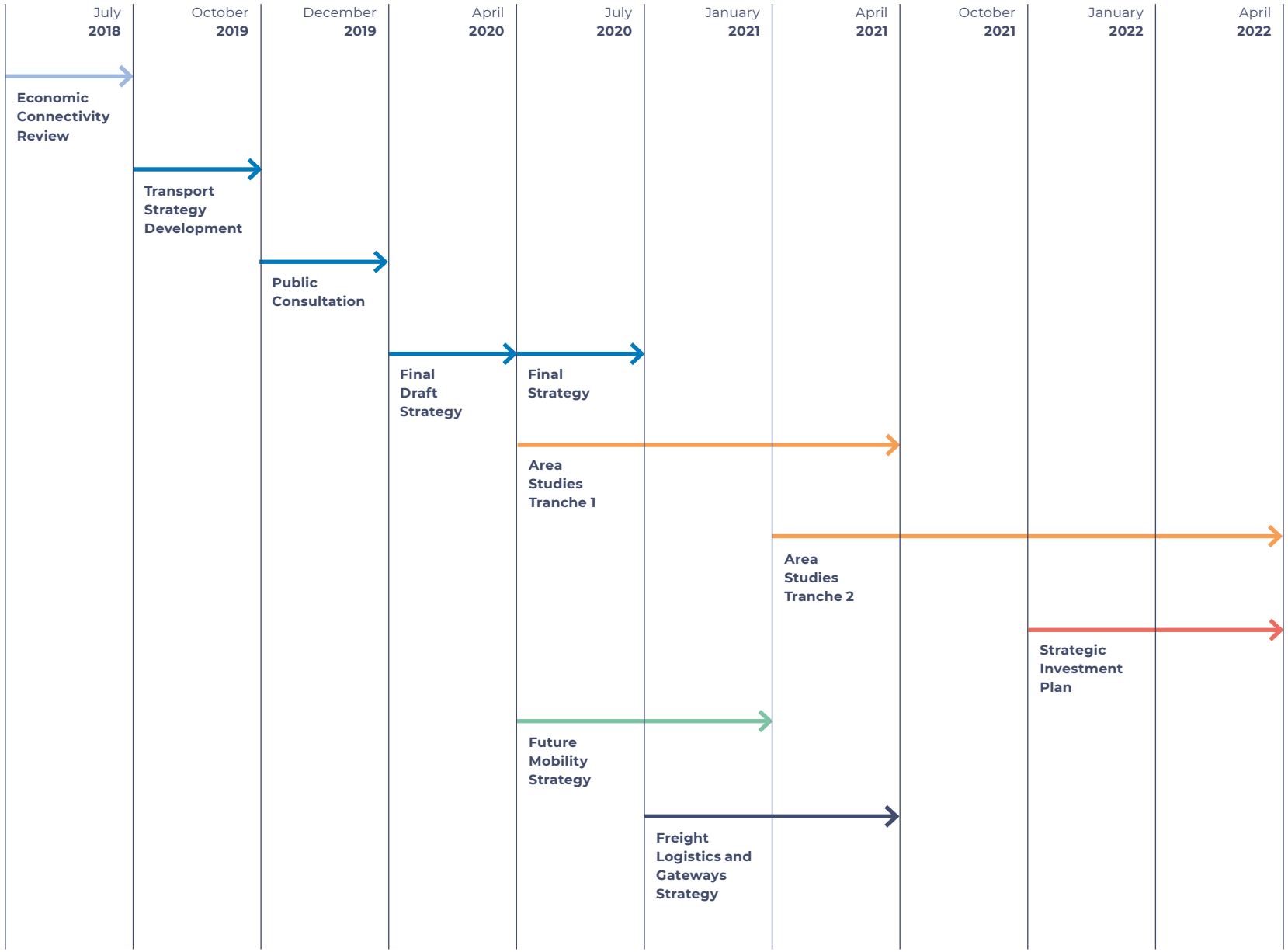
The proposal for general and additional powers were consulted upon between 7 May 2019 and 31 July 2019, concurrently to the development of the draft transport strategy.

Next steps

The route map for the next stages of the development of the transport strategy, including further studies to inform the development of the Strategic Investment Plan, is shown in **Figure iv**.

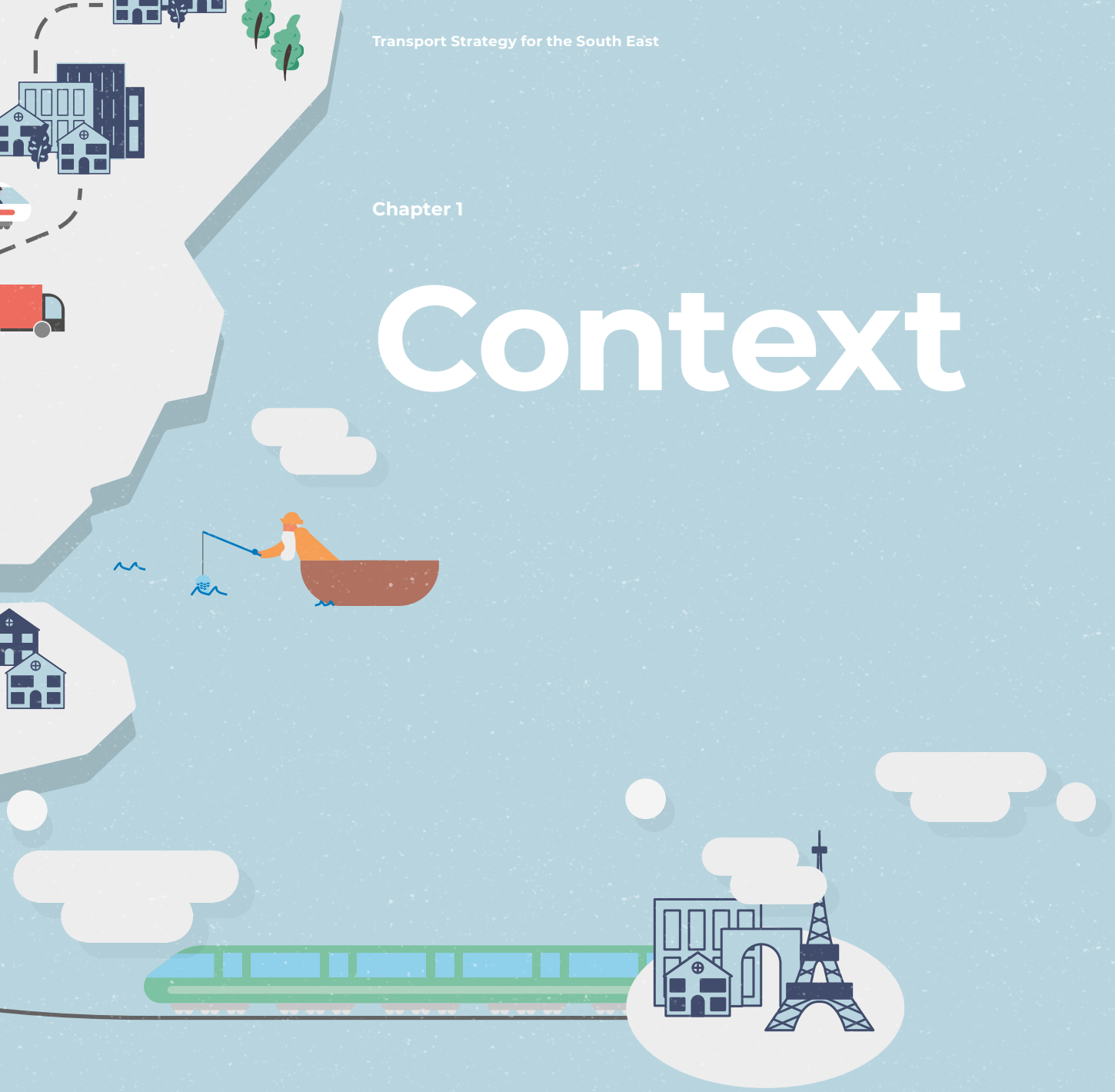
Five area studies will be undertaken to identify the measures that will be needed to implement this transport strategy and achieve its vision. These studies will identify the specific schemes and policy initiatives that will be required in different parts of the Transport for the South East area. They will include an assessment of the potential impact of these measures in reducing carbon emissions and the potential short-term impacts of the Covid-19 pandemic on travel behaviour, employments pattern and the economy in the South East. In addition, two thematic studies will be undertaken to identify the specific role of these two areas in achieving the vision: one on freight and international gateways, and a second on future mobility. The outputs from these area and thematic studies will be fed into a Strategic Investment Plan setting out our short, medium, and longer-term scheme priorities.

Figure iv Transport Strategy Route Map



Chapter 1

Context



A Transport Strategy for South East England

Introduction

1.1 This document is the Transport Strategy for South East England[1]. It has been prepared by Transport for the South East, the sub-national transport body for the South East of England, with the support of its 16 constituent local transport authorities, 5 local enterprise partnerships, 46 district and borough councils and wider key stakeholders.

1.2 The publication of this strategy, in summer 2020, has coincided with the Covid-19 global pandemic. It is recognised that changes to the way we live, work and do business, as a result of coronavirus, are likely to have an impact on travel behaviour and demand for travel. In the short term, these changes could go some way to helping to achieve the strategic priorities set out in this transport strategy but, given the level of modal shift required to achieve our vision for 2050, significant challenges are likely to remain that will require strategic intervention.

1.3 Further technical work will be undertaken to identify the potential short term impacts of the Covid-19 pandemic on travel behaviour, employment patterns and the economy in the South East. The outputs from this work will be fed into the area and thematic studies that will follow on from this transport strategy. It may be some time before the 'new normal' establishes itself – but Transport for the South East remains committed to achieving our vision of a better, more productive and more sustainable South East. This Strategy provides the framework to get there.

1.4 This transport strategy is supported by a significant body of evidence, much of which is published alongside this document. These documents include:

- Draft Transport Strategy for the South East: Consultation Report
- Strategic Policy Context;
- The Relationship between the South East and London;
- Potential Impacts of Brexit;
- Scenario Forecasting Summary Report;
- Scenario Forecasting Technical Report;
- Funding and Financing Options;
- Priorities for Investment Report
- Integrated Sustainability Appraisal;
- Logistics and Gateway Review;
- Smart and Integrated Ticketing Options Study; and
- Future of Mobility Study Report.

1.5 Transport for the South East's mission is to grow the South East's economy by delivering a safe, sustainable, and integrated transport system that makes the South East area more productive and competitive, improves the quality of life for all residents, and protects and enhances its natural and built environment. Its ambition is to transform the quality of transport and door-to-door journeys for the South East's residents, businesses and visitors.

[1] The authorities represented by Transport for the South East are outlined in Section 2 (**Paragraph 2.5**). It should be noted that this definition of South East England excludes Buckinghamshire, Milton Keynes, and Oxfordshire (which are often included in the statistical region "South East").

[2] The legislation governing Sub-national Transport Bodies is set out in the Cities and Local Government Devolution Act (2016), which amended the Local Transport Act (2008).

1.6 Transport for the South East aspires to be a positive agent of change. It seeks to amplify and enhance the excellent work of its constituent authorities, local enterprise partnerships, transport operators and stakeholders in its geography. It embraces new ways of doing things and seeks a more integrated approach to policy development. It aims to present a coherent, regional vision and set of priorities to central government, investors, operators, businesses, residents and other key influencers.

The purpose of this transport strategy

1.7 One of the key roles of a sub-national transport body, as set out in the Local Transport Act 2008 (as amended)[2], is to outline how it will deliver sustainable economic growth across the area it serves, whilst taking account of the social and environmental impacts of the proposals outlined in the strategy. This transport strategy represents a major step in the process of determining which policies, initiatives and schemes should be priorities for delivering sustainable growth across the South East area.

1.8 This transport strategy outlines a shared vision for the South East. It expands this vision into three strategic goals that represent the three core pillars of sustainable development – economy, environment and society – and it then describes the priorities and initiatives that will help achieve its vision. This will help guide future policy development and investment decisions in the short, medium, and long term. This transport strategy will be followed by five area studies that will identify the interventions needed to deliver the strategy. Further details about the area studies are provided in Chapter 5.

This is our Transport Strategy for the South East – speaking with one voice to improve transport, travel, and mobility for everybody in our region.

How this transport strategy was developed

Working in partnership locally, regionally, and nationally

1.9 Transport for the South East started its mission to create a common vision for the South East in 2017 by establishing robust governance procedures and regular channels of communication with its partners and key stakeholders. A diagram showing the relationship between Transport for the South East and its key partners is shown in **Figure 1.1**. Key in this regard has been the involvement of the Transport Forum which consists of representatives from businesses, transport operators, borough and district councils, local economic partnerships and user groups. Throughout 2019, Transport for the South East held a number of workshops and meetings with its partners and stakeholders at each step of the transport strategy's development. This engagement has been invaluable in identifying the key issues, challenges and opportunities that have been reflected in the development of the transport strategy.

1.10 The transport strategy has been designed to complement and build on national, regional, and local policies and strategies. A diagram showing the relationship between this document and the other key documents produced by government, national agencies, local transport authorities, local economic partnerships and district and borough authorities is shown in **Figure 1.2**. At the same time, this transport strategy seeks to influence the direction of these national, regional and local policies and strategies as many of them will be critical in ensuring the vision set out in this strategy will be achieved.

Building on the Economic Connectivity Review

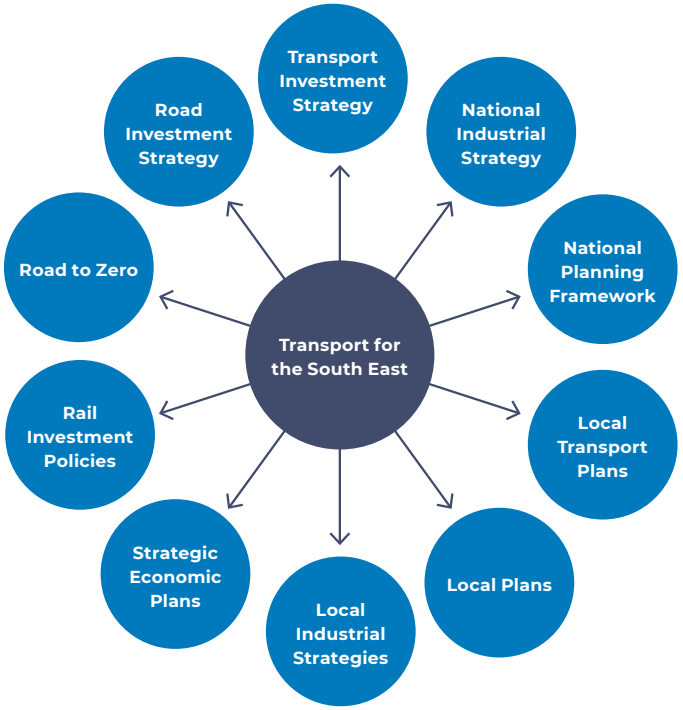
1.11 This transport strategy builds upon the evidence and analysis conducted in the Economic Connectivity Review for the South East. This study provided a detailed analysis of the underlying socioeconomic conditions in the South East. It identified 22 key corridors where the evidence suggests economic investment in transport infrastructure should be focussed to generate maximum future return. The analysis in the review, and the information which it provided, has been carried forward into this transport strategy.

1.12 The Economic Connectivity Review highlighted the potential of the South East to grow its economy to a value of approximately £500 billion in Gross Value Added terms[3] (from a current day value of £183 billion). It should be stressed that this potential represents a theoretical outcome based on unconstrained growth with minimal environmental constraints.

[3] Transport for the South East / Steer "Economic Connectivity Review" (July 2018), page 2, https://transportforthesoutheast.org.uk/transport-strategy-draft/ecr/, accessed August 2019.

Figure 1.1 Relationship between Transport for the South East, its partners, and its stakeholders

Figure 1.2 Relationship of this transport strategy with the wider policy and planning framework



Building on the evidence base for multi-modal corridors

1.13 This transport strategy is built upon a diverse evidence base of economic, social, environmental and transport network data. This data has been collated, interpreted and analysed from a wide range of sources and is presented in the documents listed in **paragraph 1.4**, which are published alongside the transport strategy.

1.14 The key areas explored in the evidence base are:

- corridors that are of strategic importance in the South East;
- places or major economic hubs where large amounts of future growth will be concentrated;
- places and/or supporting transport networks that are underperforming and constraining economic growth;
- modelling of possible future scenarios and their impacts on transport and travel; and
- the relationship between London and the South East.

1.15 Ultimately, the evidence base provides the analytical foundation of this strategy and ensures that the direction promoted in this document is supported by credible and appropriately referenced evidence.

1.16 Since the Economic Connectivity Review was published, the local economic partnerships have been developing their local industrial strategies which have involved an in-depth examination of the economy of the Transport for the South East area. For the next stage of the transport strategy development, five area studies will be commissioned that will examine the key challenges and opportunities of groups of corridors in the South East area. These studies will identify a prioritised programme of interventions to feed into a Strategic Investment Plan for the South East and will take account of the latest economic analysis set out in the local industrial strategies.

Moving away from 'predict and provide'

1.17 Traditionally, transport planning has used a 'predict and provide' approach to justify the need for future investment. This approach involves using existing trends to forecast future demand and congestion on the transport network to make the case for the investment needed to alleviate that congestion.

1.18 In recent years, however, there has been a significant shift in thinking away from the 'predict and provide' approach. There is substantial evidence to suggest that providing additional road capacity and addressing bottlenecks in the highway network has the effect of generating additional demand for the road network, thus eroding or even eliminating any expected reductions in traffic congestion[4]. Furthermore, this approach, if followed in an unconstrained fashion, risks promoting urban sprawl, high dependency on car use, and significant degradation of the natural environment. In the long run, 'predict and provide' risks creating a transport network that is less efficient and damaging for the local communities and environment it passes through.

1.19 This transport strategy involves a shift towards a 'decide and provide' approach to transport provision. This means actively choosing a preferred future, with preferred transport outcomes as opposed to responding to existing trends and forecasts.

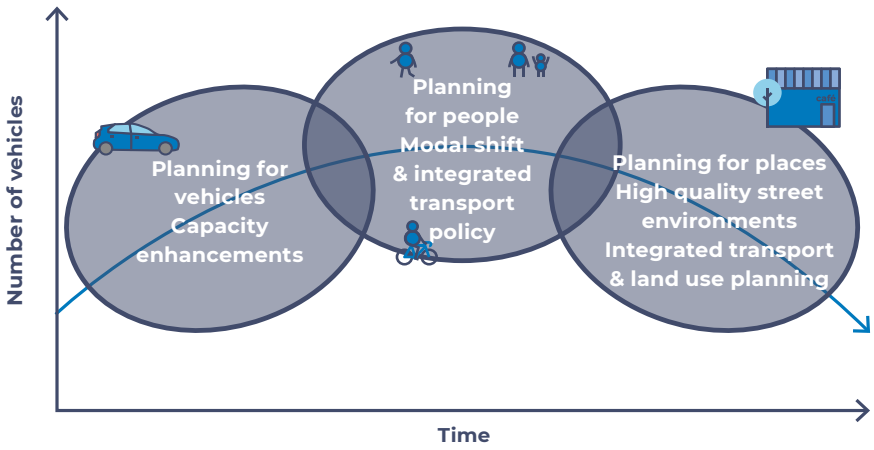
1.20 The transport strategy has utilised future demand modelling to understand how and where the transport network will see significant future strain. However, instead of simply expanding the network where strain will be most acute, the transport strategy sets out how this congestion could be alleviated through investing in public transport alternatives, developing integrated land use planning policies, adopting emerging transport technologies, and adopting demand management policies. The latter would involve users paying for more of their mobility they consume on a 'pay as you go' basis with the potential to better manage demand across the network – using pricing mechanism across all vehicular modes, including by car, van and heavy goods vehicles to incentivise travel at less busy times or by more sustainable modes.

[4] Lyons, G. and Davidson, C. "Guidance for transport planning and policymaking in the face of an uncertain future" (June 2016), Transportation Research Part A: Policy and Practice, Volume 88, June 2016, Pages 104-116.

[5] Jones, P. "Urban Mobility: Preparing for the Future, Learning from the Past" (2019), page 9, https://discovery.ucl.ac.uk/id/eprint/10058850/, accessed August 2019.

1.21 This proactive approach to transport planning will enable choices to be made about how the transport network will look in the future. For example, it will signal a shift towards making urban areas more 'people friendly' by giving the car less precedence and by providing more space for sustainable transport modes. It will also encourage investment in more sustainable modes of transport, including the rail network and potential future greener technologies.

Figure 1.3 Evolution of Transport Planning policy



Planning for people and places

1.22 As discussed above, traditional transport planning has tended to focus on ensuring that adequate capacity is provided to accommodate future forecast demand. This approach is akin to 'planning for vehicles.' This approach is not sustainable in the longer term. Instead, there should be a shift from the current focus on 'planning for vehicles' towards 'planning for people' and, ultimately, 'planning for places.'

1.23 **Figure 1.3** shows the evolution of a transport policy process between the three different transport policy perspectives. It is based on an approach which has been developed by Professor Peter Jones of UCL through the CREATE EU Horizon 2020 and Civitas project[5], to help policy makers cut road congestion in cities by encouraging a switch from cars to sustainable modes of transport. However, it has a wider applicability to help guide transport and land use policy development at a regional scale.

1.24 Currently, much of the South East is in the first stage of the process focussed on 'planning for vehicles.' The second stage of this process illustrated in **Figure 1.3** – 'planning for people' – 'planning for people' – is focussed on putting at its heart the needs of many different users of the transport system including pedestrians, cyclists, public transport passengers, people with reduced mobility, freight operators and car, van and powered two-wheeler drivers. The approach seeks to achieve modal shift to ensure that forecast future demand can be managed while minimising any adverse impacts on society and the environment by encouraging greater use of more efficient and more sustainable transport modes.

1.25 The third stage – 'planning for places' – goes further by encouraging integrated transport and land use planning to deliver spatial planning policies that both encourage sustainable travel choices but also minimise the need to travel at all (or, at the very least, minimise the need to travel far). Although planning for people and places is already underway in some areas of the South East, there needs to be a shift in emphasis towards these approaches, as soon as possible.

1.26 Planning for vehicles may well continue in the short term and even in the longer term there will be a continued need for some targeted road schemes that will improve highway capacity to address local congestion hot spots and enable bus priority measures to be introduced. Planning for people is a principle that is embedded in many of the Local Transport Plans administered by the local transport authorities. Whilst there are a number of examples where good progress has been made, more will need be done to ensure that the needs of transport users are put at the heart of the transport system.

1.27 Planning for places requires effective and close integration of transport planning with spatial planning policy across the South East. Whilst this is likely to be challenging, it will be essential to ensure a lower level of additional travel demand is generated by new developments. Planning for places, which requires integration with long term planning policy, may be a longer-term goal but every effort must be made to start the process of moving towards this approach as soon as possible.

1.28 Updates to the current system for appraising transport schemes will be required to ensure it reflects this shift in emphasis, enabling their wider societal and environmental benefits to be included in the decision-making process.

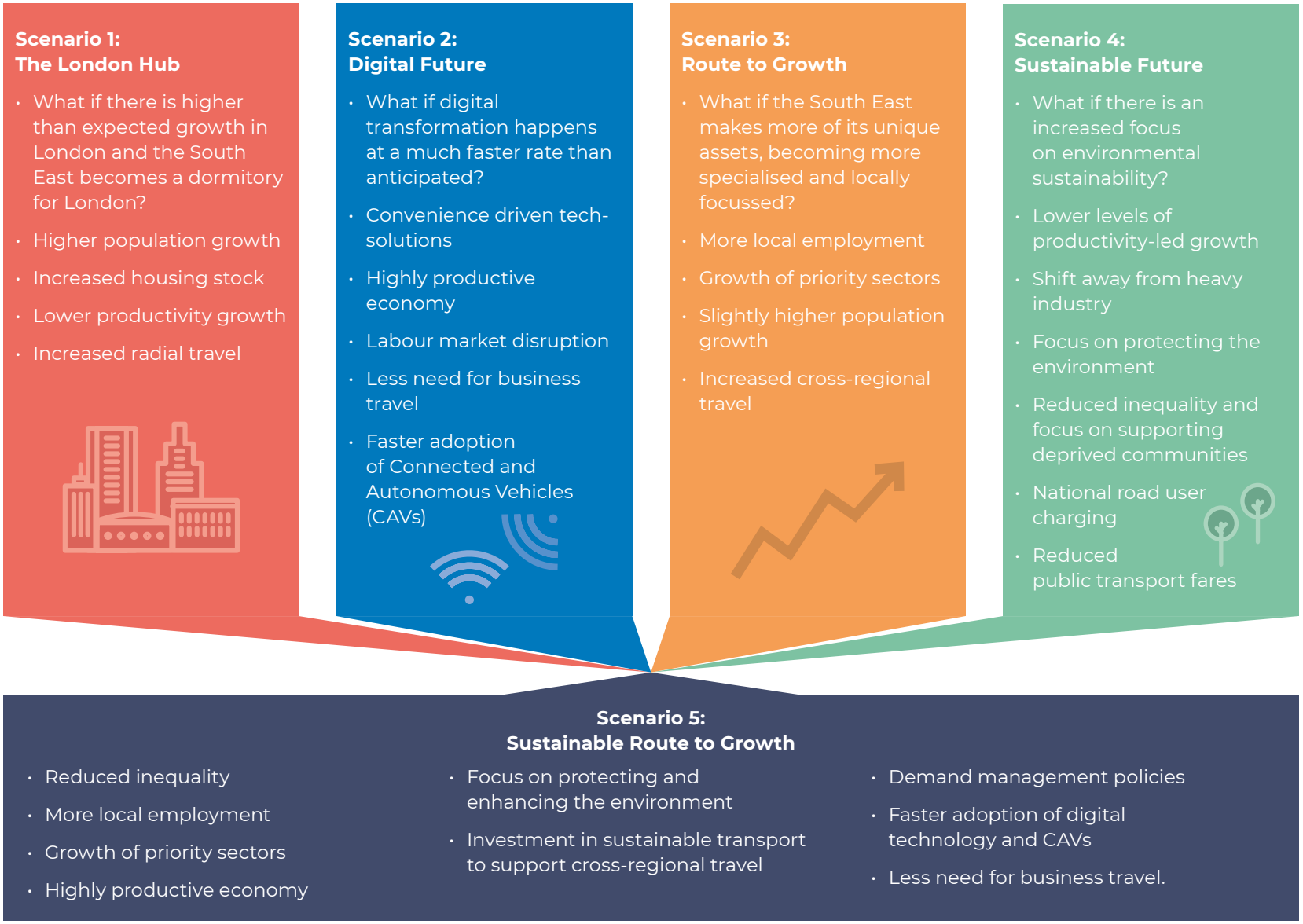
Developing scenarios for different versions of the future in 2050

1.29 The Economic Connectivity Review presented a projection for the economic potential for the South East. However, this was a theoretical 'maximum' that assumes minimal environmental constraints and is likely to result in unacceptable levels of environmental degradation. So, in order to develop a credible and more desirable vision of the future, Transport for the South East explored how different political, economic, social, technological and environmental trends might evolve to create different versions of the future in 2050. This was achieved by exploring how four future scenarios might affect the development of the South East's economy, population and transport outcomes. Further details about the scenario forecasting work undertaken in support of the development of this transport strategy is provided in the "Scenario Forecasting Summary Report" and "Scenario Forecasting Technical Report"[6]. The four scenarios for 2050 were developed by combining 'axes of uncertainty', which describe the plausible outcomes of uncertain trends. These trends included the rate of adoption of emerging technology, changes in attitudes towards the environment, and the development of target business and industrial sectors in the economy. Each scenario was modelled using a land use and transport model. The outcomes of modelling each scenario were compared to a 'central case', which was developed by modelling the impacts of the Department for Transport's National Trip End Model on the South East's economy and transport networks. A description of the four scenarios that were developed and tested is provided in **Figure 1.4**. The key outputs generated by these scenarios are shown in **Table 1.1**.

1.30 The outputs of the modelling derived from the four scenarios were presented to a wide range of partners and key stakeholders. These stakeholders were asked to provide their feedback on each of the scenarios and identify elements that they felt were most plausible and desirable. The elements that were deemed by Transport for the South East's partners and stakeholders to be most desirable for the future were then drawn together to build a vision of a 'preferred future' – "A Sustainable Route to Growth".

[6] Transport for the South East "Scenario Forecasting Summary Report" and "Scenario Forecasting Technical Report" (both October 2019)

Figure 1.4 Summary of the scenarios developed for this transport strategy



1.31 The key features of the Sustainable Route to Growth scenario are:

- The South East is less dependent on London and has developed successful economic hubs within its own geography, which provide high-quality, high-skilled jobs for residents. This in turn creates a future where GVA per capita is significantly higher than it is today.
- The benefits of emerging technology have been harnessed in an equitable way to improve the accessibility of the South East area without undermining the integrity of its transport networks. This also has the effect of boosting economic growth while minimising transport's impact on the natural and built environment.
- Concern for the environment has led to the widespread adoption of sustainable policies and practices, including integrated land-use and transport planning, as well as targeted demand management measures including users paying for more of their mobility on a 'pay as you go' basis, with bus and rail fares having been reduced in real terms in the longer term. This will result in a shift away from the private car towards more sustainable travel modes. There is a reduced need to travel (or, at least, the need to travel far) and this ultimately delivers a cleaner, safer environment for residents.

1.32 As **Table 1.1** shows, the Sustainable Route to Growth outputs produce strong, regionally-led economic growth akin to the results yielded by the Route to Growth scenario but deliver this growth in a more environmentally sustainable manner, more aligned to the Sustainable Future scenario. This scenario delivers the second highest growth in GVA of all the scenarios (including the central case). The modelling of this scenario generated some results that run against the vision and objectives for this strategy. For example, some model runs indicated there could be a relative decline in walking and cycling. Further work will be undertaken as part of the development of the forthcoming area studies to ensure measures are identified that will mitigate these unwanted outcomes.

Table 1.1: Summary of Scenario Modelling Results

Scenario	GVA (2050)	GVA Growth	Trips (2050)	Trips Growth
Central Case (based on DfT forecasts)	£399bn	**118%**	23.9m	**15%**
The London Hub	£430bn	**136%**	26.6m	**28%**
Digital Future	£411bn	**125%**	24.2m	**16%**
Our Route to Growth	£481bn	**164%**	26.4m	**27%**
Sustainable Future	£404bn	**121%**	23.1m	**11%**
Sustainable Route to Growth	£458bn	**151%**	24.8m	**19%**

1.33 This process has allowed Transport for the South East to develop a vision for 2050 that is forward looking, that accommodates and reflects the views of stakeholders, and that delivers a desired future for the South East's businesses, residents and visitors[7]. Further information about the methodology that was used to develop these future scenarios and model their impacts is contained in the "Scenario Forecasting Technical Report".

1.34 Moving forward, the outputs from the modelling work will be used to guide the five area studies. Key modelling outputs on housing population, jobs, GVA, transport CO2 emissions, traffic and passenger flows for future years will be used to identify the interventions needed to ensure the preferred future will be delivered.

Prioritising initiatives

1.35 Transport for the South East worked with a wide group of stakeholders to identify their initial priorities for investment over the short, medium, and long term. The types of schemes that emerged as highest priority, that are best placed to deliver optimal outcomes (economic, social and environmental), and that best align with the Sustainable Route to Growth scenario are presented in this strategy. This work will be taken forward in subsequent area studies, which will identify specific schemes and interventions needed to deliver the transport strategy.

[7] Transport for the South East "Scenario Forecasting Technical Report" (October 2019).

Undertaking an Integrated Sustainability Appraisal

1.36 Alongside the development of the transport strategy, Transport for the South East commissioned Steer and WSP to prepare an Integrated Sustainability Appraisal. This document examined the potential impacts this transport strategy could have on a wide range of sustainable development indicators, including economic, social, and environmental aspects. These include, but are not limited to, health, equality of access to opportunities, and community safety. This document has been published alongside the transport strategy and was subject to public consultation in parallel with the transport strategy.

Holding a public consultation

1.37 A public consultation exercise was undertaken on this transport strategy over a thirteen-week period between October 2019 and January 2020. The purpose of the consultation was to seek the views of a wide range of stakeholders on the transport strategy. The aim was to ensure buy-in to the vision for the future set out in the transport strategy. The transport strategy, Integrated Sustainability Appraisal, and supporting evidence were made available to the public and all statutory consultees along with a consultation questionnaire. The consultation exercise was publicised online, in the press and on social media. The online information for the public consultation was supplemented by a series of engagement events arranged to serve different groups of stakeholders.

1.38 At the end of the consultation period, Transport for the South East produced a consultation report on the transport strategy that summarised an analysis of the responses[8].

The final transport strategy

1.39 Following consideration of all feedback, Transport for the South East revised the transport strategy and published a final version in summer 2020. The transport strategy will be complemented by five area studies which will identify and prioritise the specific interventions required across the South East. The outputs from these area studies will be fed into a Strategic Investment Plan setting out the short, medium, and longer-term scheme priorities. Transport for the South East will then shift focus towards implementation, which is described in more detail in Chapter 5.

[8] Transport for the South East "Draft Transport Strategy for the South East: Consultation report" (March 2020).

Conclusions

In this chapter we have set out the context to the Transport Strategy for the South East and described how we have worked with partners and stakeholders to develop this transport strategy. In the next chapter, the key characteristics of the South East area are highlighted and some of the challenges it currently faces are described. In addition, the national, regional and local policy frameworks that currently govern and influence transport and planning policy in the South East area are described.

Chapter 2

Our Area

Introduction

Introduction

2.1 The South East is a diverse area with different environmental, social and economic challenges and opportunities. These influence the way we travel and create their own transport challenges, while also influencing the potential for improvements to our connectivity and accessibility.

2.2 This chapter introduces the South East area[1] and summarises its characteristics, challenges and opportunities. It starts by describing the economic, social, and environmental characteristics of the South East area. It then explores the relationship between the South East and the rest of the United Kingdom, including London. It goes on to set out the policy context of this transport strategy and summarises the current transport corridors and patterns of movement in the South East area. This is followed by a description of the challenges facing the transport network, future opportunities, and conclusions to be considered in the strategy.

Introducing the Transport for the South East area

2.3 The area covered by Transport for the South East comprises the counties and unitary authorities that make up the south east corner of Great Britain. The South East area extends from the Thames Valley and the New Forest in the west to the white cliffs of Dover in the east and from the Isle of Wight up to the southern boundary of Greater London. It is home to approximately 7.5 million residents[2]. The most populated boroughs and districts in the South East (as defined by local authority population) are Brighton and Hove (289,000), Medway (276,000), Southampton (254,000) and Portsmouth (215,000). The largest built-up areas in the South East, which cut across borough and district boundaries, are South Hampshire (855,000), Brighton and Hove (just under 475,000) and Reading (318,000)[3]. A map showing the constituent authorities within the Transport for the South East area is provided in **Figure 2.1**.

2.4 The Transport for the South East area has several of the United Kingdom's largest international gateways including the Port of Dover, the Port of Southampton, Eurotunnel and Gatwick Airport. Heathrow Airport lies just on the boundary of the Transport for the South East area. A map showing the key population centres, international gateways and transport networks in the Transport for the South East area is provided in **Figure 2.2**.

[1] The authorities represented by Transport for the South East are outlined in Section 2 (**Paragraph 2.5**). It should be noted that this definition of South East England excludes Buckinghamshire, Milton Keynes, and Oxfordshire (which are often included in the statistical region "South East").

[2] Office for National Statistics "Population Estimates" (2016), https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates, accessed August 2019.

[3] Office for National Statistics, "2011 Census - Built-up areas" (2013) http://www.nomisweb.co.uk/articles/747.aspx, accessed June 2020. This data is less reliable than the Local Authority District population data and is therefore not used in the remainder of this document.

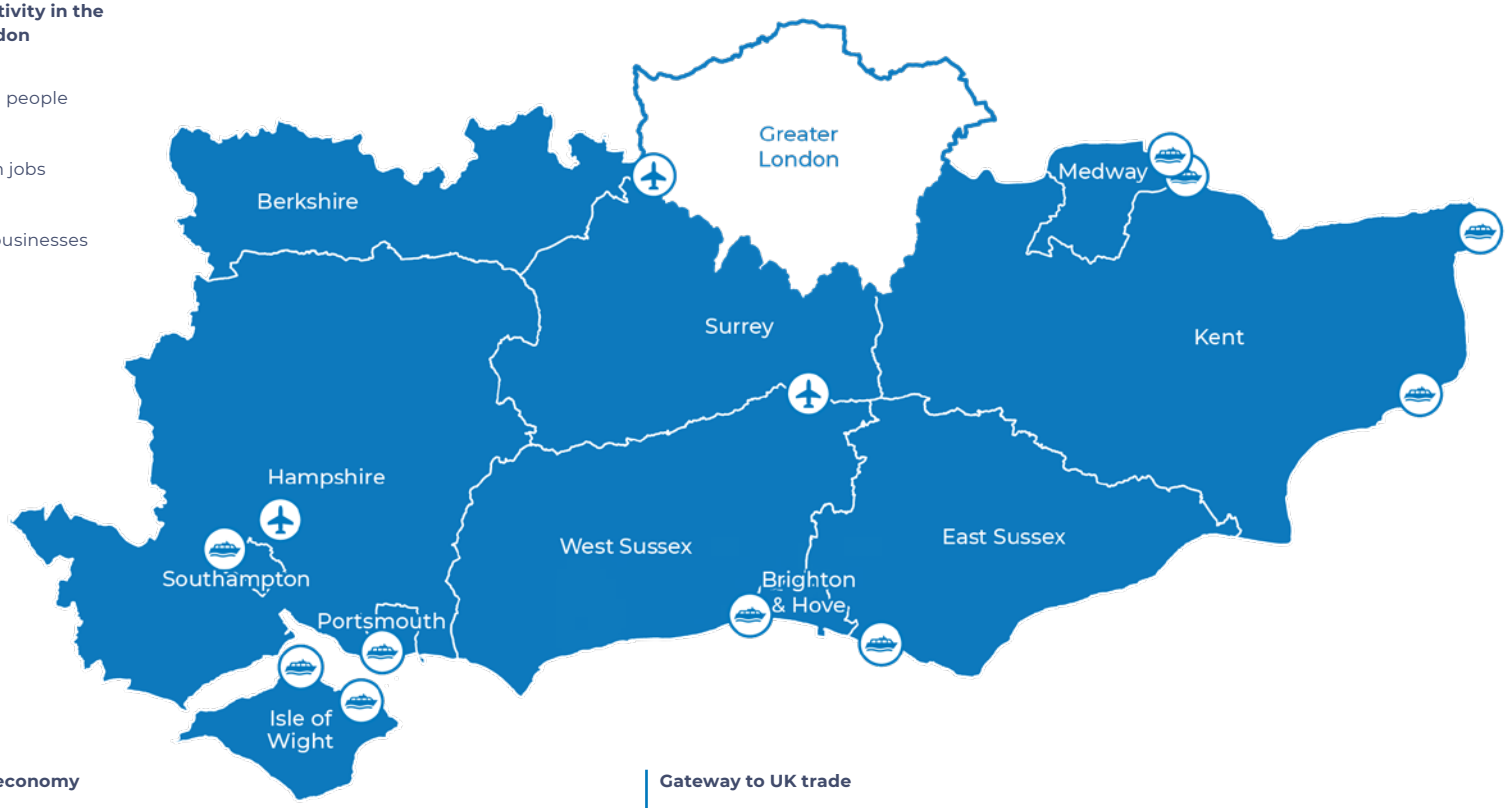
Figure 2.1 The Transport for the South East area

Highest productivity in the UK outside London

7.6 million people

4.3 million jobs

368,000 businesses



Driving the UK economy

A Gross Value Add (GVA) of £183 billion which is forecast to grow

Backing high growth sectors could deliver £450 billion GVA and an additional 474,000 jobs

Gateway to UK trade

Over 48 million air passengers – 16% of UK total

76 million tonnes of port freight – 16% of UK total

Figure 2.2 Key population centres, international gateways and transport corridors in the Transport for the South East area

2.5 The Transport for the South East area encompasses 16 local transport authorities, as outlined below.

- Six unitary authorities in Berkshire represented through the Berkshire Local Transport Body: Slough Borough Council; Royal Borough of Windsor and Maidenhead Council; Reading Borough Council; Bracknell Forest Borough Council; Wokingham Borough Council; and West Berkshire Council.
- Brighton & Hove City Council;
- East Sussex County Council;
- Hampshire County Council;
- Isle of Wight Council;
- Kent County Council;
- Medway Council;
- Portsmouth City Council;
- Southampton City Council;
- Surrey County Council; and
- West Sussex County Council.

2.6 Several of these authorities are county councils, which operate a two-tiered system of local government. In these areas local spatial planning policies are determined by borough and district councils.

2.7 There are also five local enterprise partnerships in the South East area, which lead economic planning in their respective areas:

- Berkshire Thames Valley;
- Coast to Capital;
- Enterprise M3;
- South East; and
- Solent.

2.8 The Transport for the South East area includes the South Downs and New Forest National Parks, which work to their own spatial planning policies and governance arrangements, as well as several protected landscapes, coastlines and built areas.

2.9 The remainder of this chapter describes the South East area's economic, social and environmental characteristics and challenges. It then sets out the broader policy framework underpinning the transport strategy and describes the key transport corridors and patterns in the South East area. This chapter also describes the South East area's relationship with the rest of the country (and London), and explores key issues and opportunities affecting its transport networks.

Key characteristics of the South East area

Economic characteristics and challenges

2.10 The South East is a powerful motor of the national economy. It adds £183 billion a year to the UK economy[4]. It is home to over 7.5 million people (9% of the UK total)[5], four million workers (13% of the UK workforce)[6], and 320,000 companies[7]. It is also home to national and world-leading universities (six in the UK Top 50 and world's top 350)[8] and research centres which support a wide range of disciplines and sectors. The key economic characteristics of the Transport for the South East area are shown in **Figure 2.1**.

2.11 The South East is a relatively prosperous region. It has the second highest GVA per capita of all the UK regions and nations (second only to London)[9]. The average employment rate is also relatively high at 77%, above the UK average of 74%[10]. However, there are significant disparities in wealth and deprivation across the South East area. Many coastal communities in particular contain areas with high levels of deprivation. Spending per head on transport infrastructure in the South East is lower than that experienced in other regions[11].

2.12 The Economic Connectivity Review, published by Transport for the South East in July 2018, provided an overarching view of the South East area's current economic geography, its economic potential up to 2050, and the role of strategic transport interventions in achieving this potential.

2.13 The review identified the role of strategic transport connectivity in enabling economic growth through:

- improving business to business connectivity;
- improving access to international gateways;
- growing labour market catchments;
- enabling development; and,
- supporting deprived communities.

2.14 The Economic Connectivity Review identified the key priority industrial sectors of the South East, which are shown in **Figure 2.3**. These are sectors in the South East that:

- have national and international competitive advantage;
- are knowledge-intensive;
- have identified relationships with higher education and research and innovation bodies; and
- are forecast to grow.

2.15 A significant level of housing and employment development is planned for the South East area, but this development is not distributed evenly across the South East area.

[4] Cambridge Econometrics "Local Economic Forecasting Model" (2017).

[5] Office for National Statistics "Population Estimates" (2016), https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates, accessed August 2019.

[6] Cambridge Econometrics "Local Economic Forecasting Model" (2017).

[7] Office for National Statistics "Enterprise/local units by Industry and GB Local Authority Districts (including UK total)" (2016), https://www.ons.gov.uk/business industryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivity sizeandlocation, accessed September 2019.

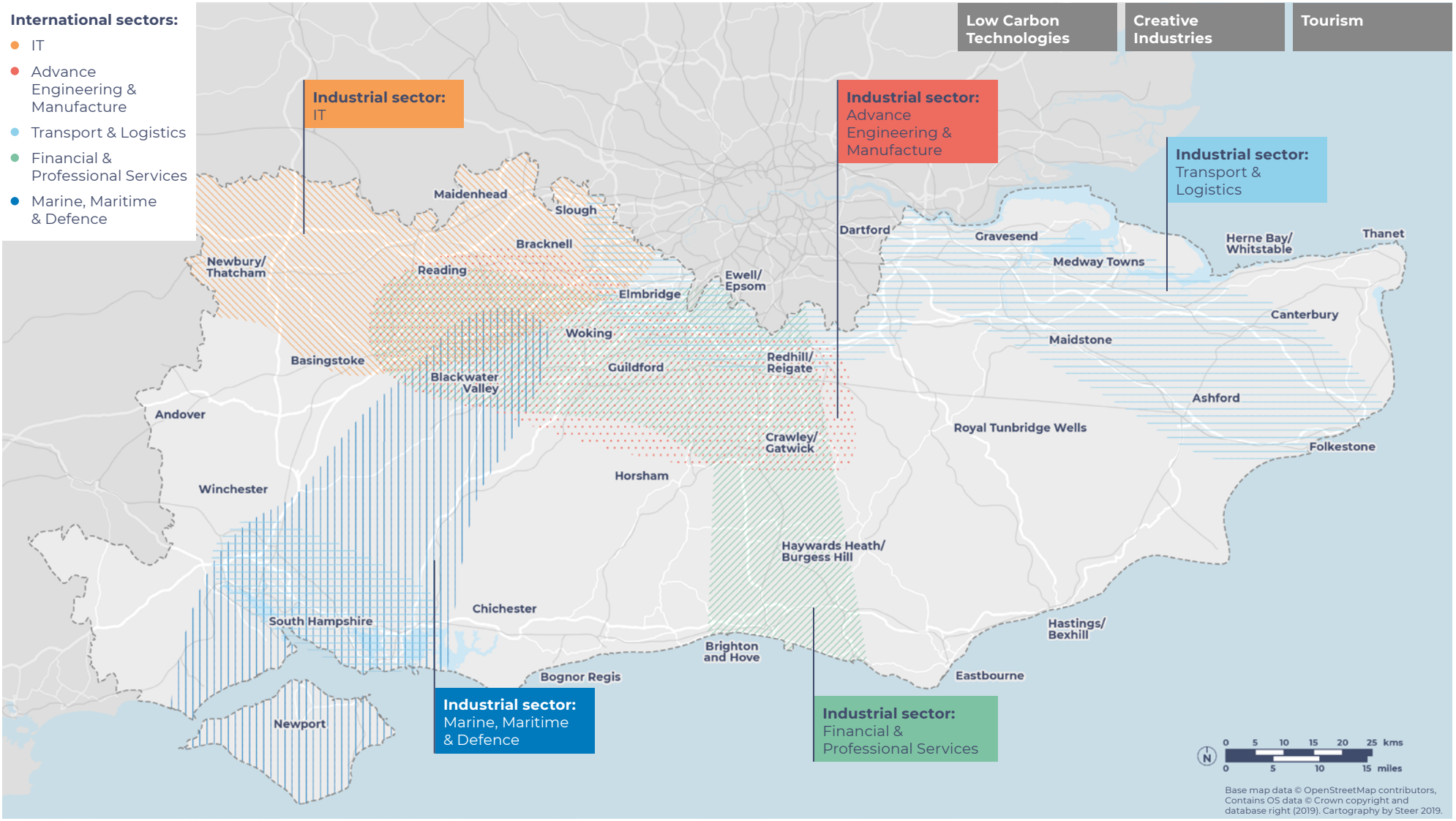
[8] UKUni "UK University Rankings" (2019), https://www.ukuni.net/uk-ranking/overall, https://www.timeshighereducation.com/world-university-rankings/2020/world-ranking, accessed August 2019

[9] Office for national Statistics "Regional economic activity by GVA" (2018) https://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueadded balanceduk/1998to2017, accessed August 2019.

[10] Office for National Statistics "Business Register and Employment Survey" (2016).

[11] HM Treasury "Country and Regional Analysis" (2018) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759560/Country_and_Regional_Analysis_November_2018_rvsd.pdf (Table B1.0), accessed May 2020.

Figure 2.3 Priority industrial sectors in the South East area



2.16 As shown in Figure 2.4, particularly high levels of housing development are planned for North Kent, the Thames Valley, and along the south coast. Employment development, on the other hand, will be more geographically concentrated than future housing development. As Figure 2.5 shows, future job growth will likely occur in the urban areas around Brighton and Hove, Southampton, Portsmouth, Gatwick Airport, and the Thames Valley. This presents a significant transport challenge as many people will be living and working in different places, which means the future transport network may need to provide for longer distance commuter trips within the South East area.

2.17 As part of the development of the five area studies, the economic data used in the Economic Connectivity Review will be reviewed and updated, including consideration of the evidence base that all the local enterprise partnerships have produced to inform their local industrial strategies. This will allow an updated set of economic priorities to be developed for each of the areas under study, demonstrating how this strategy and five area studies can help ensure that the TfSE area will maximise its contribution to UK productivity, and build on its distinctive strengths to economically position the area for the future.

Social characteristics and challenges

2.18 The social geography of the South East is varied. The South East area is home to some of the most prosperous and productive areas of the country, but also contains significant areas of deprivation. The overall distribution of deprivation in the South East relative to other areas of England is shown in Figure 2.6. This appears to show a relationship between poor connectivity and higher levels of deprivation. For example, some of the least deprived areas of the South East are found around Guildford, the Blackwater Valley, Woking and Bracknell. These areas are economically productive and benefit from good connectivity to London, where there is a concentration of highly paid jobs. In contrast, many coastal communities, which are less well connected to London and other key economic hubs, have significantly higher levels of deprivation than the England average.

2.19 While there appears to be a relationship between transport connectivity and prosperity, there are also some anomalies in the South East area. The areas around Medway and the Thames Estuary, for example, are relatively well connected to London yet have relatively high levels of deprivation. This may be due to characteristics of the local economies of these areas, which are still adjusting to structural changes in the national economy since deindustrialisation in the 1980s. It also may be because this high-level connectivity has only recently been unlocked by the launch of domestic high-speed rail services in 2009 and the impact of these services may not yet be showing in deprivation data. Either way, this example shows that, while transport connectivity is important for minimising the likelihood of deprivation, there are clearly other key factors which have a role to play. It should be noted that all the economic hubs in the South East area have some deprived areas, including those that are perceived to be relatively prosperous.

Environmental characteristics and challenges

2.20 The South East has a varied and highly valued natural environment. Significant parts of the South East area are designated as National Parks, Areas of Outstanding Natural Beauty and Sites of Special Scientific Interest. The South East area also has a long coastline. A map showing the location of key protected landscapes in the South East area is provided in Figure 2.7. The environmental assets of the South East help make the area an attractive place to live, work and visit, and they also make an important contribution to its economy. The future development of the South East area and its transport network will need to be managed to minimise any potential adverse impact and where possible enhance these natural assets.

[12] Office for National Statistics "UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2017" (2019) https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017, accessed August 2019.

[13] Department for Business, Energy and Industrial Strategy "UK Greenhouse Gas Emissions, Provisional Figures (2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790626/2018-provisional-emissions-statistics-report.pdf, accessed August 2019.

[14] Department for Transport "Decarbonising transport: setting the challenge" (2020), https://www.gov.uk/government/publications/creating-the-transport-decarbonisation-plan, accessed May 2020.

2.21 The South East area faces several significant environmental challenges in the future. As shown in **Figure 2.8**, there is a significant number of Air Quality Management Areas in place across the South East area. These areas have been established to improve air quality and reduce the harmful impact of Nitrogen Oxides (NOx), Sulphur Oxides (SOx), and particulates on human health and the natural environment. A number of the local authorities in the Transport for the South East area including Brighton and Hove City Council, the Royal Borough of Windsor and Maidenhead, Reading, Chichester District Council and Sevenoaks District Council, have Air Quality Action Plans in place to address the air quality issues in their areas. In addition, the Government has mandated a number of local authorities, including Southampton City Council and Portsmouth City Council, to produce Air Quality Action Plans. Transport – particularly road transport – is one of the largest contributors to poor air quality in the South East area. Transport therefore has a significant role to play in improving air quality.

2.22 Noise pollution is also a significant issue, particularly for communities located close to the Strategic Road Network. As **Figure 2.9** shows, noise pollution is particularly high on the busiest road corridors of the South East area, notably around the M25. This map also shows the Noise Important Areas which are 'hotspots' of transport noise from both road and rail identified by the Department for Environment, Food and Rural Affairs.

2.23 The South East also has a significant role to play in tackling climate change. Today, the South East accounts for 12% of the United Kingdom's greenhouse gas emissions[12]. In 2018, transport accounted for a third of the United Kingdom's greenhouse gas emissions[13]. Most of the South East's local authorities have declared 'climate emergencies' and there is evidence of increasing support from politicians and residents for transport policies and interventions that help mitigate climate change and protect and enhance the natural environment. A number have identified target dates by which they aim to achieve net zero carbon emissions, some with targets dates before 2050. In some instances, these target dates relate just to the buildings and services managed by the authority but in others they also relate to the geographical area under their jurisdiction.

2.24 The differing characteristics of the local authority areas within the Transport for the South East area means that the current levels of carbon emissions, their available carbon budgets and trajectories to net zero carbon emissions will vary. Some authorities have the ability and the ambition to move forward at a faster pace. In view of this, the strategic environmental priority relating to decarbonisation set out in this transport strategy is to reduce carbon emissions to net zero by 2050 at the latest. In March 2020 the government published 'Decarbonising transport: setting the challenge'[14] and is due to publish its Transport Decarbonisation Plan before the end of 2020. This strategic priority will be kept under review and will be updated as appropriate. An assessment will take place of the carbon reduction impact of the interventions that are identified as part of the five area studies. This will include:

- establishing a baseline for the existing level of carbon emissions from surface transport to, from and within the Transport for the South East area and area study geographies;
- enabling a trajectory towards a net zero position by 2050 to be identified;
- identifying the contribution of the interventions identified as part of the area studies; and
- assessing the residual requirement to achieve net zero position by 2050.

1.25 In conclusion, the South East's future transport strategy must seek to balance economic and social needs with the environmental constraints and challenges outlined above.

Figure 2.4 Housing growth forecast in the South East area

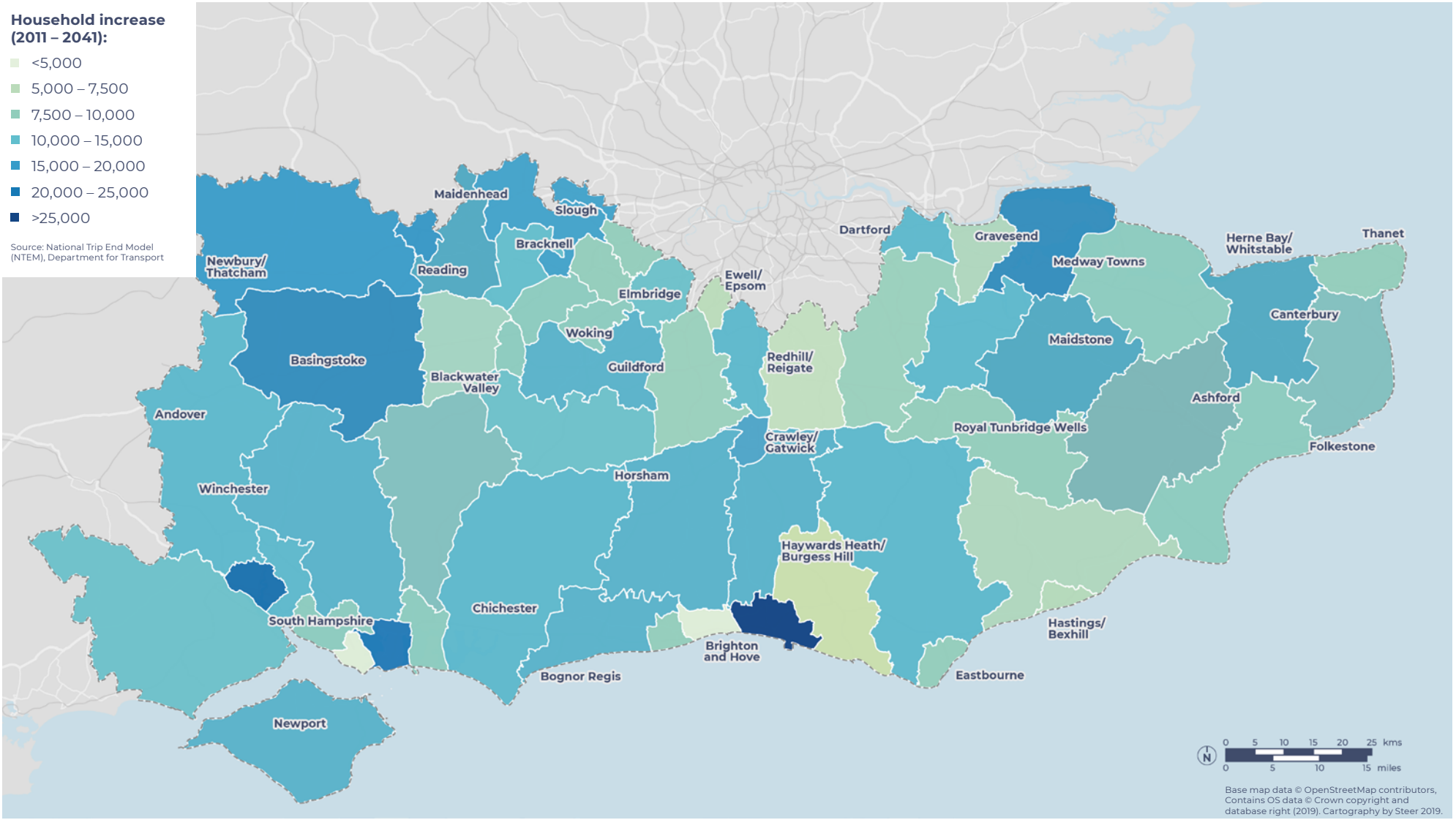


Figure 2.5 Employment growth forecast in the South East area

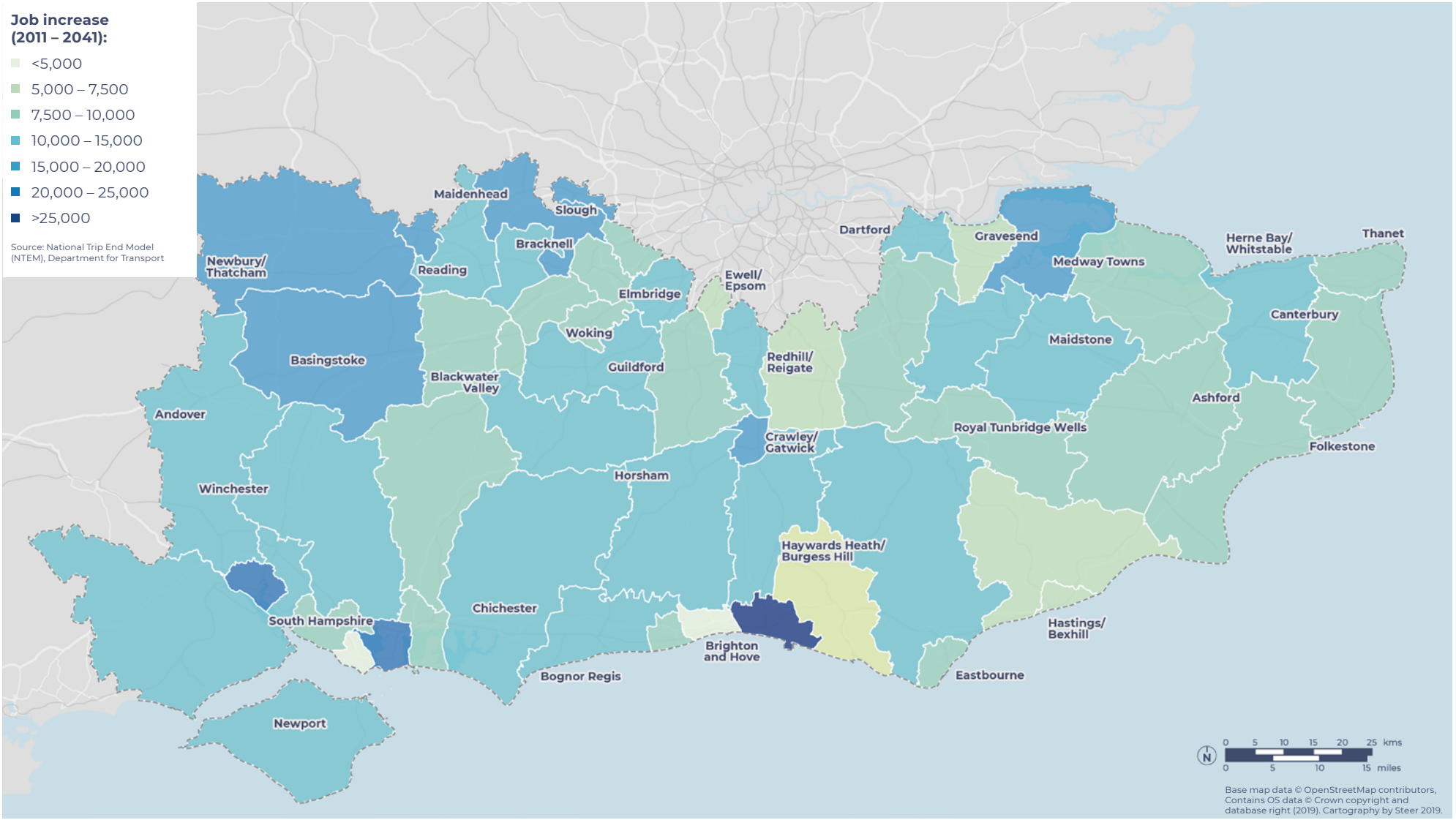


Figure 2.6 Deprived areas and journey times to London in the South East area

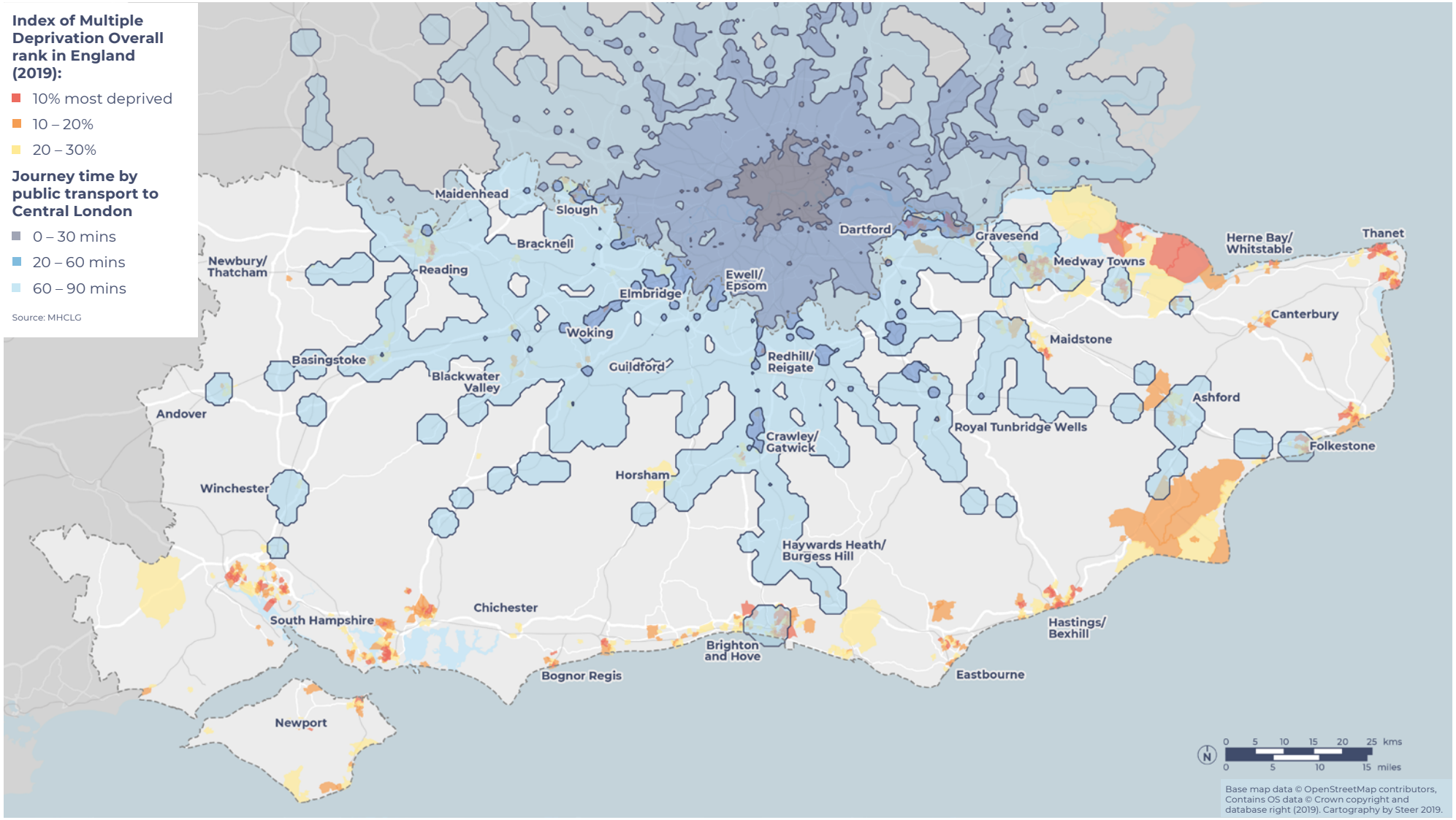


Figure 2.7 Protected landscapes in the South East area

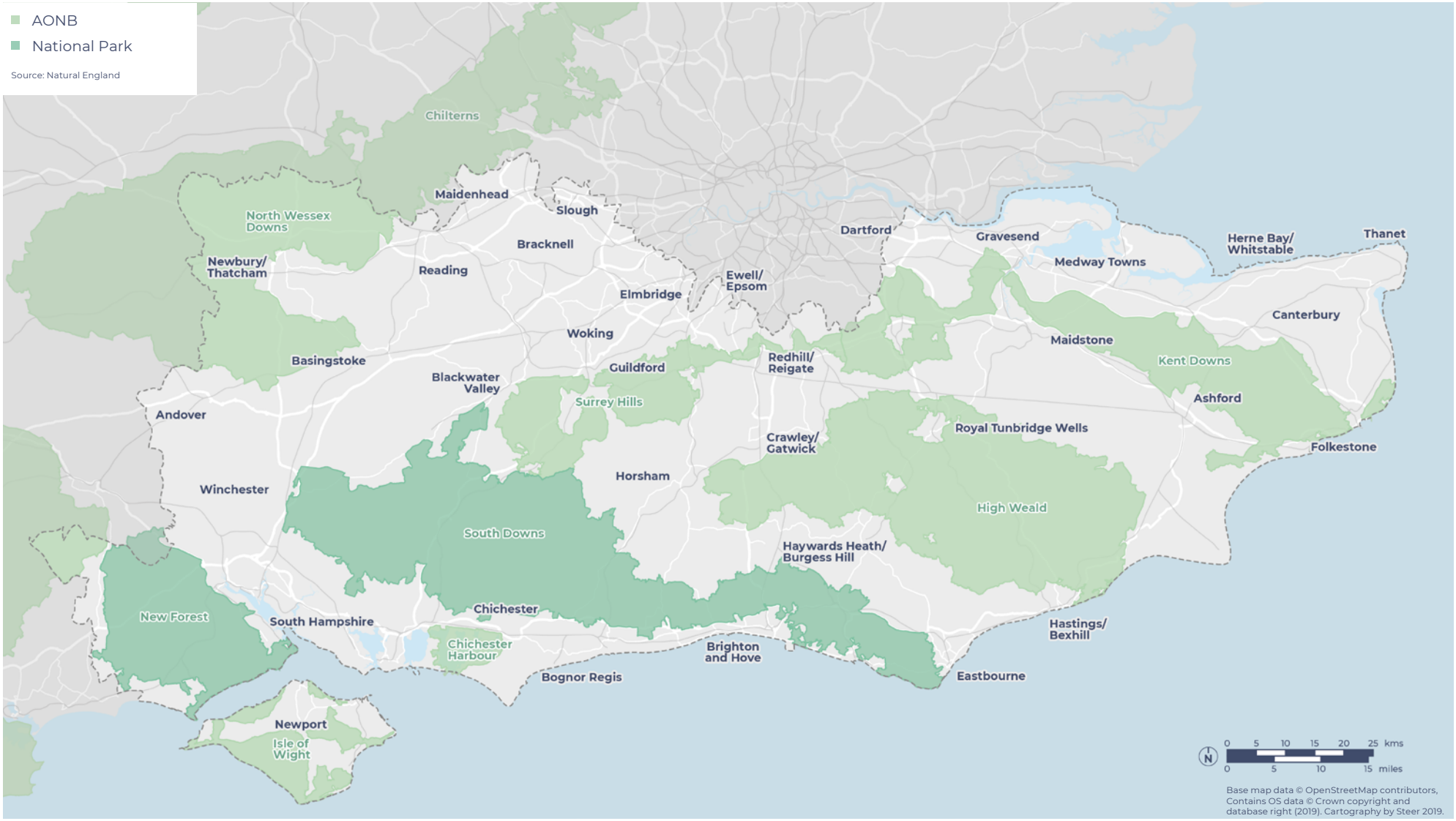
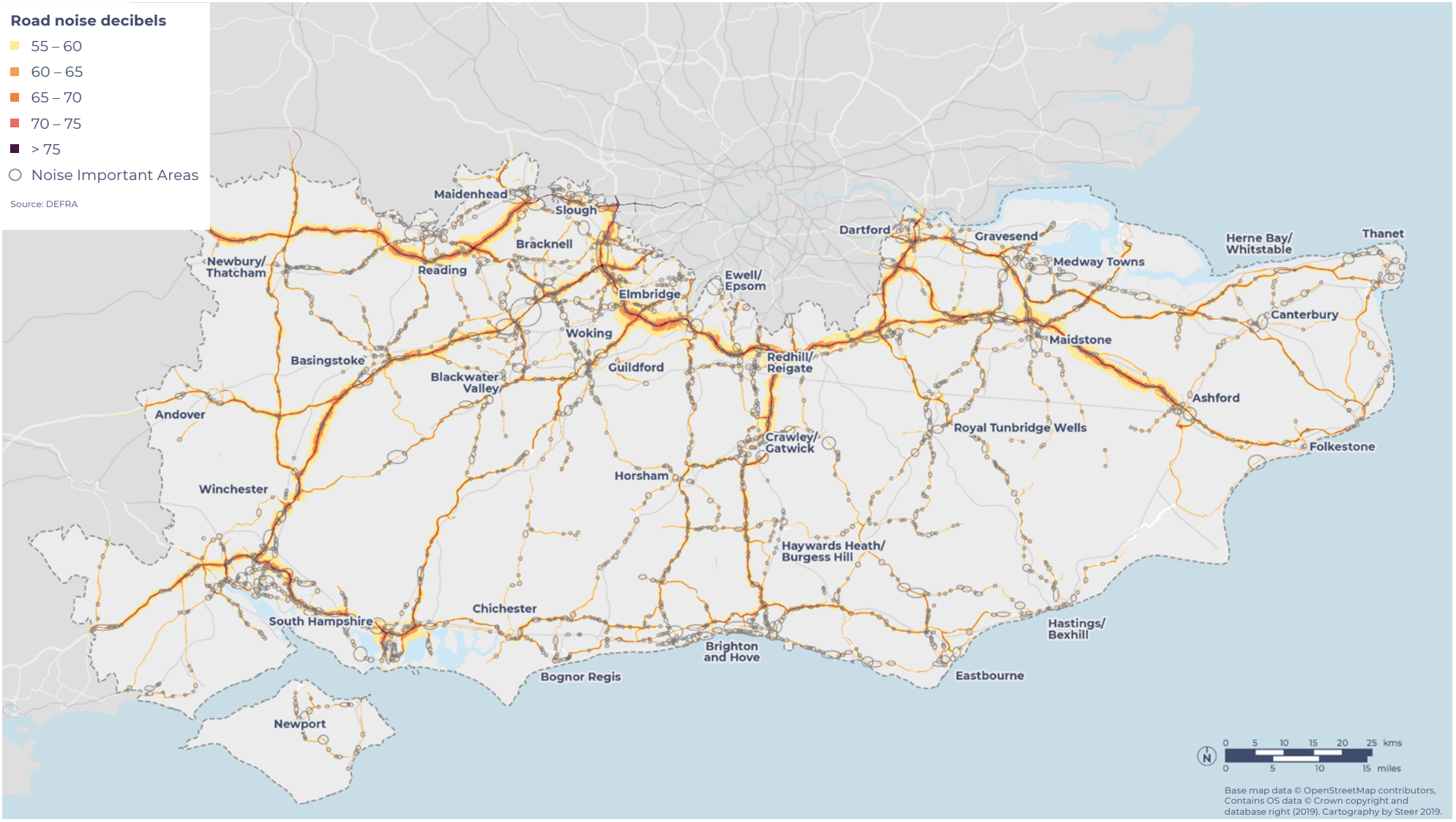


Figure 2.8 Air Quality Management Areas in the South East area

Figure 2.9 Road noise pollution in the South East area



The South East's relationship with the rest of the UK

The gateway to the British Isles

2.26 The South East is crucial to the UK economy and is the nation's major international gateway for people and business. The Transport for the South East area has several of the United Kingdom's largest international gateways including the Port of Dover, the Port of Southampton, Eurotunnel and Gatwick Airport. Heathrow Airport is positioned just on the boundary of the Transport for the South East area. Half of all freight passing through Dover travels on to other parts of the country. Southampton sees £71 billion of international trade each year and is the principal port for the automotive industry, while Portsmouth handles two million passengers a year. More than 120 million air passengers a year use Gatwick, Southampton and Heathrow airports. The role of these international gateways was examined in more detail in the Freight Logistics and Gateway Review that was undertaken as part of the development of this transport strategy[15].

2.27 It is estimated that approximately 10% of trips in the South East area start or finish outside the South East and London[16]. The South East's geographical position as the closest part of the British Isles to continental Europe means it has a unique role as the gateway to the United Kingdom. Significant business, freight and tourist flows pass through the South East area to reach London, the rest of the United Kingdom (and Ireland).

2.28 Much processing of freight in the UK occurs in the "Golden Triangle" – an area in the Midlands where there is a particularly high concentration of national distribution centres (where freight is processed and distributed to regional networks). It is quite common for freight to arrive into the UK in the South East, be transported to the Midlands for processing, and then return to the South East for regional distribution.

[15] Transport for the South East "Logistics and Gateway Review" (October 2019).

[16] Transport for the South East "Scenario Forecasting Technical Report"(October 2019).

2.29 This means that the road and rail routes that connect the South East to the Midlands and North of England are particularly important for freight. The key corridors for each mode are:

- **For road:** The M3/A34/M4 between Southampton and the Midlands/West of England and the M2/ M20/M25 between Dover and the Midlands/East of England.
- **For rail:** The South Western Main Line/ Basingstoke – Reading Line between Southampton and the Midlands and High Speed 1/North Kent Line/South Eastern Main Line between Dover/ Folkestone and London. To reach the rest of the country, most rail freight from Kent needs to pass through Greater London where track capacity is scarce due to high passenger train flows.

2.30 The transport network in the South East has significant interfaces with schemes being pursued by neighbouring sub-national transport bodies. This includes the Oxford – Milton Keynes – Cambridge Expressway and East – West Rail projects that are being advanced by England's Economic Heartland. There is an important freight interface with this sub-national transport body on the A34 corridor, which connects the Port of Southampton with the Midlands and North of England. There are also important interfaces with the Western Gateway emerging sub-national transport body on the A36, A303/West of England Main Line, M4/Great Western Main Line and M25 corridors, as well as with Transport East at the Dartford Crossing.

The South East's relationship with London

A key relationship

2.31 London's contribution to the UK economy is well in excess of the contribution of other regions in the UK. However, it does not function in isolation and its economic success relies on strong transport links with towns, cities and international gateways outside of London, including many locations within the South East. The relationship between London and the South East is reflected strongly in commuting patterns between both regions. Further analysis of this relationship is provided in "The Relationship between the South East and London" Report, which is published alongside this transport strategy. Given the importance of this relationship, arrangements are in place to ensure effective liaison between Transport for the South East and both the Greater London Authority and Transport for London.

Commuting from the South East to London

2.32 The number of residents commuting into Greater London from the South East is substantial (350k)[17]. While this is a sizeable figure, it should be noted that it represents just 13% of commuting trips in the South East[18]. Most (83%) trips into central London are by rail[19]. Trips to outer London, on the other hand, tend to be made by car (80%)[20]. As shown in **Figure 2.10**, the areas with the highest number of commuter journeys to London are those that are closest to the Greater London boundary.

2.33 As the distance from London increases, the number of residents travelling to Greater London decreases. However, there are areas further from London, such as Winchester, Haywards Heath/Burgess Hill and Royal Tunbridge Wells, where a higher number of people commute to Greater London compared to their surrounding rural areas. These locations are major economic hubs, and typically have good strategic connectivity with fast journey times into London.

[17] Transport for the South East / Steer "The Relationship Between the South East and London" (October 2019).

[18] Ibid. page 10.

[19] Ibid. page 20.

[20] Ibid. page 16.

Commuting from London to the South East

2.34 **Figure 2.11** shows the number of employees commuting from Greater London to the Transport for the South East area. Over two-thirds of these trips are by car (67%). Generally, the areas within the Transport for the South East area with the highest number of employees commuting out from Greater London are located on the boundary with outer London. These include Slough, Elmbridge, Epsom/ Ewell, Leatherhead, Redhill/Reigate and Dartford. However, there are clusters further from the boundary with a higher number of employees commuting out from Greater London - notably around Reading, Maidenhead, Bracknell, Blackwater Valley, Woking, Guildford, Crawley/Gatwick and Sevenoaks. These are locations where there is a concentration of economic activity sectors such as professional services, finance and IT. This may explain why these areas have high commuting levels from London.

Other Socio-economic Trends

2.35 In addition to commuting, there are strong socio-economic ties between the South East and London that drives significant development in housing and employment on London's periphery.

2.36 London is a strong attractor of talent from across the whole country, meaning most areas in the country experience a net-migration flow towards London. In the South East, however, this trend is more complex. While many people are drawn from the South East to move to the capital, a significant number of people are moving in the opposite direction in search of more affordable housing and a better quality of life. This 'ripple effect' has been attributed to tight planning constraints in building new homes in outer London[21].

2.37 This trend is expected to continue for the foreseeable future as employment in London continues to grow faster than housing provision. Some targeted transport improvements – such as a Crossrail extension into Ebbsfleet – could further encourage Londoners to move to the South East and benefit from the high-quality transport links it offers.

[21] London School of Economics "Impact of outwards migration on the South East" (2018), http://www.lse.ac.uk/News/Latest-news-from-LSE/2018/01-January-2018/Ripple-effect-of-London-out-migration, accessed August 2019.

Figure 2.10 Commuting from the South East area to Greater London

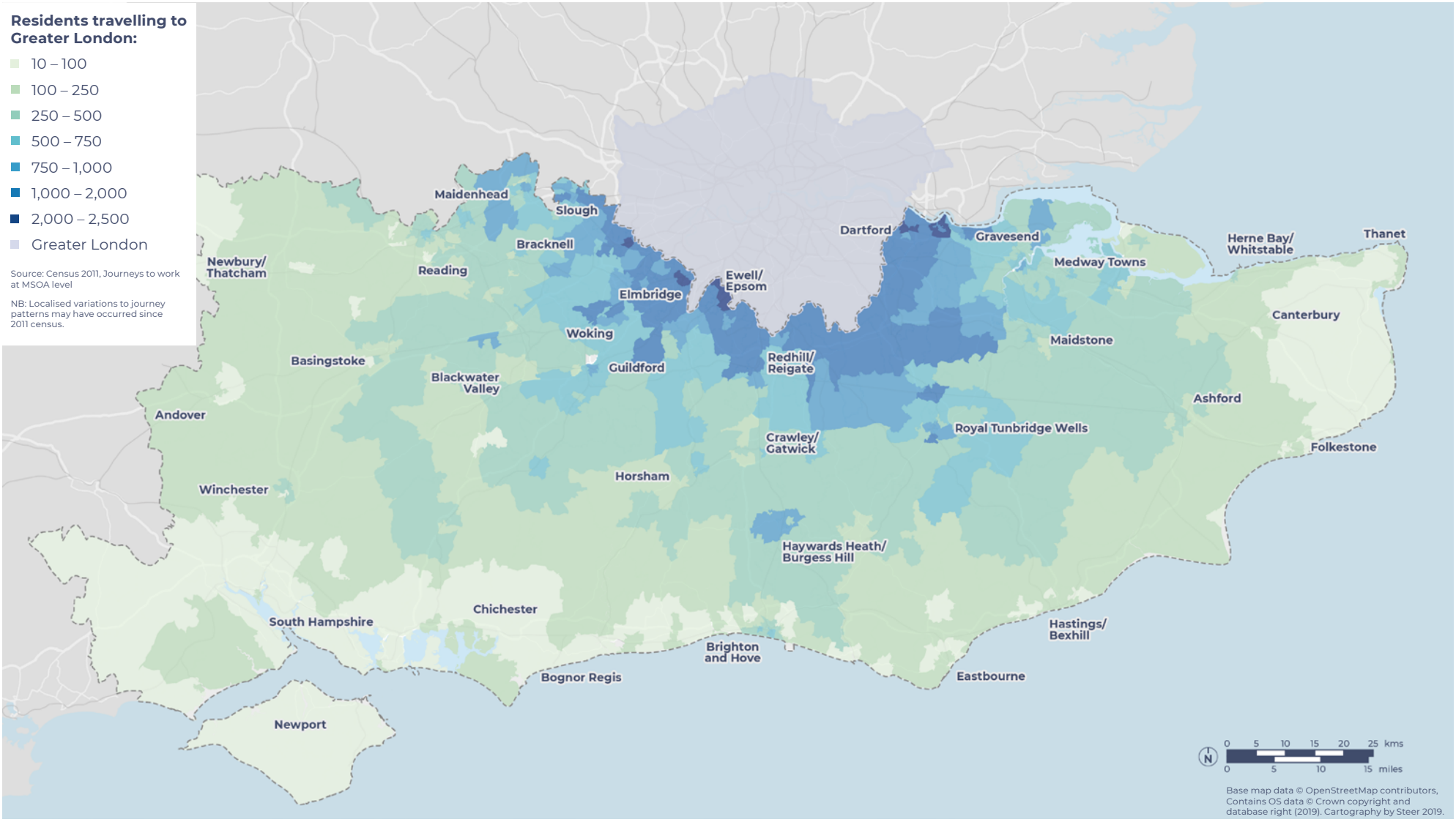
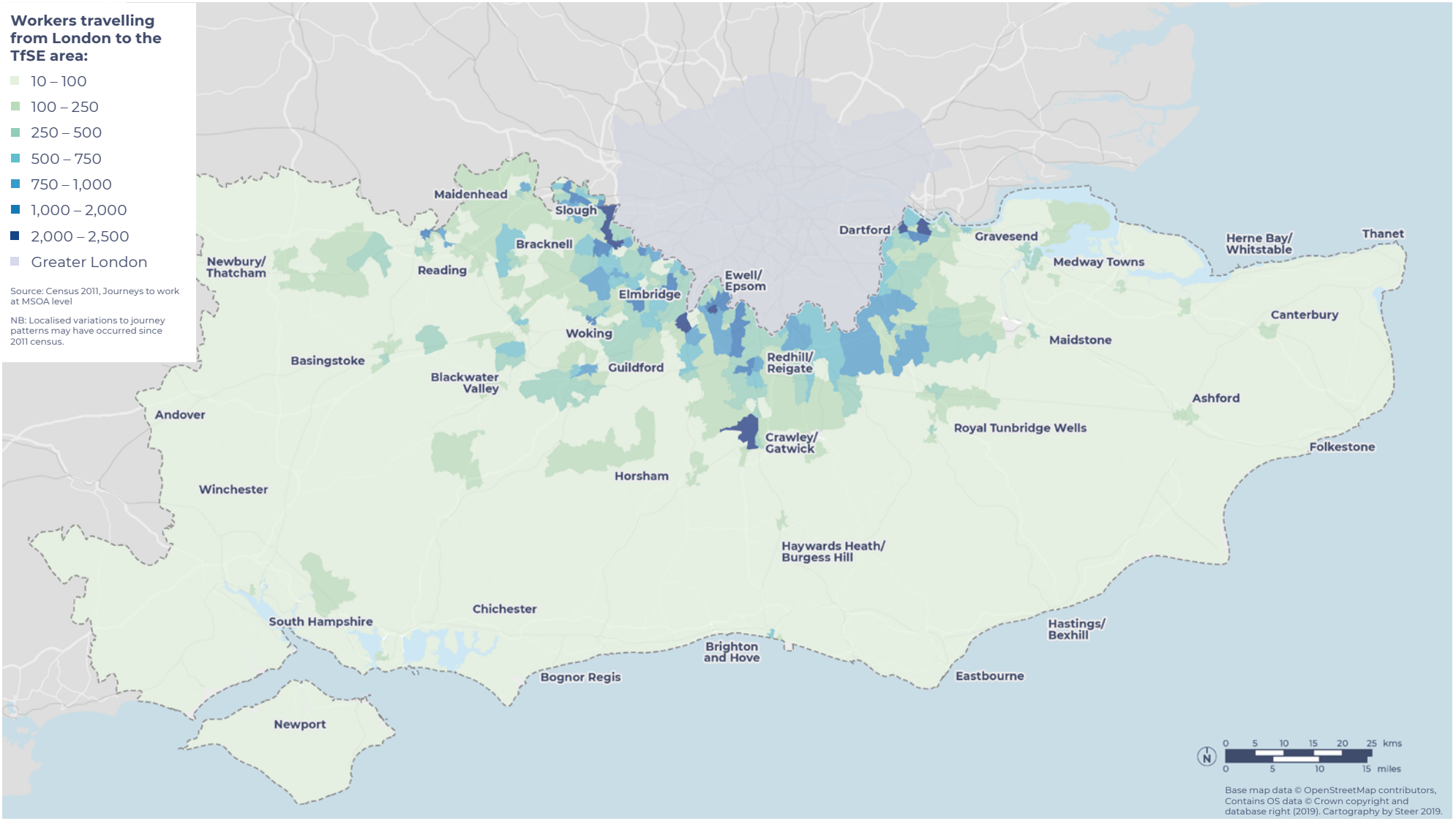


Figure 2.11 Commuting from Greater London to the South East area



Policy context

National policy context

2.38 Policy at a national level is developed by government departments and delivered by those departments, or through government agencies and arms-length bodies. A more detailed exploration of the policy context for the transport strategy is contained in the "Strategic Policy Context" Report[22], which is published alongside this transport strategy. The key documents and considerations include:

National Transport Policy:

- Transport Investment Strategy (DfT, July 2017);
- The Road Investment Strategy 2 (DfT, March 2020);
- Decarbonising transport: setting the challenge (DfT, March 2020)
- Future of Mobility: Urban Strategy (DfT, March 2019).
- High-Level Output Specification for Control Period 7 (Network Rail, July 2017); and
- Long-Term Planning Process Strategy documents (Network Rail).

National Planning Policy:

- The revised National Planning Policy Framework (MHCLG, February 2019);
- The NPS for National Networks (DfT, December 2014);
- The NPS for Ports (DfT, January 2012); and
- The NPS for Airports (DfT, June 2018).

National Economic Policy:

- The Industrial Strategy White Paper (BEIS, November 2017), including consideration of Industrial Strategy Sector Deals
- Clean Growth Strategy (HM Government, October 2017)

National Environmental Policy:

- The 25-Year Environmental Plan: A Green Future: Our 25 Year Plan to Improve the Environment (DEFRA, January 2018);
- Road to Zero Strategy (DfT, July 2018);
- Air Quality Plan (DEFRA, July 2017);
- Clean Air Strategy (DEFRA, January 2019); and
- The Climate Change Act 2008 (as amended in August 2019), which sets a national target of zero net carbon emissions by 2050.

National Social Policy:

- The Housing White Paper (MHCLG, February 2017), including the Housing Infrastructure Fund;
- The Coastal Communities Fund and Coastal Revival Fund; and
- The Inclusive transport strategy (DfT, July 2018).

[22] Transport for the South East "Strategic Policy Context" (October 2019).

[23] Borough and district councils also include two city councils (Canterbury and Winchester).

Regional policy context

2.39 Responsibility for developing regional economic and transport policy is currently shared between:

- Highways England, which prioritises investment on the Strategic Road Network in the South East;
- Network Rail, which prioritises investment on the railway network in the South East; and
- Five local enterprise partnerships (Enterprise M3, Coast to Capital, Solent, South East, and Thames Valley Berkshire), which set the strategic economic priorities for their areas.

2.40 It is envisaged that this transport strategy will form an important part of the regional policy framework for the South East.

2.41 The key documents published at a regional level include:

Regional Transport Policy:

- Highways England's Route Strategies (Highways England, March 2017);
- Network Rail Passenger Market Studies (Network Rail, various dates);
- Network Rail Freight Market Study (Network Rail, April 2017); and
- Network Rail Local Studies (Network Rail, various dates).

Regional Economic Policy:

- Strategic economic plans (local enterprise partnerships, 2014); and
- Local industrial strategies (local enterprise partnerships, under development).

Local Policy Context

2.42 Local transport policy is developed and delivered by the 16 local transport authorities in the Transport for the South East area. Some of these authorities are unitary authorities, and, as such, are also local planning authorities. In areas governed by county councils, local plans are developed by 46 borough and district councils[23] which are local planning authorities in their areas. The local plans developed by these planning authorities provide much of the development evidence base that has underpinned the development of the transport strategy.

2.43 The key documents published at a local level include:

- Local Transport Plans; and
- Local Plans.

The South East's transport networks

Key transport patterns

2.44 In 2018 it is estimated that there were 20.9 million trips each weekday in the South East. It is estimated that 80% of these trips started and finished within the South East area. The remaining trips start from or finish outside the South East (10% involve London and 10% involve other parts of the country)[24].

2.45 The split of trips by mode is estimated as follows:

- 70% of trips are by car (driver and passenger);
- 21% of trips are by foot or cycle;
- 5% of trips are by bus or taxi; and
- 4% of trips are by rail.

2.46 As walking and cycling trips tend to be much shorter than rail trips, the mode share by passenger kilometres is higher for rail and lower for foot and cycle[25].

2.47 As **Figure 2.12** shows, current transport demand represents significant challenges for the transport network. Significant parts of the highway network experience severe congestion during peak hours, while one in five passengers travelling to London from the South East (and South London) are standing on arrival at termini stations (more than one in four at Waterloo)[26].

Future transport patterns

2.48 The Department for Transport's National Trip End Model forecasts that the number of weekday trips taking place in the South East will grow by approximately 15% to 24.0 million trips by 2050[27]. This is driven by a growing population (which is forecast to reach approximately 8.4 million by the same date) and growing productivity and wealth.

2.49 This growth in the number of trips represents an 'unconstrained' outcome and is neither realistic nor sustainable. As **Figure 2.13** shows, this growth would add pressure on some of the busiest corridors in the South East area and exacerbate congestion across the whole of the South East. These outcomes risk limiting the development and economic potential of the South East area. The transport strategy therefore focuses on alternative, more sustainable approaches to transport planning as a means of accommodating and, in the long-term, managing future demand. This is why a scenario-based approach has been adopted in designing this transport strategy.

[24] Transport for the South East "Scenario Forecasting Technical Report" (October 2019).

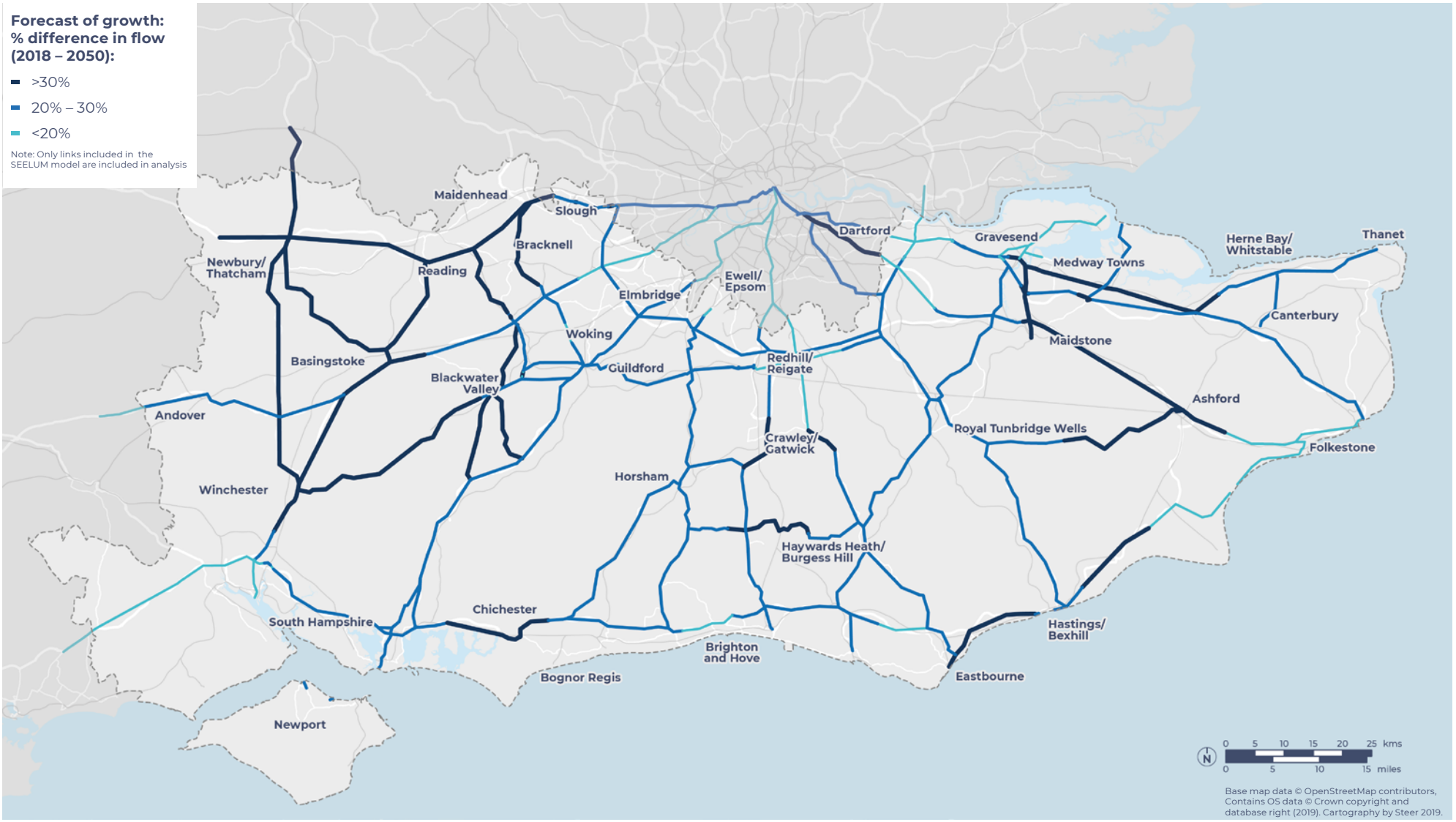
[25] Ibid.

[26] Department for Transport "Rail passenger numbers and crowding on weekdays in major cities in England and Wales: 2018" (2019) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820770/Rail_Passenger_Numbers_and_Crowding_2018.pdf (Page 13 – the termini included are London Bridge, London Victoria and London Waterloo), accessed May 2020.

[27] Transport for the South East / Steer "Scenario Forecasting Technical Report" (October 2019).

Figure 2.12 Current congestion challenges in the South East area

Figure 2.13 Forecast growth in road traffic in the South East area (based on DfT forecasts up to 2050)



Key corridors

2.50 The South East is served by a relatively dense network of highways and railways. It is also home to some of the largest international gateways in the United Kingdom. This transport strategy is designed to focus on multi-modal strategic transport corridors, as shown in **Figure 2.2**.

2.51 The strategic corridors, which are grouped into five areas, are :

South East Radial Corridors

- M2/A2/Chatham Main Line (Dartford – Dover);
- A299/Chatham Main Line (Faversham – Ramsgate);
- M20/A20/High Speed 1/South Eastern Main Line (Dover – Sidcup);
- A21/Hastings Line (Hastings – Sevenoaks);

South Central Radial Corridors

- A22/A264/Oxted Line (Crawley – Eastbourne);
- M23/A23/Brighton Main Line (Brighton – Coulsdon);
- A24/A264/A29/Arun Valley Line (Crawley – Fontwell);

South West Radial Corridors

- A3/A27/M275/Portsmouth Direct Line (Portsmouth – Surbiton);
- M3/M27/M271/A33/A326/South Western Main Line (Southampton – Sunbury);
- A33/Basingstoke – Reading Line (Basingstoke – Reading);
- A34/South Western Main Line/ Basingstoke – Reading Line (Reading – Winchester);
- A36/Wessex Main Line (New Forest);
- A303/West of England Main Line (Andover – Basingstoke);
- M4/Great Western Main Line/Reading – Taunton Line (Newbury – Slough);

Inner Orbital Corridors

- M25 (Dartford – Slough);
- A228/A249/A278/A289/Chatham Main Line/Sheerness Line (Medway Ports);
- A228/A229/Medway Valley Line (Maidstone – Medway);
- Redhill – Tonbridge Line/South Eastern Main Line (Ashford – Redhill)
- A25/North Downs Line (Guildford – Redhill);
- A31/A322/A329/A331/North Downs Line (Reading – Redhill);

Outer Orbital Corridors

- A28/A290/A291 (Canterbury – Whitstable);
- A27/A259/A2070/East Coastway Line/ Marshlink Line (Ashford – Brighton); and
- M27/A27/A31/West Coastway Line (Brighton – Ringwood).

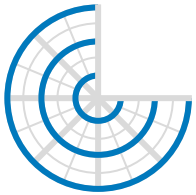
Figure 2.14 The Strategic Road Network and Major Road Network in the South East area

2.52 Alongside these corridors there is an important network of local roads (notably the Major Road Network, which is shown alongside the Strategic Road Network in **Figure 2.14**), that support inter-urban and local journeys. Each corridor and transport mode have diverse challenges and opportunities. This transport strategy does not seek to prescribe a solution to each individual corridor. However, it does examine thematic journey types, which are described in more detail in Chapter 3. These journey types are illustrated in **Figure 2.15**.

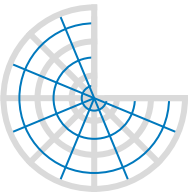
2.53 The remainder of this chapter describes the current configuration of the South East area's transport network and the challenges it faces. This is structured along the lines of transport mode.

Figure 2.15: The six journey types

Long-distance radial journeys

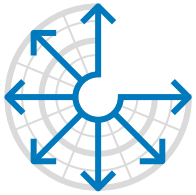


Long-distance orbital and coastal journeys



Medium-distance inter-urban journeys

Short-distance local journeys



International Gateways and freight journeys

Future journeys (based on emerging technologies and business models).

Highways

2.54 The South East is served by a mostly radial Strategic Road Network – managed by Highways England – that radiates from the M25 London Orbital motorway towards the coastline and West of England. These radial routes are complemented by two main orbital routes (the M25 and M27/A27). The A27, in particular, is built to a much lower specification than the M25 and most radial routes in the South East.

2.55 The Strategic Road Network is complemented by a Major Road Network, which is managed by the South East area's local transport authorities. This network serves a wide range of journey types from first/last mile to relatively long-distance trips. A map of the Strategic and Major Road Networks is provided in **Figure 2.14**.

2.56 The South East's radial Strategic Road Network generally provides an adequate level of connectivity (with a possible exception on the A21 corridor) but regularly suffers from congestion. As **Figure 2.12** shows, congestion is particularly acute on the M25 and routes close to London. Beyond targeted interventions to address local congestion hot spots, there is limited scope to expand capacity on these corridors, which suggests a future transport strategy will need to consider a broader range of interventions – potentially including demand management policies – to accommodate future growth on these corridors.

2.57 The South East's orbital Strategic Road Network is much sparser than its radial routes, particularly between the M20 and A3 corridors. This places significant pressure on the parts of the M25 and A27/A259/A2070 corridors that lie to the north and south of Gatwick Airport. The Major Road Network therefore supports a significant portion of inter-urban traffic on the South East area's east-west corridors. There are hotspots of congestion and poor reliability across these orbital corridors.

2.58 The highway network serves a very large portion of local journeys in the South East. These range from urban corridors that connect residents to economic hubs such as Brighton city centre, through to rural roads that connect more remote communities to the wider economy and transport network. Each route faces unique challenges related to capacity, connectivity, reliability and safety. There are opportunities for many of these routes, particularly those serving urban areas, to look again at the balance of road space provided to private cars, public transport, and active transport modes.

2.59 The highway network will be a key enabler for future mobility technologies such as ridesharing, connected and autonomous vehicles, and demand management systems. The transport strategy will need to balance the opportunities these technological advancements present with the social and environmental needs of the South East area, and ensure that the benefits of new technology are shared equitably between prosperous and more deprived parts of the South East, as well as between urban and more rural areas.

Railways

2.60 The South East has one of the densest railway networks in the United Kingdom outside London. In the main it provides good connectivity to central London through relatively fast and regular radial routes, although some corridors (e.g. Hastings Line) do not perform as well as others. As with the highway network, orbital corridors are less well served by the railway network. The level of connectivity (i.e. frequency and speed of passenger rail services) provided by the South East's rail network varies significantly across the area. Many coastal areas have relatively poor levels of connectivity compared to more inland towns and cities on mainlines. For example, although Hastings and Winchester are around the same distance from London, journeys from Hastings to London (1hr. 45 mins) take 75% longer than Winchester to London (1hr.). Orbital connectivity to Gatwick Airport by rail from the east and the west is poor in comparison to the radial connectivity to the airport from the north and the south. A map of the railway network is shown in **Figure 2.16**.

2.61 The network was developed relatively early in the technological development of the railways. This means many routes were developed at a time when the economic geography of the South East area was different to how it is configured today. It also means many routes were developed to standards that fall short of modern expectations. Some cross-regional routes were closed when the railway network was rationalised in the 1960s.

2.62 Most of the rail network in the South East is owned, maintained, and developed by Network Rail. A notable exception is High Speed 1, which is owned by HS1 Ltd and maintained by a subsidiary of Network Rail. Until 2020, most franchised passenger rail services are currently delivered by private operators under franchise agreements with the Department for Transport. The Government has announced a review that will consider reform of the current governance of passenger rail services in Great Britain. Crossrail services, which will soon operate under the "Elizabeth Line" brand, are managed as a concession by Transport for London.

2.63 The current passenger rail franchises serving the South East include:

- the **Cross Country franchise** (serving Berkshire, Hampshire, Surrey, and Southampton), which provides long-distance services connecting the South East to the Midlands and North of England;
- the **Crossrail concession** (serving Berkshire), which will provide direct commuter services through central London;
- the **Great Western franchise** (serving Brighton and Hove, Berkshire, Hampshire, Southampton, Portsmouth, Surrey, and West Sussex), which delivers commuter, cross-regional, and high-speed long-distance services to the West of England, South West England and South Wales;
- the **South Eastern franchise** (serving East Sussex, Kent and Medway), which provides commuter services and some cross-regional services;
- the **South Western franchise** (serving Berkshire, Hampshire, the Isle of Wight, Portsmouth, Surrey, and Southampton), which provides commuter services, the Island Line service and some longer distance services to the West of England and South West England; and
- the **Thameslink, Southern and Great Northern franchise** (serving every local transport authority except Berkshire and the Isle of Wight), which delivers commuter services, the Gatwick Express service and cross-London services.
- Additionally, international rail services are provided by **Eurostar**, which is an Open Access Operator. There are also a number of heritage rail operations across the region.

2.64 The South East is home to the United Kingdom's first and (currently) only interoperable high-speed railway (as defined under EU regulations) – High Speed 1. This railway provides both domestic and international high-speed services that can theoretically operate at a maximum speed of 300kph (186mph). Domestic high-speed services currently serve a significant number of communities in Kent. There is potential to expand these services further, potentially into East Sussex, in the longer term.

2.65 Most of the railway network is electrified using third rail traction. This offers many benefits, not least to the environment as electric railways typically generate lower carbon emissions and lower localised air pollution than diesel railways. However, it presents a barrier in other ways. There are gaps in the electrified network that prevent through running of electric train services on a number of routes in the Transport for the South East area including the North Downs Line, Uckfield to Hurst Green, Basingstoke to Reading West and Ore to Ashford. The third rail generally delivers lower acceleration and maximum speeds compared to overhead line equipment (OLE). The third rail also presents a barrier to expansion, as safety regulations potentially limit the extent this technology can be used to 'in-fill' gaps in electrification on the current railway network. The introduction of bi-mode trains represents a way of overcoming this issue for services operating both inside and outside the Transport for the South East area, such as the Brighton to Bristol route. The Great Western Main Line has been recently upgraded to OLE which, along with new rolling stock on this route, has enabled a decrease in emissions and improvements in air quality and noise impacts on this corridor.

2.66 The most pressing challenge for the rail network in future years relates to capacity, especially on radial routes into London. More capacity is needed on most radial railway corridors in the South East area (some more so than others). There are also sections of orbital rail routes where capacity increases are needed such as the North Downs line, the Medway Valley line, Ashford to Hastings line and the two Sussex Coastway corridors. Capacity can be delivered through investing in rolling stock, track, junctions, signalling, and platforms (particularly at London termini). All of these would require significant investment and long-term planning to deliver.

2.67 The Government has announced a review that will consider reform of the current governance of passenger rail services in Great Britain. Transport for the South East has participated in this review and looks forward to its outcomes, which may include greater involvement in the future planning and development of the rail network in the South East.

Figure 2.16 The passenger railway network in the South East area

International gateways

2.68 The South East is the UK's gateway to mainland Europe. As such, it has some of the largest ports in the country, including:

The **Port of Southampton**, which is operated by Associated British Ports. It handles the highest tonnage of freight in the South East and is the second busiest container port in the UK. In 2018 around 34.5 million tonnes passed through this port[28]. served 1.6 million cruise Liquid bulk accounted for more than half of freight handled by this port in 2018. Southampton also served 1.9 million cruise passengers in 2018[29]

Portsmouth International Port, which is managed by Portsmouth City Council. In 2018 this port handled just under 3.5 million tonnes of freight[28] (three-quarters by Ro-Ro) and 1.8 million passengers[29]. The port also acts as an important military base for the Royal Navy.

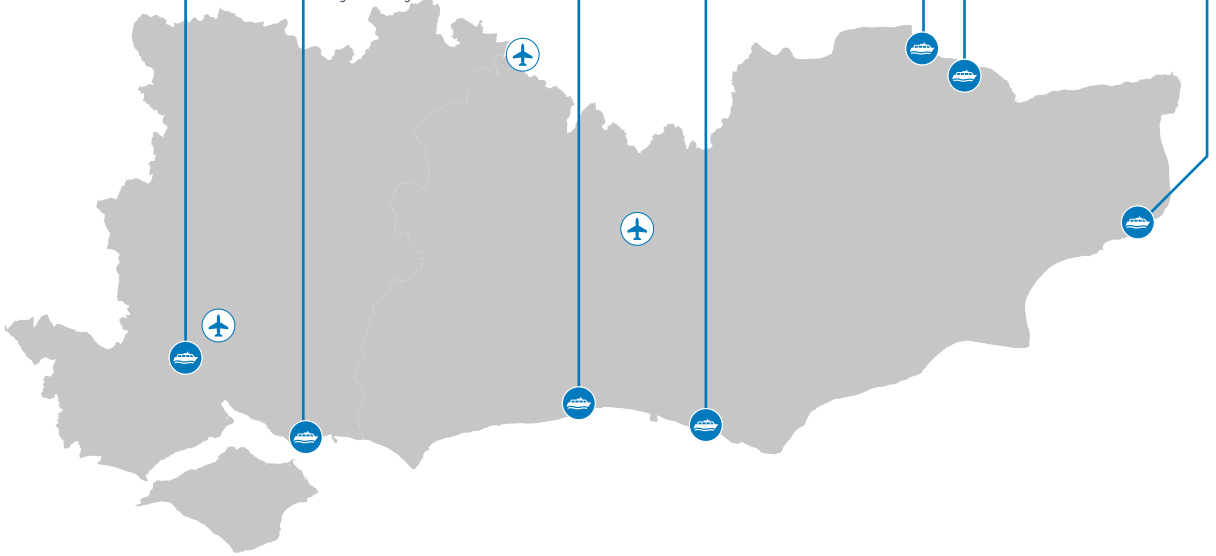
The **Port of Shoreham**, which is managed by the Shoreham Port Authority and, in 2018, handled 2.1 million tonnes of freight (mostly aggregate)[28], almost all by dry bulk.

The **Port of Newhaven**, which is operated by Newhaven Port and Properties Limited. In 2018, this port carried nearly 0.7 million tonnes of freight[28] and just under 0.4 million passengers[29].

London Thamesport, which is operated by the Hutchison Ports Group. This port has one of the UK's first automated container terminals. In 2017, this port carried approximately 4 million tonnes of freight[30]. This port does not serve passengers.

The **Medway Ports**. These include Sheerness Port, which is located on the eastern side of the **Medway Estuary**, and Chatham Port, which is located on the southern side. These ports are managed by Peel Ports. In 2018, 10.2 million tonnes passed through this port, mostly by dry and liquid bulk[28]. This port does not serve passengers.

The **Port of Dover**, which is managed by the Dover Harbour Board and is the largest roll-on/roll-off (RORO) port in the world. In 2018, 24.9 million tonnes[28] passed through this port, almost all by RORO. 11.8 million passengers used the Port of Dover in 2018[29].



[28] Department for Transport, "UK Major Port Freight Traffic (Table PORT0301)", https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port, accessed August 2019.

[29] Department for Transport, "Sea Passenger Statistics (Table SPAS0101)" (2018), https://www.gov.uk/government/statistical-data-sets/sea-passenger-statistics-spas, accessed May 2020.

[30] Thamesport "UK Ports statistics" (2019), http://uk-ports.org/thamesport/, accessed August 2019.

[31] Department for Transport "Channel Tunnel: traffic to and from Europe, annual from 1994, Table TSGB0607 (RAI0108)" (2019), https://www.gov.uk/government/statistical-data-sets/tsgb06, accessed May 2020.

[32] Source: Southampton Airport Statistics

(Southampton Airport, 2018) https://www.southamptonairport.com/about-us/facts-figures, accessed August 2019.

[33] AIN Online "Farnborough Airport Sets Traffic Record in 2018", https://www.ainonline.com/aviation-news/business-aviation/2019-01-19/farnborough-airport-sets-traffic-record-2018, accessed September 2019.

[34] Civil Aviation Authority "Airport Data (Table 01 – Size of UK Airports)" (2018) https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2019, accessed September 2019.

[35] Gatwick Airport, "Gatwick Airport Masterplan" (2019) https://www.gatwickairport.com/globalassets/business--community/growing-gatwick/gatwick-draft-master-plan-final.pdf, accessed August 2019.

2.69 The South East is the home of the country's only rail link to the continent – the Channel Tunnel. This key international gateway can be accessed by road at the **Eurotunnel Folkestone Terminal** and by accessing international passenger rail services at Ashford International, Ebbsfleet International, and St Pancras International railway stations (the latter being in London). This international gateway is technically a land border between the United Kingdom and France. In 2018, the Channel Tunnel carried 21.6 million passengers, 4.4 million vehicles, and 1.3 million freight tonnes (by through train)[31].

2.70 The South East is home to some of the busiest airports in the country. These include:

Southampton Airport, which carried just under 2 million passengers in 2018 and serves over 30 destinations[32].

Farnborough Airport, which is one of the largest general aviation airports in the country, with reportedly over 30,000 air traffic movements in 2018[33].

London Heathrow Airport, which is the second busiest international airport in the world, with over 80 million passengers in 2018. This airport lies on the border of Greater London and the South East[34]. There are plans to expand the airport with the possible development of a third runway to the north west of the current site. This airport will continue to have a significant impact on the economy of the South East.

Gatwick Airport, which is the second busiest airport in the country and the busiest single-runway airport in the world, with over 46 million passengers in 2018[34]. This airport supports a cluster of businesses in the "Gatwick Diamond". It serves as a particularly important gateway to continental Europe. The airport has recently published a masterplan, which seeks to use its emergency runway to increase the number of flights[35].

*__Other airports__, including Biggin Hill and Brighton City Airport, which also serve the general aviation market.

2.71 The South East's highways and railways provide important connectivity to these international gateways, not just for residents and businesses in the South East, but also for London and the rest of the United Kingdom (and, indeed, Ireland). At times, the South East area's highways network can be adversely affected by border and transport operations on both sides of the English Channel.

2.72 It is therefore critically important that Transport for the South East ensures the South East's transport network continues to serve these gateways as best as possible and facilitate trade and tourism. This is particularly important as the country moves to new trading relationships with the European Union. An assessment of the potential impacts of the country's departure from the European Union on the South East was prepared as part of the development of the transport strategy[36]. Further technical work will be undertaken to identify the potential short term impacts of the Covid-19 pandemic on travel behaviour, employment patterns and the economy in the South East. The outputs from this work will be fed into the area and thematic studies that will follow on from this transport strategy.

Buses

2.73 Bus services in the South East are provided by private or municipal operators and are funded through fares, and support from local transport authorities and the government. Some areas close to the Greater London border are also served by franchised Transport for London bus services.

2.74 It is widely recognised that good local bus services are an essential part of vibrant, sustainable communities, enabling people to access health, education, leisure services, shops and jobs. They are crucial to many people's general well-being, enabling them to maintain their social networks. A full double decker bus can take up to 75 cars off the road[37] and therefore buses have a vital part to play in reducing or managing traffic congestion and greenhouse gas emissions, particularly in urban areas.

2.75 **Figure 2.17** shows levels of bus use for travel to work purposes and illustrates how these levels vary markedly across the TfSE area. In general, there is a higher mode share by bus for journeys to work in urban areas than rural areas. The highest levels of bus use occur in some urban areas, notably Reading, Crawley and Brighton and Hove, which reported some of the highest number of bus passenger journeys per head in England (outside London) in 2019[38]. University towns such as Canterbury and Winchester, as well as areas served by major transport hubs, such as Gatwick Airport and Bluewater/ Ebbsfleet, also appear to have a higher bus mode share than neighbouring areas. The Isle of Wight also appears to have a relatively high level of bus use given its relatively rural context.

2.76 In contrast to many other regions in the UK, most local transport authorities in the Transport for the South East area have seen an increase in bus use in recent years. In the last ten years, the number of passengers using buses in Reading and several other Berkshire authorities has grown by more than 30%. Similarly, strong growth has occurred in Brighton and Hove (20%) and Southampton (15%)[39].

2.77 Bus priority measures are important in reducing bus journey times and increasing service reliability. There are different types of bus priority measures including segregation, traffic management, traffic signal control and bus stop improvements. Effective bus priority measures can achieve mode shift from car, and in so doing, reduce delays for both bus users and car drivers, however, competition for limited road space is often a barrier to introducing bus priority. There are a number of busway schemes in the Transport for the South East area providing segregated corridors for buses in Crawley, South East Hampshire, and the Thames Gateway area of Kent. The Crawley Fastway scheme is a combination of segregated guided busways and dedicated bus lanes along three routes linking Horley, Gatwick Airport and Crawley. The scheme allows buses to bypass congestion hotspots, offering faster and more reliable bus journeys. The introduction of these has resulted in average journey time

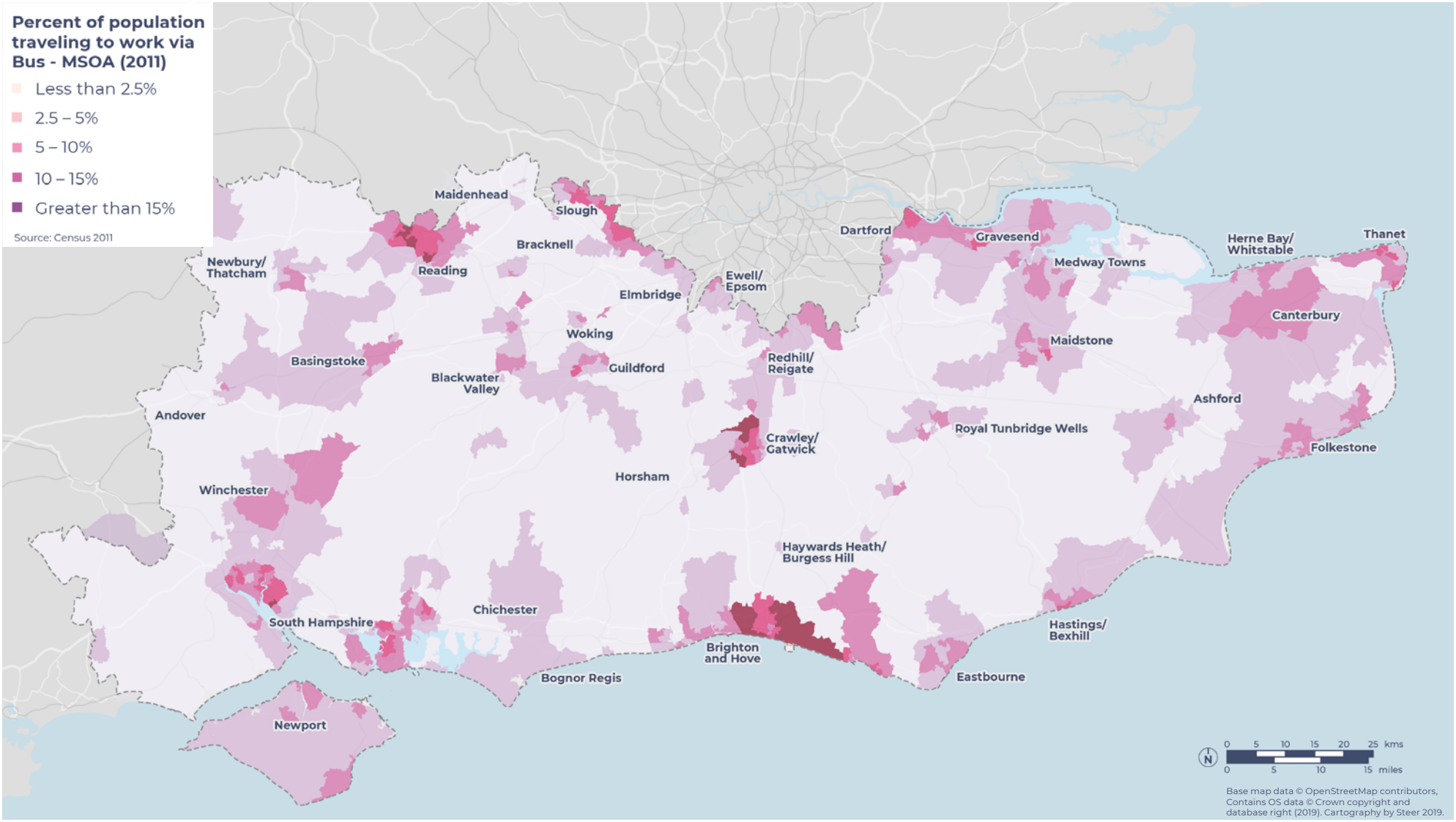
[36] Transport for the South East "Potential Impacts of Brexit" (2020)

[37] Greener Journeys (2017) "Leave your cars at home for Catch the Bus Week" www.greenerjourneys.com/news/leave-cars-home-catch-bus-week, accessed May 2020.

[38] Department for Transport (2019) "Annual Bus Statistics 2018/19" (Page 6) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/852652/annual-bus-statistics-2019.pdf, accessed May 2020.

[39] Department for Transport (2019) "Local bus journeys (BUS0109)" https://www.gov.uk/government/statistical-data-sets/bus01-local-bus-passenger-journeys, accessed May 2020.

Figure 2.17 Levels of Bus use in the South East area



reductions on these routes of 9.5 minutes. Passenger numbers have increased by 160% over 10 years with passenger satisfaction levels of 90%[40].

2.78 The bus industry faces a number of ongoing challenges. Overall, financial support for buses and patronage are in decline. Increasing congestion has the effect of reducing the attractiveness of bus services, which in turn reduces demand and forces operators to reduce services, which in turn further reduces the attractiveness of the bus. Finally, there are challenges in decarbonising the bus fleet – a challenge that will require new technology and investment to deliver a zero emissions bus fleet.

2.79 Moving forward buses will have a key role to play in delivering a more balanced, more sustainable transport system in the South East. A key challenge will be the potential role of the bus as part of emerging 'mobility as a service' initiatives. There are examples of very successful bus services and bus priority in the Transport for the South East area that have delivered significant growth in recent years. This is due to investment in bus priority schemes, passenger information systems, improved payment systems, integrated ticketing arrangements, waiting facilities, on-board wi-fi and cleaner, more comfortable vehicles. This has shown that it is possible, with the right investment and policies, to reverse the historic cycle of decline and boost bus patronage and mode share.

Walking and cycling

2.80 The South East is a popular location for leisure walking and cycling. It is home to several nationally important long-distance footpaths and many National Cycle Network routes, which are shown in **Figure 2.18**. Its cycle network also includes the London – Paris "Avenue Verte" international cycle route.

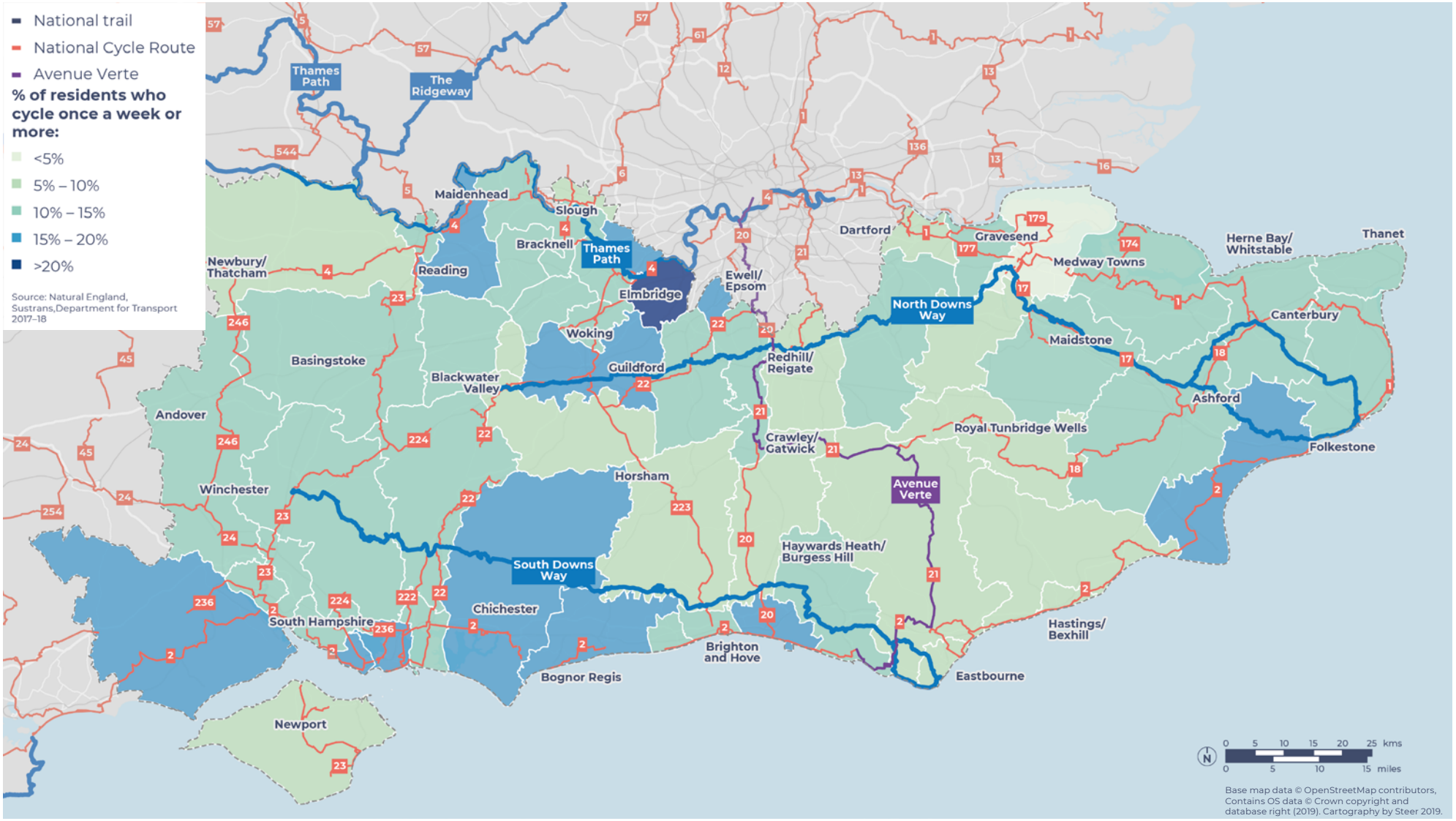
2.81 It is estimated that more than a fifth of journeys in the South East area are currently undertaken by walking and cycling. Most urban areas in the South East are well served by footpaths and (increasingly) cycleways that are designed to support these journeys. However, as **Figure 2.18** shows, the proportion of people cycling by local authority district varies significantly across the South East area. In general, cycling rates are higher in Brighton and Hove, West Sussex and Surrey (particularly Elmbridge) and lower in East Sussex, the Isle of Wight, western parts of Kent and Medway. Walking rates are generally more consistent across the South East area.

2.82 There is some evidence to suggest the South East's long-distance cycle network is less accessible than that in neighbouring sub-national transport body areas. Transport for the South East's analysis of the National Cycle Network (NCN) found that 62% of residents in the South East live within approximately a 10 minute cycle ride of the NCN. This compares to 67% for the England's Economic Heartland area and 78% for the Western Gateway area.

2.83 In general, many of the long-distance footpath and cycle routes in the South East appear to be better suited to supporting leisure journeys (e.g. longer coastal routes) rather than connecting large population centres together. There are some notable gaps in the National Cycle Network (e.g. West Kent and Thanet) and the quality of cycle routes varies enormously across the network. While some sections are well surfaced and clearly lit, many other sections are unsuitable for night-time journeys and/or would be hazardous to use in poor weather. Furthermore, some Major Economic Hubs are not served by the National Cycle Network at all (for example, the Blackwater Valley). This suggests there is scope to further expand walking and cycling infrastructure to encourage more sustainable forms of transport, particularly within and between the larger urban areas in the South East. The primary mechanism for delivering walking and cycling infrastructure improvements will continue to be through the Local Transport Plans and the Local Cycling and Walking Infrastructure Plans administered by the sixteen local transport authorities within the Transport for the South East area.

[40] KPMG (2015) "An economic evaluation of local bus infrastructure schemes" https://greenerjourneys.com/publication/an-economic-evaluation-of-local-bus-infrastructure-schemes, accessed May 2020.

Figure 2.18 The walking and cycling network in the South East area



Integration

2.84 The South East's transport network and transport planning framework faces several integration challenges. These challenges are driven by the current lack of integration between road and rail investment programmes, the fragmentation of public transport provision, and limitations that competition law place on the ability for independent operators to collaborate. In some places, particularly historic centres, there are also physical constraints preventing the creation of high-quality integrated public transport hubs. The consequences of these barriers mean:

- There are difficulties in providing multimodal interchanges that support housing and employment development;
- it is difficult for transport operators to provide multi-modal/multi-operator tickets for passengers travelling across operational boundaries and different modes;
- it is difficult for transport operators to co-ordinate timetables and share information to provide a consistent travel experience for passengers; and
- there are several examples where bus hubs are located some distance from rail hubs, which undermines the quality of interchange between different public transport modes.

1.85 The South East's planning framework is also relatively complex and fragmented. Most of the South East area is governed through two-tier structures where transport planning responsibilities are delivered through county councils and most spatial planning responsibilities are exercised by borough and district councils[41]. The five local enterprise partnerships are also responsible for promoting economic development. This fragmented arrangement presents a significant barrier to developing coherent, integrated, long-term plans in the South East. Looking further ahead, there may be opportunities for better alignment of transport planning with the energy and digital sectors. This transport strategy seeks to set out the benefits of better integrated economic, spatial and transport planning for the South East.

Conclusions

In this chapter we have highlighted the key characteristics of the South East area and described some of the challenges it currently faces. This has provided a compelling case for the need for this transport strategy and long-term Strategic Investment Plan for the area. In the following chapter we set out our vision, goals and priorities for the South East and describe the five key principles we have adopted to develop this transport strategy.

[41] There are also 11 Unitary Authorities in the South East, which are single-tier authorities that are responsible for both transport and spatial planning in their areas.

Chapter 3

Our Vision, Goals and Priorities

Introduction

Introduction

3.1 This chapter describes the outcomes that Transport for the South East and its partners and stakeholders wish to realise by 2050. It is structured as follows:

- First, it sets a vision statement for the South East in 2050. This vision, which has been developed by Transport for the South East in partnership with constituent authorities and key stakeholders, articulates a 'preferred future' for the South East area.
- Second, it outlines three strategic goals for the South East area. These align with the three pillars of sustainable development; economic, social and environmental.
- Third, it describes fifteen strategic priorities that will help the South East area to achieve the strategic goals

3.2 The relationship between the vision, the strategic goals, and the strategic priorities is shown in **Figure 3.1**. TThe next part of this chapter describes each of these in more detail.

Strategic vision, goals and priorities

Vision statement

3.3 The vision statement, which sets out the overall direction of the transport strategy, forms the basis of the goals and priorities that underpin it. These goals and priorities help to translate the vision into more targeted and tangible actions.

3.4 3.4 Transport for the South East's 2050 vision for the South East area is::

By 2050, the South East of England will be a leading global region for net-zero carbon, sustainable economic growth where integrated transport, digital and energy networks have delivered a step-change in connectivity and environmental quality.

A high-quality, reliable, safe and accessible transport network will offer seamless door-to-door journeys enabling our businesses to compete and trade more effectively in the global marketplace and giving our residents and visitors the highest quality of life.

Figure 3.1 Transport for the South East's Vision, Strategic Goals and Strategic Priorities

Strategic Vision

By 2050, the South East of England will be a leading global region for net-zero carbon, sustainable economic growth where integrated transport, digital and energy networks have delivered a step-change in connectivity and environmental quality.

A high-quality, reliable, safe and accessible transport network will offer seamless door-to-door journeys enabling our businesses to compete and trade more effectively in the global marketplace and giving our residents and visitors the highest quality of life.

Strategic Goals

Economic

Improve productivity and attract investment to grow our economy and better compete in the global marketplace.

Social

Improve health, safety, wellbeing, quality of life, and access to opportunities for everyone.

Environmental

Protect and enhance the South East's unique natural and historic environment.

Strategic Priorities

- Better **connectivity** between our major economic hubs, international gateways (ports, airports and rail terminals) and their markets.
- More **reliable** journeys for people and goods travelling between the South East's major economic hubs and to and from international gateways .
- A transport network that is more **resilient** to incidents, extreme weather and the impacts of a changing climate.
- A more **integrated approach to land use and transport planning** that helps our partners across the South East meet future housing, employment and regeneration needs sustainably.
- A 'smart' transport network that uses digital technology to **manage transport demand**, encourage shared transport and make more efficient use of our roads and railways.
- A network that promotes active travel and active lifestyles to improve our **health and wellbeing**.
- **Improved air quality** supported by initiatives to reduce congestion and encourage further shifts to public transport.
- An **affordable, accessible transport network** for all that promotes social inclusion and reduces barriers to employment, learning, social, leisure, physical and cultural activity.
- A **seamless, integrated transport network** with passengers at its heart, making it simpler and easier to plan and pay for journeys and to interchange between different forms of transport.
- A **safely planned, delivered and operated transport network** with no fatalities or serious injuries among transport users, workforce or the wider public.
- A **reduction in carbon emissions** to net zero by 2050, at the latest, and minimise the contribution of transport and travel to climate change.
- A **reduction in the need to travel**, particularly by private car, to reduce the impact of transport on people and the environment.
- A transport network that **protects and enhances our natural, built and historic environments.**
- Use of the principle of **'biodiversity net gain'** (i.e. development that leaves biodiversity in a better state than before) in all transport initiatives.
- **Minimisation of transport's consumption** of resources and energy.

Strategic goals

3.5 The vision statement is underpinned by three strategic goals, which align to the three pillars of sustainable development and are shown in **Figure 3.2**:

- **Economic:** Improve productivity and attract investment to grow our economy and better compete in the global marketplace;
- **Social:** Improve health, safety, wellbeing, quality of life, and access to opportunities for everyone; and
- **Environmental:** Protect and enhance the South East's unique natural and historic environment.

3.6 This transport strategy aims to achieve a balance between these three pillars to deliver overall sustainability represented by the point where the three pillars interconnect at the centre of **Figure 3.2**.

3.7 The three pillars of sustainable development should be viewed in the context of the South East's existing characteristics set out in Chapter 2:

- The area is perhaps best known for its strong economic foundations. This is the most easily quantifiable of these goals to measure. However, future economic growth must not come at the expense of the natural environment.
- Despite this prosperity, the South East area faces many social challenges. It is home to some of the most deprived areas of the country, particularly in coastal regions. Addressing this issue will be challenging, but possible if future development is carefully managed. The South East area also suffers from unsustainably high house prices in many areas, which limits access to high-quality, affordable homes. Ultimately, addressing these challenges will lead to a higher quality of life for all residents of the South East area.
- The South East area has many rich environmental assets. The South East is home to two National Parks, seven Areas of Outstanding Natural Beauty, an environmentally sensitive coastline, and multiple historic monuments and conservation areas. Any intervention in the South East area's transport networks must ensure this environment is protected and, where possible, enhanced.

3.8 In some cases, these goals are mutually supportive. For example, improving the environment through focussing on air quality will also have the social benefit of improving health outcomes for residents. In other instances, however, these goals are often in conflict. For example, unconstrained economic growth has the potential to harm the environment by allowing growth in emissions and the degradation of environmentally sensitive areas.

Figure 3.2 Strategic Goals

Strategic priorities

3.9 Beneath each of the strategic goals lies a set of fifteen strategic priorities. These priorities narrow the scope of the goals to mechanisms and outcomes that will be most important to effectively deliver its vision. They are designed to be narrow enough to give clear direction but also broad enough to meet multiple goals.

3.10 The strategic priorities are as follows:

Economic strategic priorities:

- Better connectivity between our major economic hubs, international gateways (ports, airports and rail terminals) and their markets.
- More reliable journeys for people and goods travelling between the South East's major economic hubs and to and from international gateways.
- A transport network that is more resilient to incidents, extreme weather and the impacts of a changing climate.
- A more integrated approach to land use and transport planning that helps our partners across the South East meet future housing, employment and regeneration needs sustainably.
- A 'smart' transport network that uses digital technology to manage transport demand, encourage shared transport and make more efficient use of our roads and railways.

Social strategic priorities:

- A network that promotes active travel and active lifestyles to improve our health and wellbeing.
- Improved air quality supported by initiatives to manage congestion and encourage further shifts towards less polluting and sustainable modes of transport.
- An affordable, accessible transport network for all that promotes social inclusion and reduces barriers to employment, learning, social, leisure, physical and cultural activity.
- A seamless, integrated transport network with passengers at its heart, making it simpler and easier to plan and pay for journeys and to interchange between different forms of transport.
- A safely planned, delivered and operated transport network with no fatalities or serious injuries among transport users, workforce or the wider public.

Environmental strategic priorities:

- A reduction in carbon emissions to net zero by 2050, at the latest, to minimise the contribution of transport and travel to climate change.
- A reduction in the need to travel, particularly by private car, to reduce the impact of transport on people and the environment.
- A transport network that protects and enhances our natural, built and historic environments.
- Use of the principle of 'biodiversity net gain' (i.e. development that leaves biodiversity in a better state than before) in all transport initiatives.
- Minimisation of transport's consumption of resources and energy.

3.11 **Figure 3.1** shows each of the strategic priorities grouped beneath the strategic goals. This is a useful organising principle and makes it easier to understand broadly where these priorities are focussed. That said, the reality is that many of the strategic priorities address several of the goals. For example, the strategic priority to build "a network that promotes active travel and active lifestyles to improve our health and wellbeing" clearly supports the social goal through improved healthcare outcomes and will also help to achieve the environmental goal by encouraging people to walk and cycle.

Applying the vision, goals and priorities

Achieving key outcomes

3.12 The vision statement, strategic goals and strategic priorities outlined above describe the outcomes that Transport for the South East and its partners and stakeholders wish to realise by 2050. The remaining part of this transport strategy sets out how these outcomes will be delivered.

3.13 As described in Chapter 2 (**paragraph 2.50**), Transport for the South East has identified six thematic journey types, which are shown in **Figure 2.15**.

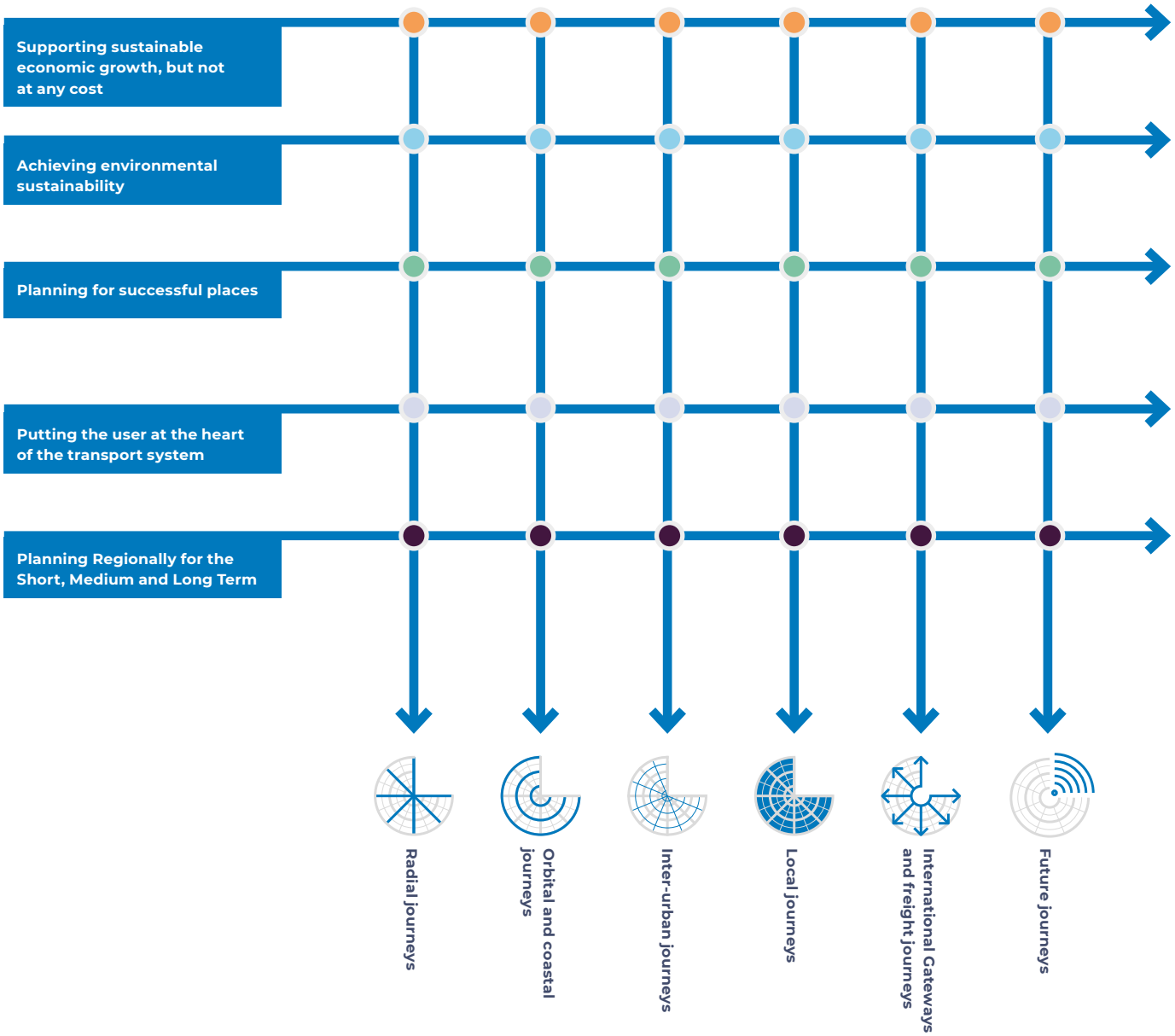
3.14 Transport for the South East has developed a framework that applies a set of principles to identify strategic issues and opportunities for each journey type in the South East.

3.15 The key principles that have applied in this process are as follows

- Supporting sustainable economic growth, but not at any cost
- Achieving environmental sustainability
- Planning for successful places
- Putting the user at the heart of the transport system
- Planning regionally for the short, medium and long term

3.16 Each principle is described in detail in the next part of this section. The relationship between these principles and the journey types is shown in **Figure 3.3**.

Figure 3.3 Five principles and six journey types



Supporting sustainable economic growth, but not at any cost

3.17 Economic growth, if properly managed, can significantly improve quality of life and wellbeing. Stronger economic growth means more jobs, wider prosperity, better opportunities and services, and a higher quality of life for residents. It delivers much needed additional housing and employment opportunities and helps improve the productivity and well-being of the South East. Much of this new housing and employment development is directly dependent on the delivery of adequate transport networks and services. This is why an integrated approach to spatial and transport planning is essential to achieve sustainable economic growth.

3.18 However, without careful management, unconstrained economic growth can have damaging consequences or side effects. For example, increases in trade flows can lead to a rise in traffic congestion and associated emissions of greenhouse gasses and a decrease in local air quality, with significant adverse impacts on climate change and human health.

3.19 This transport strategy strongly supports sustainable economic growth which seeks to achieve a balance with social and environmental outcomes. This means economic growth must be viewed as a means to improving the long-term quality of life for residents of the South East, rather than an end in itself. There are areas of the transport strategy that focus explicitly on encouraging economic growth. However, where it does so, it also considers the potential social and environmental consequences this may bring. Ultimately this reflects the overall vision of this document, and the strategic goals which lie beneath it.

Achieving environmental sustainability

3.20 Transport for the South East strongly believes the South East must reach a point where future economic growth is decoupled from damaging environmental consequences. This will be challenging, but against a background of global climate change and worsening local environmental quality (as evidenced, for instance, by Air Quality Management Areas within the South East), this goal is nonetheless critical.

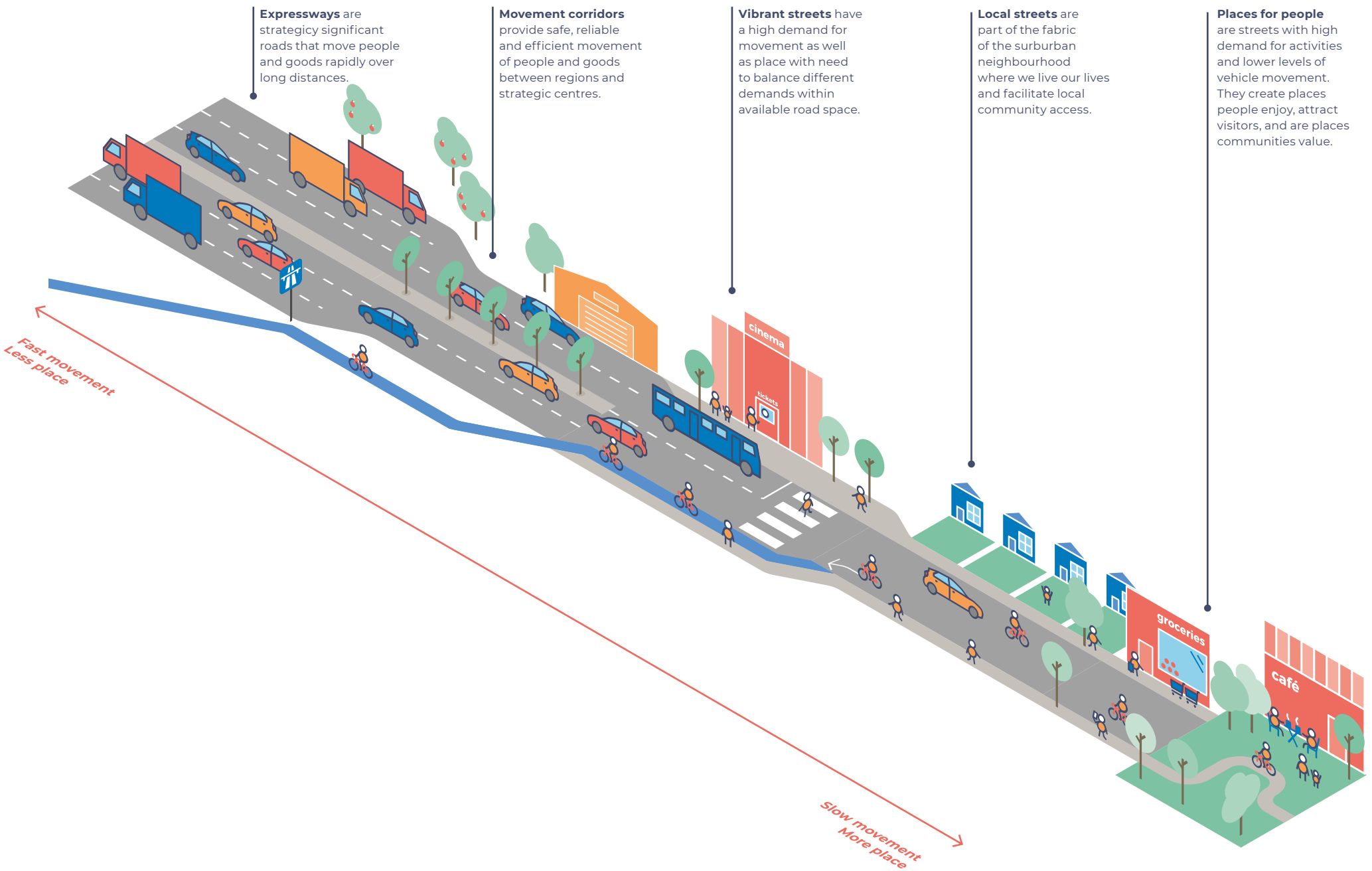
3.21 There are several clear and practical ramifications of this approach. For example, spatial planning and transport planning must become more closely integrated, ensuring that future development occurs in locations close to jobs and opportunities. This approach will ensure that people are able to travel shorter distances to reach economic opportunities, which helps lower the environmental impacts of doing so. Where people still need to travel longer distances, better provision of sustainable transport options should be provided to reduce dependency on the private car. Better integration of different transport modes (for example, through initiatives such as 'park and ride') will help people easily make multimodal journeys and access economic hubs, such as city centres, without needing to rely on the private car.

3.22 A natural capital approach should also be taken to transport planning, maximising opportunities for biodiversity and delivering wider environmental net gains to create a more resilient transport network across the region. For example, incorporating green infrastructure as part of new or enhanced transport networks can contribute to Nature Recovery Networks, natural flood risk management, infrastructure resilience, carbon reduction, and clean air, as well as other place-making and visitor economy objectives.

3.23 All these approaches will help ensure that the transport strategy provides a transport network that is more sustainable but does not limit future economic growth. They will also help to deliver the ambitions of the government's Twenty-Five Year Environment Plan, Clean Growth Strategy and Environment Bill, as well as support work undertaken by Natural England, Network Rail and Highways England on green transport corridors[1].

[1] Davies, H., Frandsen, M. & Hockridge, B. (2014) "NEWP32 Transport green corridors: literature review, options appraisal and opportunity mapping. Natural England Commissioned Reports, Number 168." http://publications.naturalengland.org.uk/publication/5752930789490688, accessed February 2020.

Figure 3.4 The Movement and Place Framework



Planning for successful places

3.24 This transport strategy envisages a South East where villages, towns and cities thrive as successful places, where people can live and work with the highest quality of life. Transport networks that simply aim to provide the most efficient means of moving along a corridor have the potential to bring a wide range of damaging consequences, particularly socially and environmentally. The transport network therefore has competing, dual priorities. On the one hand it must ensure that people can efficiently and easily move from one place to another. On the other hand, however, it must also ensure that 'places' are protected and ideally enhanced.

3.25 The best way to ensure that this occurs is to develop a transport network that considers both 'place' and 'link' functions. Some parts of the transport network are designed to fulfil 'link' roles while other parts contribute more to a sense of 'place'. A diagram illustrating the difference between these functions is provided in **Figure 3.4**.

3.26 Areas with high 'place' functions are areas such as town and city centres where 'active' modes, such as walking and cycling, should be prioritised over motorised forms of transport. This will help to enhance the environmental quality of these places, ultimately ensuring that they can continue to fulfil their role as the focus of their communities.

3.27 By contrast, sections of the transport network with a high 'link' function must allow journeys to move as efficiently as possible along them. Motorways and high-speed rail lines such as HS1 are examples of this function, as these enable high volumes of vehicles to move through corridors as quickly as possible while minimising contact with vulnerable users such as pedestrians and cyclists.

3.28 An ideal transport network, high speed and low speed components of the network should be clearly segregated from each other. For example, it is more appropriate for long distance rail services to use high speed railways (such as HS1) while stopping services should focus on slower corridors. Similarly, pedestrians and cyclists should be kept far away from the Strategic Road Network and other high-volume roads.

3.29 The most optimal transport network is one where traffic flows are aligned to their link function, and where conflicts between user types are minimised to ensure the efficient and safe operation of the transport network.

3.30 The application of the movement and place framework will require compromise. To ensure the best outcome for both movement and place, the process must be as inclusive and exploratory as possible, including looking at a range of options with experts from different disciplines and key stakeholders as well as those who use the space.

Putting the user at the heart of the transport system

3.31 This transport strategy envisages a transport network – particularly a public transport network – that places the passenger and freight user at the heart of it. This approach mirrors the philosophy adopted by the Williams Rail Review, which seeks to place the passenger at the heart of the passenger rail industry.

3.32 This approach seeks to understand why people make journeys and why they choose between different modes, routes, and times to travel. It also seeks to understand the whole-journey experience, from origin to destination rather than just a part of the journey.

3.33 This principle highlights the need for much better integration between modes. This is not just limited to physical interchanges (which are undoubtedly needed), but also integration in timetables, ticketing and fares, and information sharing. Similarly, there is more that can be done to better integrate highways traffic management and information systems between the Strategic Road Network and other roads in the South East area.

3.34 The affordability of transport is a key issue. Many people can be left cut-off from opportunities and essential services, including education, work and healthcare because of the costs of car ownership and the cost and availability of public transport alternatives. It is an issue that affects people in both urban and rural areas. Moving forward it is vital to ensure that the current inequalities in mobility and accessibility do not deepen and widen. Action needs to be taken to ensure that new transport technologies and innovations that are emerging are accessible to all, and in particular to the groups that currently find it hard to access the transport system.

3.35 It is recognised that, in a highly fragmented industry, there are significant barriers to promoting integration. However, one of the roles a sub-national transport body can undertake is to support the development of pan-regional smart card systems (as is currently being developed by Transport for the North). While this specific initiative may not be the right solution for the South East, it demonstrates the role a regional body such as Transport for the South East can play in fostering better integration between transport geographies and modes. 'Mobility as a service' is, however, one such option – a model whereby consumers have a 'bundle' of travel or 'mobility' across multiple modes of transport (much like a mobile phone plan with call minutes, messages, and data) or on a 'pay as you go' basis.

3.36 Mobility as a service could incorporate travel by car, as well as public transport and shared mobility options such as bike hire. This has the ability to ensure we only pay for the travel or mobility we 'consume', while also having the potential to better manage demand across the network.

3.37 Pricing mechanisms could be used to incentivise travel at less busy times or by more sustainable modes, or there is the potential to charge a premium if you travel at busier 'peak' times (e.g. similar to train travel, flights, and Uber), on more congested routes, by yourself or by more heavily polluting means, with options for road freight.

Planning regionally for the short, medium and long term

3.38 This transport strategy seeks to build on the excellent work of Transport for the South East's constituent authorities and other planning authorities in the South East. The transport strategy builds on transport plans set out by local transport authorities, local plans issued by local planning authorities, and the Strategic Economic Plans and Local Industrial Strategies created by local enterprise partnerships.

3.39 This transport strategy adopts a larger scale perspective that looks across the South East area focussing on cross-boundary journeys, corridors, issues and opportunities. As far as possible, it also seeks to align with the ambitions of the Greater London Authority and Transport for London, and other neighbouring sub-national transport bodies.

3.40 This transport strategy also adopts a multi-modal approach. It views corridors as being served by different types and levels of infrastructure, from the Strategic Road Network to first and last mile, from intercity rail services through to rural bus operations. This transport strategy does not differentiate its approach to the future development of infrastructure based on how this infrastructure is currently managed. Transport for the South East views the transport system as a holistic system, while acknowledging key interdependencies and interfaces between different owners and actors.

Conclusions

In this chapter we have described our vision for the South East as a leading global region for net-zero carbon, sustainable economic growth.
This vision is supported by a set of economic, social, and environmental goals and priorities for the South East area, which have also been outlined in this chapter. We have described the five key principles that we have drawn upon to develop our transport strategy, which are:

- Supporting sustainable economic growth, but not at any cost;
- Achieving environmental sustainability;
- Planning for successful places;
- Putting the user at the heart of the transport system; and
- Planning regionally for the short, medium and long term.

In the following section we focus on the six journey types that, together, describe the way people and goods move in the South East. We also highlight the key challenges facing each of these movement types and give an initial indication of the types of measures that will be needed to address them.

Chapter 4

Our Strategy

Introduction

Introduction

4.1 This Chapter outlines how Transport for the South East proposes to deliver its vision for the South East in 2050. It will do so by applying the principles introduced in Chapter 3 (**paragraph 3.15**) to each of the six journey types described in Chapter 2 (**paragraph 2.52**). This process will help identify key issues and opportunities, which will be explored further in subsequent area studies. A diagram illustrating this approach is shown in **Figure 3.3**.

4.2 The linkages between the principles and journey types have helped identify several key issues and opportunities. For example, applying the 'planning for successful places' principle to orbital and coastal journeys highlights significant issues relating to the mix of traffic passing through urban areas on the M27/A27 corridor. This is currently contributing to poor local air quality and conflicts between users. Similarly, applying the 'achieving environmental sustainability' principle to 'inter-urban' routes points towards a need for better allocation of space on urban corridors to public transport, cycling and walking. Funding sources and financing arrangements will be an important consideration in the development of schemes and interventions identified in the subsequent area studies. This issue is explored in more detail in Chapter 5.

4.3 The rest of this chapter summarises the context, challenges and opportunities relevant to each of these six journey types. It also sets out an initial indication of the types of initiatives (schemes and/or policies) that the evidence suggests will help the South East area to address the challenges described below. This transport strategy will be complemented by five area studies which will identify and prioritise the specific interventions required across the South East to deliver the strategy. Further technical work will be undertaken to identify the potential impacts of the Covid-19 pandemic on travel behaviour, employment patterns and the economy in the Transport for the South East area. The findings from this work will be used to inform the area studies. The outputs from the area studies will then be fed into a Strategic Investment Plan setting out our short, medium, and longer-term scheme priorities.

Radial journeys

Context

4.4 Radial journeys are longer distance passenger journeys between the South East and Greater London area and, in the case of Berkshire and Hampshire, between the South East and the South West / South Midlands. These journeys typically use the Strategic Road Network that radiates from the M25 towards the south coast and West of England, and/or main line railways that terminate in central London. A map showing the key radial corridors serving the South East, which also highlights key issues and opportunities affecting these corridors, is provided in **Figure 4.1**.

4.5 Most radial corridors are served by frequent and, in many cases, fast rail services that terminate in central London. Most radial journeys into central London are undertaken by rail (83%)[1]. This is unlikely to change as UK government and GLA policy strongly encourages high public transport mode share for trips to and from central London[2].

4.6 In contrast, a significant number of trips in outer London are made by car (44%)[3]. This perhaps reflects the relatively low level of public transport interchanges that support trips between the South East and outer London compared to central London.

4.7 There is a significant imbalance in jobs and homes in London. For every four jobs created in Greater London, just one additional dwelling is delivered[4]. In 2017, more than 1.2 million people entered central London on a typical weekday[5]. This imbalance in housing supply and demand gives rise to high levels of commuting to the capital.

4.8 London is expected to continue to grow and generate employment opportunities for the foreseeable future[6]. While TfSE supports the development of employment at economic hubs within its region, it acknowledges many people who live in the South East will continue to work in London. In general terms, commuting to London is highest in local authority areas that are closest to the Greater London boundary. Some areas with fast rail links, such as Brighton and Hove, also have relatively high levels of commuting to London[7].

[1] Department for Transport "People entering London during morning peak (Table TSGB0106)" (2018), https://www.gov.uk/government/statistical-data-sets/tsgb01-modal-comparisons, accessed September 2019.

2 Greater London Authority "Mayor's Transport Strategy" (2018), page 21 (Policy 1), https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf, accessed September 2019

[3] Transport for the South East "Transport Strategy for the South East: The Relationship between the South East and London" (October 2019).

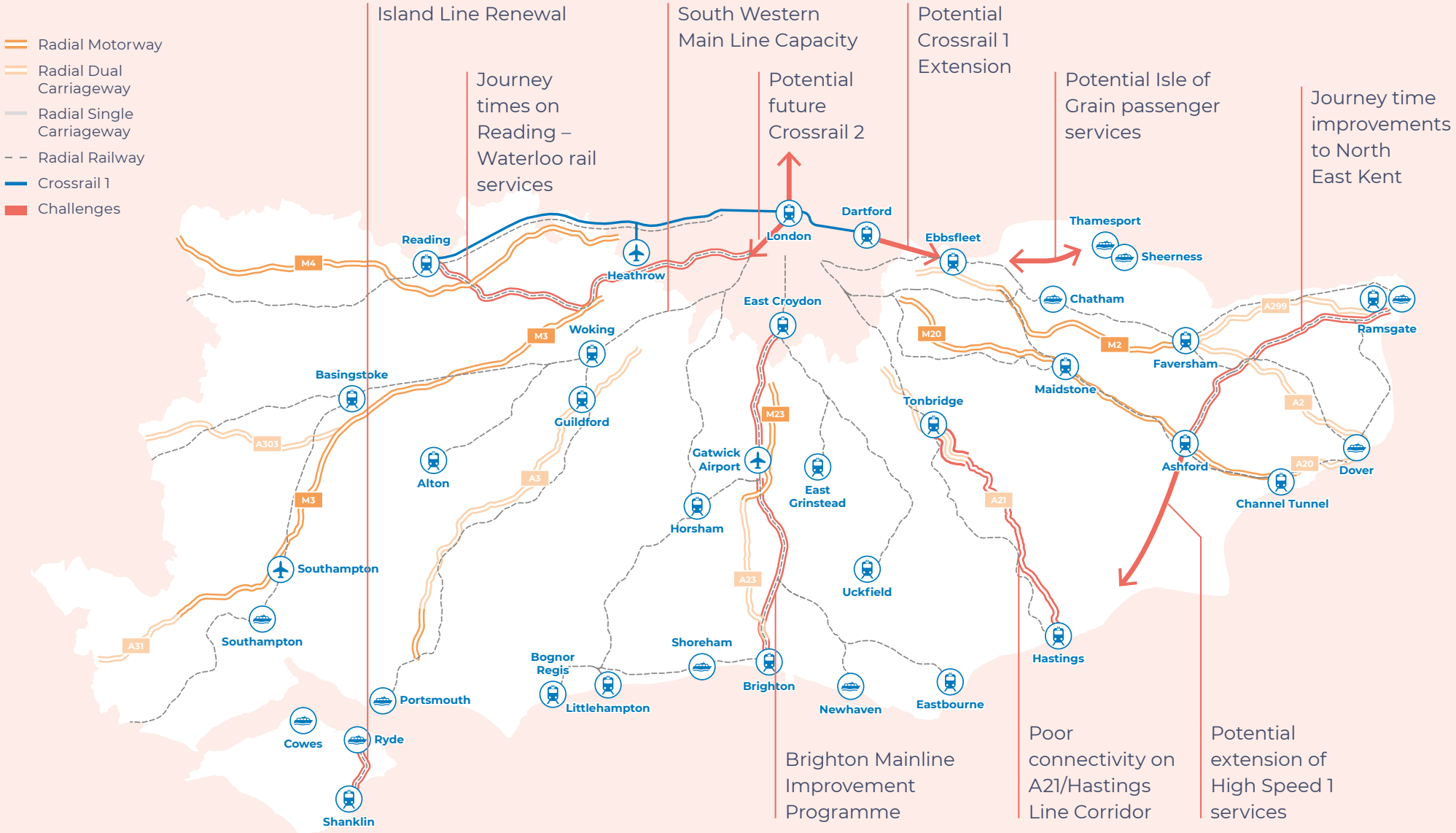
[4] 2018/19 the number of jobs in London increased by over 120,000 (see https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/regionallabourmarket/latest) while the number of dwellings completed over 2017/18 was 30,000 dwellings (see https://www.gov.uk/government/statistical-data-sets/live-tables-on-net-supply-of-housing).

[5] Transport for London "Travel in London Report 11" (2018), page 225, http://content.tfl.gov.uk/travel-in-london-report-11.pdf, accessed August 2019.

[6] Greater London Authority "London's Economic Outlook: Autumn 2019" (2019), page 6 (Figure 1.2), https://www.london.gov.uk/sites/default/files/leo-autumn-2019.pdf, accessed May 2020.

[7] **Figure 2.10** shows London commuting patterns.

Figure 4.1 Radial journey challenges and opportunities



Challenges and opportunities

4.9 In general terms, the radial routes to London from the South East have evolved to accommodate the high demand for employees to service the London economy, and are historic in nature rather than strategically planned. Virtually all major settlements and economic hubs have good access to a radial road on the Strategic Road Network and/or a radial railway. There is no obvious need to create a new radial corridor on the Strategic Road Network or rail network. However, these radial corridors face several challenges. In particular:

Challenge 1

While Kent has benefitted from significant improvements in rail journey times to London thanks to the introduction of High Speed 1 domestic services in 2009, some areas in **North and East Kent** risk being left behind. For example, the towns of Maidstone and Margate have relatively poor levels of connectivity compared to other parts of the region[8]. This undermines the potential for these corridors to support regeneration and unlock housing development in North and East Kent. There are also capacity constraints on several routes into London (many of which are only dual tracked, meaning longer distance services compete for track space with London/suburban stopping services) and at key termini such as London Charing Cross and London Cannon Street[9]. Similarly, journey times to London on the **Reading – Waterloo** Line are long compared to neighbouring corridors such as the Great Western Main Line.

Challenge 2

Both the road and railway serving the **A21/Hastings Main Line Corridor** deliver poor connectivity to the Hastings area[10]. The A21 is the least developed SRN road in the South East area and runs as a single carriageway for most of the route south of Pembury in Kent. Rail journeys from London to Hastings are typically 75% longer than from London to Brighton, even though the distances covered by these services are similar[11]. This undermines the potential for this corridor to support regeneration and economic development in 'left behind towns' such as those in the Hastings area.

Challenge 3

The **M23/A23/Brighton Main Line Corridor** is heavily utilised, has a significant 'capacity gap' and suffers from poor resilience[12]. This undermines the potential for this corridor to support the economy and unlock development near key economic hubs. This corridor has several branches at its southern end, which together means it serves a large area of the Sussex coast (from Chichester to Eastbourne). Any disruption at the north end of this corridor has the potential to cause significant delays in the south. Highways England and Network Rail are both investing in schemes to improve resilience on this corridor, including a smart motorway on the M23[13] and a resilience and renewal programme on the Brighton Main Line[14].

Challenge 4

The **A3/Portsmouth Direct Line Corridor** passes through the Guildford and Portsmouth urban areas. The A3 trunk road contributes to poor air quality and noise in these areas[15]. This has the potential to undermine the health and wellbeing of the people served by this corridor. This corridor suffers from significant congestion around Guildford[16].

Challenge 5

The **M3/South Western Main Line Corridor** provides important connectivity for freight traffic using the Port of Southampton, which is set to expand[17]. This corridor has high capacity (including an eight-lane smart motorway and a four tracked railway). However, it is also heavily utilised and regularly suffers from congestion[18]. The South Western Main Line railway suffers from serious overcrowding at peak times. This undermines the potential of this corridor to support economic productivity and development, particularly at fast growing towns such as Basingstoke. Capacity constraints on this line also limit the opportunity to provide faster journeys on the Portsmouth Direct

[8] **Figure 4.1** highlights the key connectivity gaps on this corridor.

[9] Network Rail "South East Kent Route Study" (May 2018), page 36, https://cdn.networkrail.co.uk/wp-content/uploads/2018/06/South-East-Kent-route-study-print-version.pdf, accessed August 2019.

[10] **Figure 4.1** highlights the key connectivity gaps on this corridor.

[11] Determined by searching trips between Ashford, Brighton, and Hastings to London using https://www.thetrainline.com/, Accessed August 2019

[12] Coast to Capital Local Enterprise Partnership "Unlocking the Brighton Main Line" (2019), page 3, https://www.coast2capital.org.uk/storage/downloads/unlocking_the_brighton_mainline-1560266517.pdf, accessed August 2019.

[13] Highways England "M23 Junction 8 to 10: Smart Motorway), https://highwaysengland.co.uk/projects/m23-junctions-8-to-10-smart-motorway/, accessed September 2019.

Line. This is a challenge because it currently takes longer to travel to London from Portsmouth than it does from Southampton (even though Portsmouth is closer to London). Network Rail is developing proposals to address bottlenecks on this corridor but funding to implement these proposals is not confirmed.

Challenge 6

The **M4/A4/Great Western Main Line Corridor** has benefitted from significant investment in recent years (Crossrail, Great Western Main Line electrification, new rolling stock and enhancements to Reading station)[19]. The M4 smart motorway enhancements are currently under construction and scheduled for completion in 2022. However, there are plans to expand Heathrow, which would mean this already very busy corridor is expected to come under increasing pressure. There is a risk it could hold back the economic benefits arising from improved global connectivity delivered by expansion at Heathrow.

The initiatives that are needed to address the radial journey challenges are:

Extend radial routes (e.g. Crossrail from Abbey Wood to Ebbsfleet and/or extend South Eastern franchise passenger services to the Isle of Grain) that serve particularly large new housing developments.

Addresses: Challenge 1

Invest in rail improvements to speed up journey times to London, particularly by utilising spare capacity on High Speed 1 and investing in parts of the railway that are served by high speed services.

Addresses: Challenge 2

Improve connectivity by both road and rail to deprived communities – particularly potential 'left behind towns' in Swale, Thanet, Hastings, Bognor Regis, Littlehampton, Worthing and Shoreham.

Addresses: Challenge 1 and Challenge 2

Provide additional capacity and resilience on radial railways, particularly the busiest corridors such as the South Western Main Line, Reading to Waterloo Line and Brighton Main Line.

Addresses: Challenge 3 and Challenge 5

Improve the resilience of the road network, potentially by adopting holistic demand management policies.

Addresses: Challenge 3 and Challenge 5

Reduce human exposure to noise and poor air quality from radial roads, particularly where these run through urban areas such as Guildford and Portsmouth (e.g. by reducing speed limits, reallocating road space to cleaner transport modes, moving routes underground and/or away from urban areas, and/or supporting the uptake of cleaner technologies such as electric vehicles).

Addresses: Challenge 4

Facilitate an increase in radial journeys by public transport, including longer distance coach services, particularly to/from outer London and to/from Heathrow Airport, with improvements to interchange facilities to help facilitate this shift.

Addresses: Challenge 6

[14] Network Rail "Brighton Main Line Improvement Project", https://www.networkrail.co.uk/running-the-railway/our-routes/sussex/upgrading-the-brighton-main-line/brighton-main-line-improvement-project/, accessed September 2019.

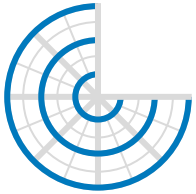
[15] **Figure 2.8** shows Air Quality Management Areas and **Figure 2.9** shows noise pollution. Both are relatively high/concentrated in the Portsmouth urban area.

[16] **Figure 2.12** shows road congestion on the A3 in the Guildford urban area.

[17] Port of Southampton "Port of Southampton Master Plan: 2015 – 2035 Consultation Draft (2016)", http://www.southamptonvts.co.uk/admin/content/files/New%20capital%20projects/Master%20Plan%202016/Master%20Plan%202016%20-%202035%20Consultation%20Document%20Oct%202016.pdf, accessed August 2020.

[18] **Figure 2.12** shows road congestion on this corridor.

[19] Network Rail "Modernising the Great Western Route", https://www.networkrail.co.uk/running-the-railway/our-routes/western/great-western-mainline/, accessed August 2019.



Orbital and coastal journeys

Context

4.10 Orbital and coastal journeys describe longer distance passenger journeys that use corridors that run perpendicular to the radial corridors described previously. The roads and railways serving these flows are sparser and have lower capacity and speeds than most radial corridors[20]. They provide important links between economic hubs across the South East but have perhaps not received the level of investment that their function warrants in recent years[21]. A map showing the key orbital corridors serving the South East, which also highlights key issues and opportunities affecting these corridors, is provided in **Figure 4.2**. A further map highlighting some of the rail connectivity issues that are described in more detail below is provided in **Figure 4.3**.

4.11 The corridors serving these orbital journeys are heavily constrained by protected landscapes, which tend to run along an east – west axis in the South East area between the ridges of the North and South Downs. In contrast to the radial corridors, the road and rail networks are not closely aligned on the orbital corridors.

4.12 Journey times by rail on orbital corridors are typically much slower than on radial routes (largely due to cross-regional services having to serve local, regional and interurban markets simultaneously). Most rail routes on these corridors are split between different train operators and, in some cases, are divided by gaps in electric traction. A single trip from Maidstone to Reading requires changing trains twice, and a trip from Ashford to Southampton requires more changes. Indeed, it is often faster to travel via London rather than use an orbital rail route[22].

[20] **Figure 4.2** shows the standard of the two orbital roads serving the South East. The A27 corridor includes significant sections of single carriageway road, which limits capacity on this corridor. Most of the orbital railway corridors are two-tracked railways served by relatively infrequent services (e.g. two trains per hour on the North Downs Line). Many radial railways, on the other hand, are four-tracked railways that are capable of providing more than 20 trains per hour (e.g. on the corridor between Gatwick Airport and East Croydon).

[21] Most of the major rail projects delivered in Control Periods 4 and 5 in the South East (e.g. High Speed 1, Crossrail 1, Thameslink) serve radial corridors. The orbital rail corridors (e.g. North Downs Line, East/West Coastway Lines) have not benefitted from the same scale of investment during this period.

[22] Determined by searching trips between Ashford and Southampton using https://www.thetrainline.com/, accessed August 2019.

Figure 4.2 Orbital and coastal journey challenges and opportunities (overview)

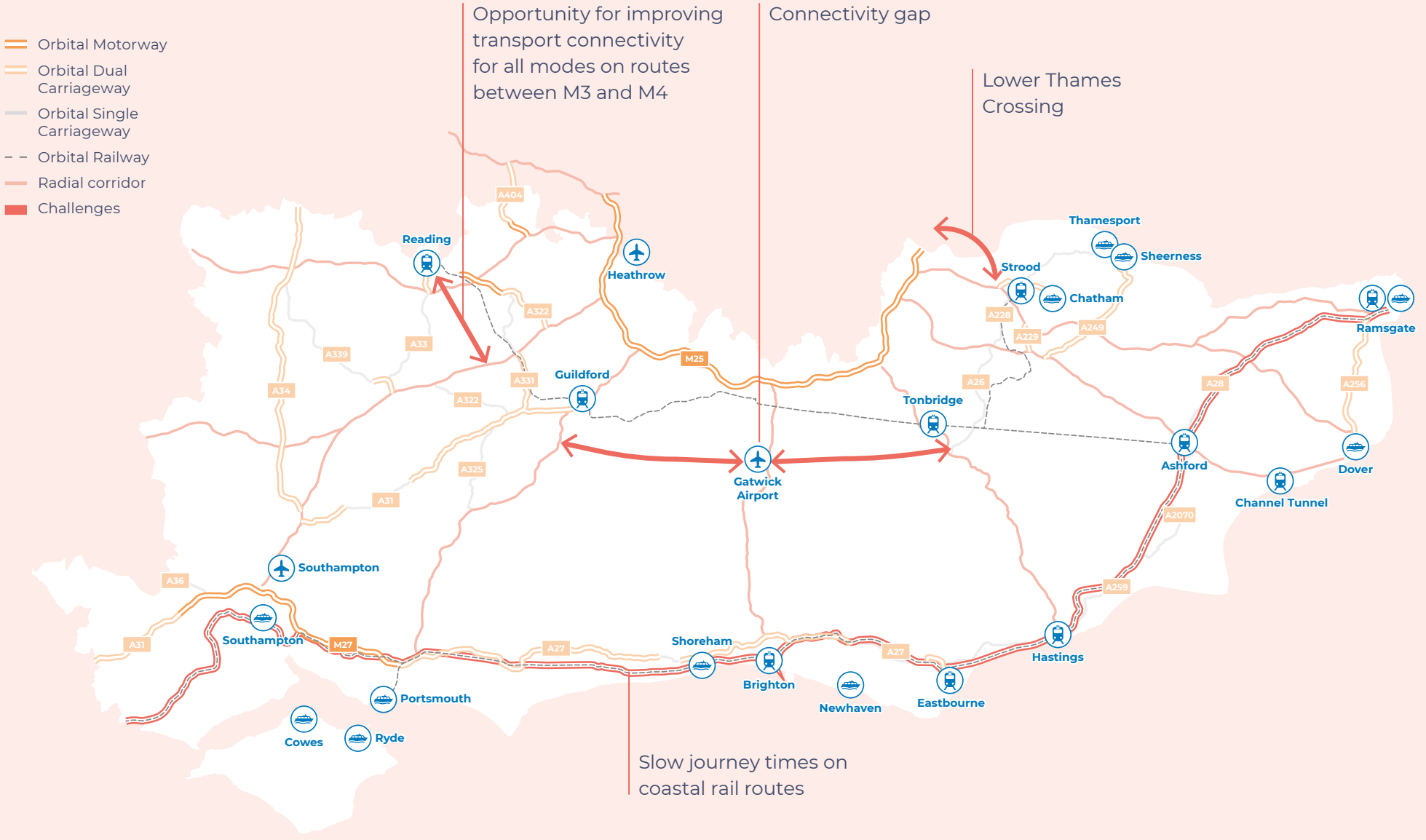
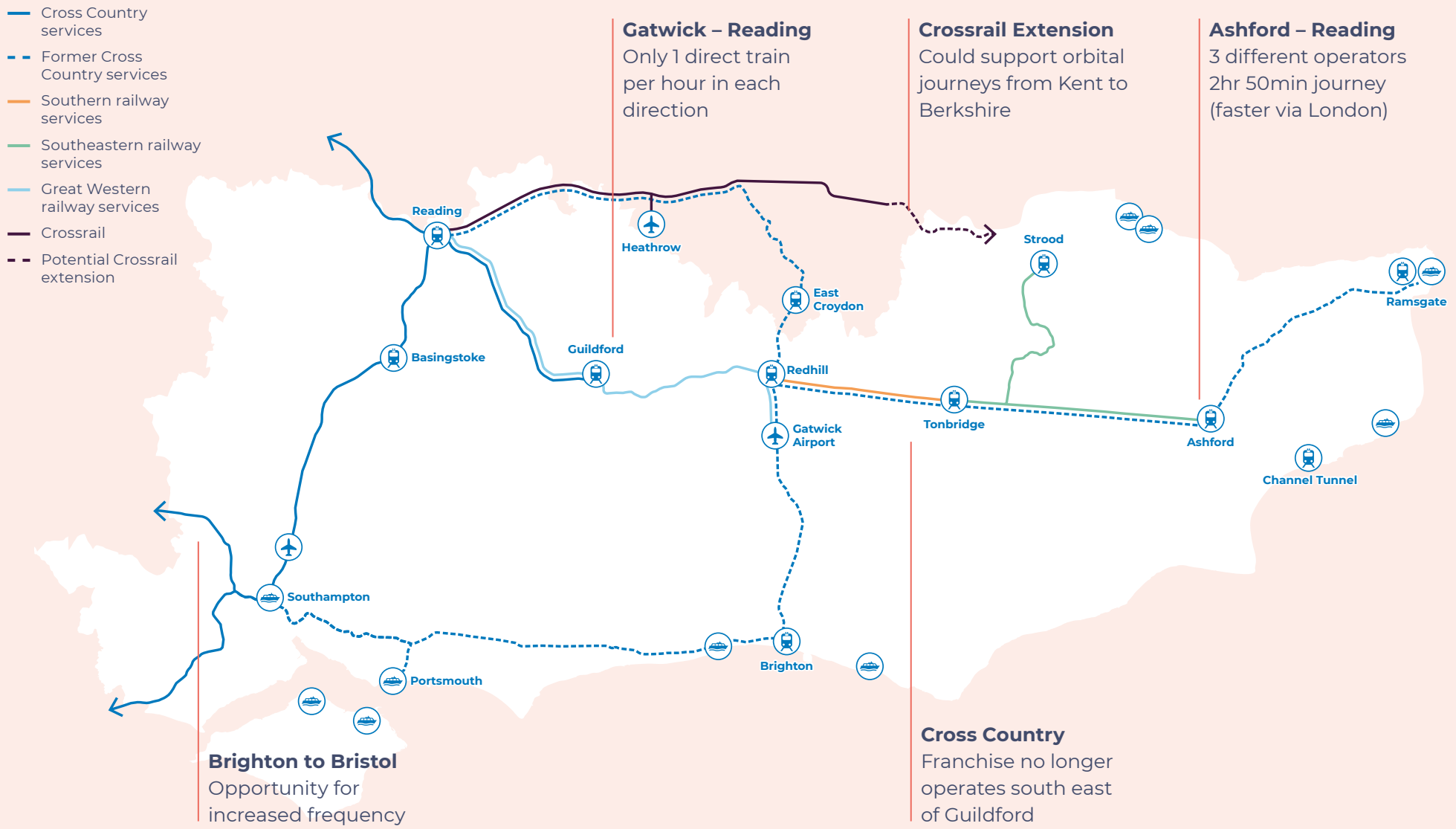


Figure 4.3 Orbital and coastal journey challenges and opportunities (railway connectivity)



Challenges and opportunities

4.13 The challenges and opportunities for orbital corridors vary across the South East area and are as follows:

Challenge 1

The M25 corridor is one of the busiest and one of the most congested corridors in Europe[23]. There is very little scope for increasing capacity on this road, especially on the south west quadrant (between Junctions 7 and 15) where traffic diverts onto local routes. There are currently limited public transport alternatives on this route, although work needs to be undertaken to identify how these could be improved. There is a risk that lack of capacity on this corridor will hold back economic development and productivity improvement for the whole country, not just the communities and businesses in the South East who depend on it. The Lower Thames Crossing, which will improve access to the North and Midlands via the northern part of the M25, could divert demand away from the south west quadrant.

Challenge 2

There are very few long-distance orbital rail services in South East England. This is partly because of the rail franchise geography, which splits east-west routes between up to three different operators (e.g. Reading to Ashford). It is also partly due to gaps in electrification on these corridors (e.g. Marshlink Line between Hastings and Ashford)[24] and the poor quality of infrastructure on some routes. Orbital connectivity to Gatwick Airport by rail from the east and the west is poor in comparison to the radial connectivity to the airport from the north and the south. Cross-country connectivity has declined on this corridor (intercity rail services from the Midlands and North of England used to run as far south and east as Gatwick Airport, Brighton, Ramsgate and Portsmouth)[25]. Furthermore, there are some parts of the orbital and coastal rail network that suffer from severe crowding in peak hours. The quality of the railway infrastructure on orbital and coastal corridors therefore presents a barrier to economic development on these corridors.

Challenge 3

The M27/A27/A259/East Coastway/ West Coastway Corridor has multiple issues and challenges. The M27/ A27/A259 serves as a grade separated expressway around Brighton, an urban distributor road in Worthing, a city centre corridor in Hastings, a rural single carriageway in Kent, an outer ring road in Chichester, and an inter-regional motorway in South Hampshire. The railway similarly tries to accommodate slow, stopping rural and suburban services alongside faster, non-stopping longer distance services[26]. This mixture of traffic types creates multiple conflicts between users and undermines capacity and performance on this corridor. The poor performance of this corridor represents a significant barrier to fostering sustainable growth along the South Coast – particularly growth that encourages more local employment in economic hubs such as Brighton. The proximity of this corridor to protected built and natural landscapes means it also impacts on quality of life and wellbeing.

Challenge 4

While there are several high capacity links between the A3, M3, M4 and M40 in the west of the South East area and the M2 and M20 in the east, **there are several gaps between the M20, M23/A23 and A327**[27]. This forces traffic to use the A27 and M25 and limits east-west access to Gatwick Airport and the "Gatwick Diamond" economic hub. Furthermore, there are some **bottlenecks on orbital links between the M3 and M4 such as the A404(M).**

Challenge 5

Some high capacity orbital links pass through urban areas such as Bracknell, which impacts negatively on air quality, safety and quality of life.

[23] INRIX Research, "Europe's Traffic Hotspots" (November 2016), http://inrix.com/wp-content/uploads/2017/01/INRIX_Europes-Traffic_Hotspots_Research_FINAL_lo_res.pdf (Table 3), accessed August 2019.

[24] Network Rail "South East Kent Route Study" (May 2018), page 21, https://cdn.networkrail.co.uk/wp-content/uploads/2018/06/South-East-Kent-route-study-print-version.pdf, accessed August 2019.

[25] The Argus "Train Services from Brighton Withdrawn" (October 2008), https://www.theargus.co.uk/news/3749781.train-services-frombrighton-withdrawn/ , accessed August 2019. Portsmouth services were reportedly withdrawn in 2003, based on evidence submitted by Transport Strategy Working Group officers.

[26] Southern Railway, "Timetable 27 (Southampton, Portsmouth and Chichester to Brighton" (May 2019), accessed August 2019 (link since removed due to release of COVID-19 timetables).

[27] **Figure 4.2** shows connectivity gaps between key radial corridors.

The initiatives that will help address orbital and coastal journey challenges are:

In the longer term, introduce holistic demand management initiatives that address congestion across the road network while avoiding displacement effects from one part of the network to another (ideally when alternative public transport options are available).

Addresses: Challenge 1

Deliver the Lower Thames Crossing, which will provide an alternative route around the north of the M25, avoiding the south west quadrant.

Addresses: Challenge 1

Encourage the wider electrification of the network and/or wider use of bi-mode trains across the south east to enable more direct, longer distance services on orbital corridors such as the North Downs Line.

Addresses: Challenge 2

Provide capacity enhancements at bottlenecks where orbital railways cross busy radial routes, such as at Redhill.

Addresses: Challenge 2

Improve long distance rail and coach connectivity and capacity particularly between the Midlands, South West and North of England into the South East area along orbital corridors and support the introduction of more direct east-west services to Gatwick Airport.

Addresses: Challenge 2

Build a consensus on a way forward for the M27/A27/A259/East Coastway/West Coastway corridor, based on a multi-modal approach that seeks to reduce conflicts between different users on this corridor and improves interchange facilities.

Addresses: Challenge 3

Improve orbital connectivity between Gatwick Airport and Hampshire and Kent.

Addresses: Challenge 4

Improve orbital links between the M3 and M4, ideally in a way that avoids directing heavy traffic through urban areas such as Bracknell.

Addresses: Challenge 4 and Challenge 5 – and potentially Challenge 1 by relieving pressure on the M25 South West quadrant.

Reduce the exposure to the adverse environmental impacts of road traffic on orbital corridors that pass through urban centres such as Gosport, Hastings, Portsmouth and Worthing, which may include reducing speed limits, reallocating road space to cleaner transport modes, and/or supporting the uptake of cleaner technology such as electric vehicles.

Addresses: Challenge 5

Inter-urban journeys

Context

4.14 Inter-urban journeys primarily describe medium-distance passenger journeys between economic hubs and the Strategic Road Network. These journeys are predominantly served by the South East area's Major Road Network and any railways that mirror these corridors.

4.15 Inter-urban journeys take several forms:

- There are journeys **between economic hubs** (such as town and city centres) across the country that do not use the Strategic Road Network at all (e.g. A26/A228 (Lewes – Strood));
- There are journeys between the Strategic Road Network and economic hubs (e.g. A264 (Horsham – M23));
- There are journeys that **shadow strategic road corridors** and act as distributor routes for these corridors (e.g. A4 (Slough – Newbury)). The routes that serve these journeys are highly susceptible to 'spill over' from the Strategic Road Network during periods of congestion and/or disruption.

4.16 In contrast to the (radial) Strategic Road Network, the railway network does not align particularly well to many of the corridors that serve inter-urban journeys. For this reason, the primary public transport alternative on the corridors that serve inter-urban routes is the bus. There are also some well-developed longer distance cycleways (some of which replaced abandoned railways).

Challenges and opportunities

4.17 Inter-urban routes, and the Major Road Network in particular, face the following challenges and opportunities:

Challenge 1

Routes that act as secondary routes for radial and orbital roads (e.g. A22, A24 and A30) fall below standard in places. Where possible, these routes should be developed to offer a consistent standard across the corridors they serve. In some cases, this may require investment in improvements to junctions and/or targeted widening. Several interventions have been identified by local transport authorities that aim to bring these routes up to a more consistent standard.

Challenge 2

Bus services risk deteriorating on inter-urban routes if congestion rises. This in turn risks slowing down bus services and reducing their attractiveness and viability. Interventions may be needed to provide bus priority measures and improved interchange facilities to ensure bus performance does not deteriorate, particularly on corridors within urban areas and/or that serve park and ride facilities on the edges of large urban centres.

Challenge 3

There are many gaps in the railway network serving inter-urban corridors, which represents an issue as rail is better placed to provide public transport services on many inter-urban corridors, although the introduction of new rail lines is expensive. For example, the West Coastway Line runs too far north of the A259 in places for it to provide a realistic public transport alternative on this road.

Challenge 4

There are several road safety 'hot-spots' on the Major Road Network, which may require intervention through speed limits, junction improvements and other interventions.

The initiatives that will help address inter-urban journey challenges are:

Support existing Major Road Network and Large Local Major schemes (e.g. A22 junction improvements) that bring secondary routes up to an appropriate standard.

Addresses: **Challenge 1** **and** **Challenge 4**

Support initiatives that enhance, or at the very least, maintain the viability of bus services on inter-urban corridors such as bus priority measures and improved interchange facilities between different forms of transport, including integration between public transport and cycling.

Addresses: **Challenge 2**

Deliver better inter-urban rail connectivity, such as direct rail services from Brighton/Lewes to Uckfield.

Addresses: **Challenge 3**

Local journeys

Context

4.18 Local journeys are short distance journeys to destinations within the same community, village, town or city. They also include the first or last part of longer distance journeys including the first mile/last mile movements that form an important element of other journey types described in this strategy.

4.19 Local journeys can be undertaken by almost any mode of transport, including walking and cycling. In rural areas, where the bus network is much sparser than in urban areas, the choice of mode for these journeys may be more limited.

4.20 This journey type is particularly well suited to the 'planning for successful places' framework outlined in Chapter 3 (**paragraph 3.15**). This framework emphasises the importance of protecting vulnerable users, particularly in urban areas. This approach guides transport and spatial planners towards creating spaces and corridors that are safe and attractive to pedestrians and cyclists and that prioritise public transport modes over other motorised transport.

4.21 Interventions needed to support local journeys are typically smaller in scale and tend to be sponsored by local authorities (as opposed to national and regional bodies) through their Local Transport Plans. Funding arrangements therefore tend to differ to larger schemes. Funds such as the 'Transforming Cities Fund' and 'Housing Infrastructure Fund' have been established to support initiatives at this scale. Specific mechanisms for developing improvements that will support local journeys have been put in place such as the Local Cycling and Walking Infrastructure Plans developed by local authorities.

Challenges and opportunities

4.22 The challenges relating to local journeys vary between urban and rural contexts. In urban environments they broadly relate to congestion and conflicts between different users and modes. In rural contexts, the key challenge is ensuring adequate levels of accessibility, especially for the most vulnerable of transport users. The key challenges and opportunities for this journey type are as follows:

[28] Department for Transport, "Rail Fares Index (January 2020) Statistical Release", https://dataportal.orr.gov.uk/media/1736/rail-fares-index-january-2020.pdf, accessed August 2019.

[29] Department for Transport, "Annual Bus Statistics England (2019/20)", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/852652/annual-bus-statistics-2019.pdf (Page 2 and Table 1), accessed May 2020.

Challenge 1

There are many conflicts between different modes and user types, particularly vulnerable users and people with reduced mobility in urban areas. There are several examples of urban corridors in the South East where too much priority is given to the car over other transport modes. This is particularly common where the Strategic Road Network passes through urban areas (e.g. at Worthing and Bexhill). There are also examples of corridors that serve both long-distance and short-distance trips, which risks creating conflicts between heavy road traffic and more vulnerable road users such as pedestrians and cyclists.

Challenge 2

There are significant issues with air quality and road safety on many urban corridors that serve local journeys, with emissions from vehicles operating in congested conditions and brake and tyre wear leading to poor air quality. Some of these corridors are designated as Air Quality Management Areas or Clean Air Zones. The poor air quality and road safety concerns have the effect of deterring people from walking and cycling, which in turn can generate higher demand for car transport, which risks undermining air quality and road safety further still. This behaviour also results in increased congestion, which reduces the speed and attractiveness of bus services.

Challenge 3

Integration between transport modes could be better. There are limits to the degree that bus and rail companies can align timetables and ticketing arrangements (due to competition law). There are places where bus hubs are not well connected to rail hubs, particularly in historic towns and cities (e.g. Canterbury). This presents significant barriers to achieving modal shift and for access for people with reduced mobility. There is scope for wider use of park and ride sites on the periphery of large urban centres, and for greater use of water-based transport in the Solent area and along the Thames. Smart ticketing could be rolled out further than it is at present. Looking further ahead, there are opportunities to better integrate 'mobility as a service' modes with traditional transport modes, including bus, rail and even by car (or other private vehicles).

Challenge 4

Bus services have come under significant pressure in recent years, particularly in rural areas. Local transport authority budgets have been squeezed in recent years and this has limited the level of support these authorities have been able to provide for socially necessary bus services. Any further retrenchment of the bus network risks leaving some of the most vulnerable members of society isolated and unable to access key services.

Challenge 5

Public transport is not always affordable for everybody. While very affordable rail fares are available for those who book in advance, rail fares have increased ahead of inflation in most years since privatisation in 1996, and today are reportedly among the highest in Europe[28]. Bus fares have also increased significantly ahead of inflation in recent years[29]. This trend risks putting access to transport beyond the means of some of the most vulnerable people in the South East. In addition, current season ticket options do not support flexible working practices.

Challenge 6

Rural areas have particular transport challenges. They are characterised by low population density, limited public transport service provision and high levels of car dependency. This denies people choice, opportunity and creates isolation by excluding those groups who do not have access to a car. These are most often the young, older people, those with disabilities and those in lower income households.

The initiatives that will help address local journey challenges are:

Develop high-quality public transport services on urban corridors, such as Bus Rapid Transit and Light Rail Transit, as appropriate.

Addresses: **Challenge 1** and **Challenge 2**

Improve air quality on urban corridors by, for example, reducing speed limits, reallocating road space to cleaner transport modes, and/or supporting the uptake of cleaner technology such as electric vehicles.

Addresses: **Challenge 2**

Prioritise the needs of pedestrians and cyclists over the private car, making streets safer for pedestrians, cyclists and public transport users to help encourage greater use of these sustainable forms of transport.

Addresses: **Challenge 1** and **Challenge 2**

Invest (or encourage others to invest) in integrated passenger information systems to provide passengers with dynamic, multi-modal travel information.

Addresses: **Challenge 3** and **Challenge 6**

Develop integrated transport hubs (bus, rail, park and ride, new mobility and cycle parking), integrated 'smart ticketing', and integrated timetables, where feasible.

Addresses: **Challenge 3**

Lobby government to protect and enhance funding for socially necessary bus services in rural areas.

Addresses: **Challenge 4** , **Challenge 5** and **Challenge 6**

Lobby government to reduce public transport fares in real terms in the longer term.

Addresses: **Challenge 5** and **Challenge 6**

Improve the accessibility of transport infrastructure and public transport services in urban and rural areas by investing in accessibility improvements and by ensuring streets and public places are accessible to all.

Addresses: **Challenge 1** , **Challenge 2** and **Challenge 6**

Encourage the roll out of integrated ticketing arrangements that enable multi- operator and multimodal journeys and new tickets that provide better value for those working flexible hours.

Addresses: **Challenges 3** , **Challenge 5** and **Challenge 6**

Improve the management of the supply and cost of car parking in urban areas to encourage modal shift to more sustainable forms of transport.

Addresses: **Challenge 1** and **Challenge 2**

Identify the potential for technological developments to transform transport and accessibility in rural areas as part of the development of a Future Mobility Strategy for the South East.

Addresses **Challenge 6**

[30] Transport for the South East "Logistics and Gateway Review" (October 2019).

International gateways and freight journeys

Context

4.23 As described in Chapter 2 (**paragraphs 2.64 to 2.68**), and the "Logistics and Gateway Review" technical report[30], the South East is home to many of the most important and busiest international gateways in the UK. These gateways serve both passenger and freight markets. Many of the people who use and who benefit from these gateways live outside the South East and, indeed, outside the UK. These international gateways are therefore critically important for the whole country. Many businesses in the North of England and Midlands depend on these gateways to access suppliers and customers, while many visitors to London pass through the Channel Tunnel and Gatwick Airport.

4.24 A map showing the key corridors serving international gateways and freight journeys in the South East is provided in **Figure 4.4**. However, it should be noted that inter-urban and local roads also support the delivery of 'first mile/last mile' freight services. These types of freight trips include those driven by strong recent growth in internet shopping, which rely on package deliveries.

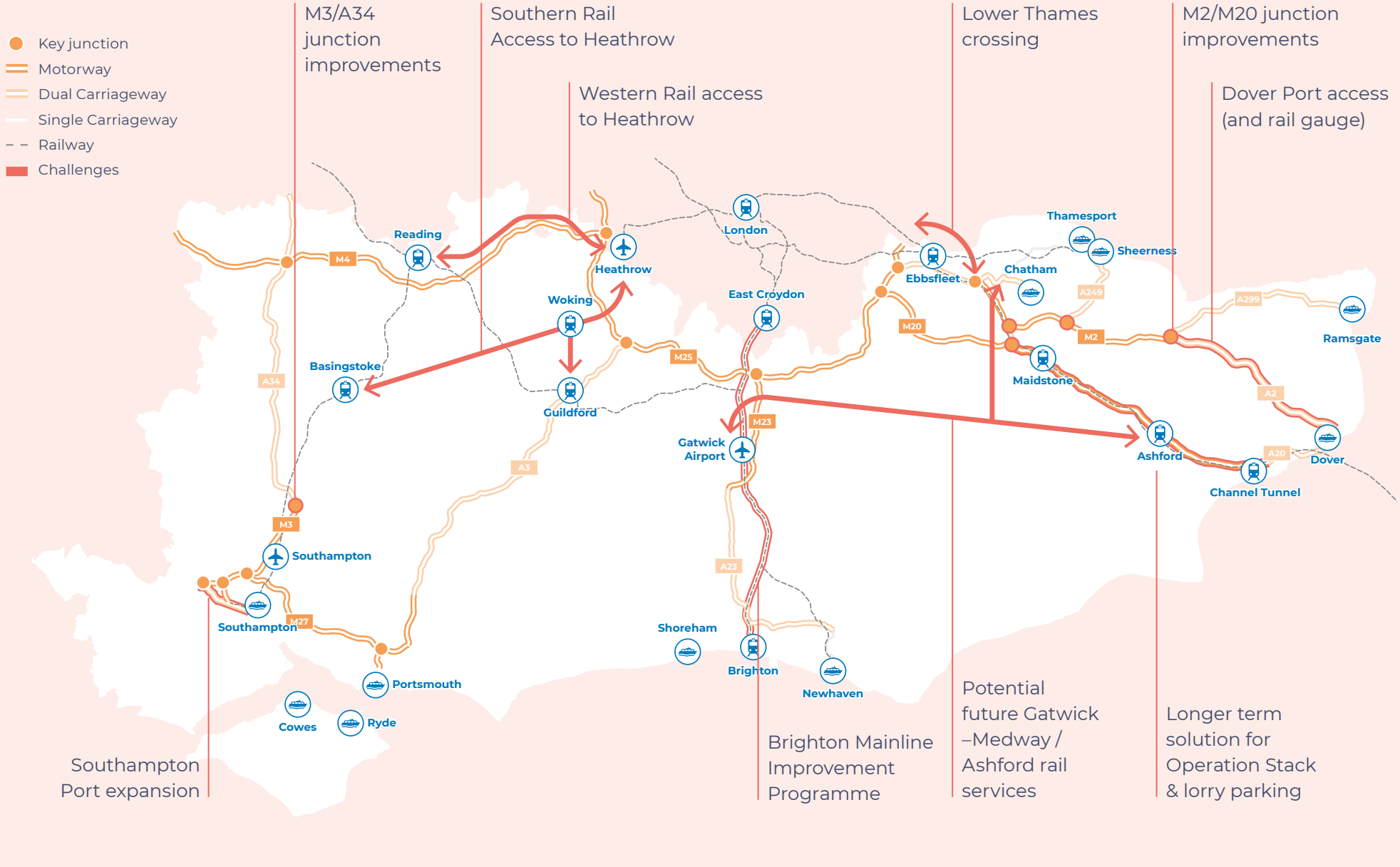
4.25 The international gateways in the Transport for the South East area are a focus for employment and commerce. Several large business parks have developed near Heathrow Airport (along the A4/M4 corridor) and Gatwick Airport (in the Gatwick Diamond cluster). The businesses located here see a benefit in being located to high-quality international hubs.

4.26 Most of the busiest international gateways are well connected to the Strategic Road Network and the railway network, although some offer better onward connectivity to the rest of the country than others (e.g. the Port of Southampton is better served by the Strategic Road Network and railway network than Shoreham Port).

4.27 The key corridors that enable road freight to access the South East's key ports are:

- the A2/M2 corridor from Dover to the East of England, Midlands and North of England via the Dartford Crossing;
- the A20/M20 corridor from Dover and the Channel Tunnel terminal at Cheriton to the East of England and North of England via the Dartford Crossing, or the West of England and Midlands via the M25 and M4/M40; and
- the M3/A34 corridor from Southampton to the Midlands.

Figure 4.4 Key freight and international gateway corridors



[31] Network Rail (2018) "South East Kent Route Study" (Page 48) https://www.networkrail.co.uk/wp-content/uploads/2018/06/South-East-Kent-route-study-print-version.pdf, accessed August 2019.

[32] Network Rail (2015) "Wessex Route Study" (Page 37) https://cdn.networkrail.co.uk/wp-content/uploads/2016/11/Wessex-Route-Study-Final-210815-1-1.pdf, accessed August 2019.

4.28 The most important corridors for accessing the South East area's airports are:

- the M4/Great Western Main Line and M25 corridors for Heathrow Airport; and
- the A23/M23/Brighton Main Line corridor for Gatwick Airport.

4.29 The key railway corridor for accessing the Channel Tunnel is served by the country's only high-speed railway – High Speed 1. This corridor could carry more rail freight and is underutilised at present. Currently, most rail freight from Kent is forced to pass through inner London (notably on a busy section of the South London Line between Nunhead and Wandsworth Road, which carries up to two freight trains per hour[31]) to reach the rest of the country. There are also heavy freight flows between Southampton and Reading, with up to 40 freight train paths in each direction, each day[32]. There are a number of constraints on increasing rail freight capacity, including continued growth in the number of local and regional passenger services using off peak capacity, the lack of alternatives to busy orbital routes across and around London, gauging and route clearance constraints and, limited opportunities on the network for freight trains to wait to find compliant train paths.

4.30 The operation of the South East area's international gateways impacts the South East area's surface transport networks and vice versa. For example, delays on the M25 could cause passengers to miss their flights, while delays on cross-channel ferry operations can cause significant tailbacks on the M20/A20 and M2/A2 highways.

4.31 Many of the South East area's international gateways are expected to grow. For example, Heathrow Airport is developing proposals for a third runway to the north-west of its current site; Gatwick Airport has launched its masterplan and a Development Control Order process to seek permission for expansion; while the Port of Southampton is developing proposals to expand its operations. It will be important to ensure that any future growth at these gateways can be accommodated, by more sustainable modes where possible, and minimising adverse impacts on the communities and environment nearby.

4.32 Any future transport strategy for international gateways and freight must provide enough flexibility to respond to the most plausible future relationship between the United Kingdom and the European Union.

4.33 There are exciting opportunities for improving the efficiency of road freight thanks to emerging technologies such as connected and autonomous vehicles (also known as 'CAVs').

4.34 Technology also offers scope for more efficient logistics models. Better information sharing between steps on the logistics chain has the potential to make freight delivery significantly more efficient. This could help to ensure that there is less congestion on the roads, liberating space for other road users and providing more reliable delivery services. Improvements in service-based freight models have the potential to reduce last mile delivery costs for operators and reduce multi-attempt delivery trips.

4.35 In addition to accessing international gateways, there are important regional freight flows that also depend on the Strategic Road Network.

4.36 Congestion on these roads has a significant impact upon the attractiveness of these international gateways for trade and has an impact upon other road users. Several of the largest international gateways in the South East lie near city centre locations (most notably Southampton and Portsmouth), therefore this congestion has a significant impact upon the local population. However, heavy goods vehicle movements account for a small percentage of vehicle movements, therefore tackling congestion around international gateways needs to comprise a rounded approach that encompasses all road users.

4.37 The provision of adequate lorry parking and driver welfare facilities are critical to the operation of the freight and logistics sector in the UK. There is currently a shortage of lorry parking both nationally

and in the South East. Inappropriate lorry parking causes issues for not only residents with litter, noise, damage to kerbs/verges but also for the drivers, with a lack of adequate facilities causing potential road safety issues, and concerns of personal safety/crime towards drivers and their loads. The lorry parking issue was examined as part of the Freight Logistics and Gateways study that was undertaken as part of the development of the transport strategy[33]).

4.38 The freight market and international gateways in the South East predominantly serve two distinct markets: containerised freight and roll-on, roll-off shipping. These two markets are served by different components of the transport network. Transport networks need to be adaptable and flexible to the changing make up of freight as these two distinct markets evolve in the future.

Challenges and opportunities

4.39 The key challenges to international gateways and freight relate primarily to accommodating future growth and reducing the impact of freight transport on the environment:

Challenge 1

Heathrow Airport is planning to develop a third runway to the north-west of the current site, which will enable up to three aircraft to take off and/or land simultaneously. This expansion will enable a 50% increase in air traffic movements and a 60% increase in passengers (compared to 2016)[34]. Additional growth at Heathrow, which currently has a public transport surface access mode share of 40%[35], presents significant transport and environmental risks to the South East. Currently there are no rail links from the west or the south to Heathrow Airport. It is critically important that viable public transport alternatives are put in place to enable access to and from Heathrow Airport by other means than the car. These improvements are required regardless of the current expansion plans. If expansion proceeds, these improvements will need to be accompanied by demand management policies (e.g. parking and drop-off charges). **Gatwick and Southampton airports** also have expansion plans. Gatwick has plans for expansion within the existing airport estate by bringing its emergency runway into use. This will bring significant, challenges for both passenger, airport worker and freight flows on corridors serving this airport. Southampton Airport also wants to extend its runway and increase the number of flights. Again, the additional passenger and employee journeys arising from this expansion should principally be mitigated by increasing sustainable transport mode share.

Challenge 2

The roads serving the **Port of Dover and the EuroTunnel terminal** routinely suffer from poor resilience due to port and border operations on both sides of the English Channel, which can cause freight traffic to build up on the M20[36]. The A2 trunk road east of Canterbury could be further developed to strengthen the resilience of both corridors serving these two important gateways.

Challenge 3

There are opportunities for port expansion at several locations in the South East, including at **Southampton** and (to a lesser extent) at **Dover**. Any expansion will need to be supported by appropriate access to the highway and railway networks.

Challenge 4

The **Dartford Crossing (M25)** currently experiences severe congestion. Highways England is developing the Lower Thames

[33] Transport for the South East "Logistics and Gateway Review" (October 2019).

[34] Heathrow Airport Ltd "Heathrow Expansion: Facts and Figures" https://www.heathrowexpansion.com/uk-growth-opportunities/facts-and-figures/, accessed May 2020.

[35] Greater London Authority "SurfaceAccess to Heathrow Airport Presentation" (2015), https://www.london.gov.uk/moderngov/documents/b13397/Minutes%20-%20Appendix%204%20-%20Airports%20Surface%20Access%20Presentation%20Tuesday%2010-Nov-2015%2010.00%20Transport%20Co.pdf?T=9 (Slide 4), accessed August 2019

[36] The Kent County Council Local Transport Plan calls for a long-term solution to Operation Stack and additional facilities for lorry parking on the M20 corridor (see https://www.kent.gov.uk/__data/assets/pdf_file/0011/72668/Local-transport-plan-4.pdf, page 3).

Crossing scheme to relieve congestion on this route. However, this scheme risks diverting traffic from the M20 to the M2/A2 corridor (as the crossing route starts at Strood). This may place additional pressure on the A229 between the M2 and M20.

Challenge 5

Rail freight mode share nationally is relatively low[37] and there are constraints limiting the scope of rail freight to expand (for example, on the A34 corridor). In some areas (e.g. Dover) there are constraints in the railway gauge that limit the transport of containers by rail. There are understandable commercial reasons for a preference for road haulage, especially as the nature of logistics is changing (by moving away from bulk deliveries towards smaller 'just-in-time' package deliveries). However, this is holding back the potential for freight to contribute to reducing carbon emissions and improving air quality in the South East.

Challenge 6

Freight is dependent on some of the most congested roads in the South East area. This is particularly the case for the M25 and the A34 corridors.

Challenge 7

There is a **shortage of lorry parking and driver welfare facilities in the South East** inhibiting the efficient operation of the freight sector, causing potential road safety issues, and concerns of personal safety/crime towards drivers and their loads.

Challenge 8

It is much harder to reduce heavy goods vehicle emissions than lighter road vehicles. Battery powered freight vehicles are less developed than smaller electric vehicles. Different traction technologies to the battery may be needed to provide non fossil fuel alternatives for freight vehicles.

Challenge 9

Finally, the **United Kingdom's future relationship with the European Union** also presents potentially significant uncertainty and challenges for the South East area's international gateways. There is a risk of more disruption at the Channel ports in the short term, which could disrupt transport networks across Kent. In the longer run, there could be a shift in freight patterns.

[37] Department for Transport "Rail Factsheet" (2019), page 6, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/851082/rail-factsheet-2019.pdf, accessed May 2020.

The initiatives that will help address key international gateway and freight journey challenges are:

Improve public transport access to Heathrow Airport through delivering the western rail and southern access schemes, and improvements in public transport access to Gatwick Airport and Southampton Airport.

Addresses: Challenge 1

Support the use of demand management policies at Heathrow Airport, such as vehicle access charges, to minimise traffic growth arising from expansion at this airport.

Addresses: Challenge 1

Provide appropriate links and improvements to the highways and railway networks at expanding and/or relocating ports in the South East. This should include improvements to road routes, such as the A34 and A326, and parallel rail routes (serving Southampton) and A2 (serving Dover).

Addresses: Challenge 2 and Challenge 3

Deliver Lower Thames Crossing and associated improvements on the A229, Junctions 3, 5 and 7 of the M2 and Junction 6 of the M20. Deliver improvements at Junction 9 of the M3.

Addresses: Challenge 4

Implementing rail freight schemes, such as electrification and gauge enhancements, to increase capacity on strategic routes and encourage modal shift from road to rail.

Addresses: Challenge 5 and Challenge 6

Improve the efficiency of freight vehicle operations through adoption of new technologies.

Addresses: Challenge 7

Help international gateways adapt to changes in trade patterns. This may include investing in facilities such as customs checkpoints away from key locations such as Dover.

Addresses: Challenge 9

Develop a Freight Strategy and Action Plan for the South East to improve the efficiency of freight journeys, and specifically identify potential solutions to the current shortage of lorry parking and driver welfare facilities.

Addresses: All Challenges

[38] Transport for the South East "Future Transport Technology" (October 2019).

[39] Transport for the South East "Ticketing Options Study" (October 2019).

[40] Transport for the South East "Future Transport Technology" (October 2019).

Future journeys

Context

4.40 Future journeys encompass any journey type that may be facilitated by an emerging technology. This is an exciting and rapidly developing area of transport that has the potential to deliver significant change to all aspects of mobility. A more detailed exploration of the potential impact of this emerging technology on the South East area is described in the "Future Transport Technology"[38] and "Ticketing Options Study"[39] technical reports

4.41 This transport strategy sets a vision for the South East in 2050, which is more than thirty years in the future. To understand the degree of change that could be delivered over this period, one only needs to consider what the world looked like thirty years ago in 1990. At this time:

- The Cold War was coming to an end following the fall of the Berlin Wall;
- China had not yet emerged as a superpower; and
- The internet could only be accessed by a tiny portion of the population.

4.42 Transport was also very different thirty years ago. In 1990:

- Railway patronage (by passengers) was approximately half the level it is today;
- The Channel Tunnel was still under construction;
- The low-cost airline industry was yet to emerge; and
- Many of the major roads in the South East had not been built, including parts of the M20 and M25.

4.43 It is therefore difficult to predict which technologies and social trends will influence the future over a thirty-year time horizon. That said, some trends seem more certain than others, and some of these trends will have a greater impact on transport demand than others. In the "Future Transport Technology" Technical Report[40], six themes of trends are identified that have the potential to significantly affect transport demand. These themes are:

- **Demographic trends:** Including a growing, ageing population and urban densification;
- **Social trends:** Including greater acceptance of 'sharing', higher expectation of immediacy and customer centricity, and a greater appreciation of experiences over assets;
- **Environmental attitudes:** Greater awareness and concern about climate change, air quality, scarcity of resources, circular economy and interest in greener technologies;
- **Economic changes:** Including the rise of the 'gig economy', increased automation, new business models, and on-demand manufacturing; and
- **Political landscape:** Including increased devolution to regions and countries and increasing conflict between globalisation and protectionism.

4.44 The technologies that are arguably most likely to succeed are those that respond best to the challenges and trends outlined above. The "Future transport strategy" categorises these technologies into the four following groups:

- **Connected**, which encompasses the movement of data between people, other people, vehicles, assets and systems;
- **Autonomous**, which includes any technology that replaces 'mundane' human tasks with technology;
- **Alternative fuels**, which includes the decarbonisation of energy production, storage and consumption; and
- **Shared**, which describes the sharing of services that traditionally were 'owned' by individuals.

4.45 The technologies outlined above are delivered to the public through different business models, which include:

People-based mobility models, such as:

- Ride-sharing, which match private vehicle drivers with potential passengers (sometimes co-workers) making similar regular or one-off trips;
- Ride-sourcing, which match customers with available rides using a smartphone application and enable users to pay on account via pre-approved payment methods, with prices set according to supply and demand; and
- Asset-sharing, which allow customers to access and to share use of different mobility modes without having to own them (e.g. car or bicycle). Assets are generally available at permanent or semi-permanent parking locations and booked, paid for and located via an application.

Service-based mobility models, such as:

- Mobility as a service, which integrates multimodal public and private sector mobility services through digital platforms by incorporating travel information, payments, and reservation systems into a single application;
- Parking platforms, which provide consumers with information and app-based payment functions to reduce the traditional problems associated with finding and paying for parking; and
- Digital as a mode, which uses digital connectivity to reduce/remove the need to travel (e.g. by enabling remote working and remote access to services including health and education).

Freight-based mobility models, such as:

- Digital-based freight models, which offer customers easier access to real-time and price transparent freight services, which helps improve supply chain visibility and asset utilisation; and
- Service-based freight models, which use data and automated technologies to provide customers with a wider selection of flexible last-mile delivery and collection options.

4.46 The impact that these trends have upon transport patterns will be modulated by 'critical uncertainties', which include:

- willingness to share data;
- willingness to adopt new technologies;
- preferences for sharing transport or travelling alone;
- future levels of automation;
- future rates of electrification; and,
- the role of/authority of the private and public sectors.

4.47 These uncertainties are significant and could have a major bearing on future technological development. This makes it difficult to develop a narrow or specific strategy when it comes to future journeys. Therefore, this strategy identifies broad challenges and opportunities relating to future journeys for further consideration.

Challenges and opportunities

4.48 While Transport for the South East may not be able to control all the levers driving the development of technology in the South East, it can help steer the direction and uptake of these innovations and shape the regulatory framework governing them. It is important to ensure that these new technologies develop in a way that supports this transport strategy (e.g. by contributing to zero-net carbon) rather than undermining any of its objectives (e.g. by encouraging mode-shift from walking/cycling/public transport to shared taxis and potentially contributing to traffic growth). Transport for the South East's overarching objective for future journeys is to ensure they are accessible to all, environmentally acceptable, and do not undermine the efficiency of the transport network.

Challenge 1

There are gaps in electric and digital infrastructure. The South East's power distribution network needs to have the capacity to accommodate the uptake of electric vehicles. It also needs to provide widespread access to charging points to ensure electric vehicles can be conveniently charged anywhere in the region. While there has been some investment in charging infrastructure in the South East, this has not yet been consistent, meaning there are gaps in accessing them. Similarly, there are gaps in internet connectivity across the region, which could undermine the development of internet-based services and (in the longer term) connected vehicles.

Challenge 2

There is a risk some parts of the South East may be 'left behind' as some future mobility initiatives may not be accessible to all because of their cost or the technology needed to access them. Many of the service-based mobility models described above have the potential to make the lives of residents around the South East significantly easier, particularly those who have limited mobility, such as ageing members of the population who struggle to access conventional public transport modes. However, these services may not be affordable to all users or economically viable in rural areas, which means that some parts of the South East risk being left behind. There is also a risk that new mobility services may only be accessible through channels that target particular demographics (e.g. younger people with access to smart phones), which may mean other parts of society who cannot easily access these channels will miss out on the benefits these services offer.

Challenge 3

There is a risk that new technology may undermine walking, cycling and public transport modes. There is some evidence from North America that the popularity of service-based mobility models is attracting users away from public transport to private vehicles (albeit taxis rather than privately owned vehicles). If this trend were to emerge in the South East, then this could risk increasing road traffic congestion, thus undermining any economic or environmental benefits that might arise from the uptake of new technologies.

Challenge 4

There is a risk that new technologies may further fragment the delivery of transport services. This has the potential to undermine strategic planning in the South East and make it difficult to find ways of better integrating different transport modes to promote sustainable transport choices. This is particularly pertinent of smart ticketing technologies, which are currently being developed by multiple operators across the South East area.

Challenge 5

There is a risk that the uptake of internet shopping will generate more freight traffic, particularly freight that is not well suited to more sustainable transport modes such as rail.

Challenge 6

Alternative fuel private vehicles won't solve the congestion problem. Although the switch to electric cars may reduce harmful greenhouse gas emissions, it will not reduce traffic levels on the network.

The initiatives that will help address key future journey challenges are:

'Future-proof' the digital and energy infrastructure within the South East by making provision for accelerated future uptake. The South East Energy Strategy that has been produced jointly by the Coast to Capital, Enterprise M3 and South East Local Enterprise Partnerships aims to achieve clean growth from now until 2050 in energy across the power, heat and transport sectors[41]. The Thames Valley Berkshire LEP has produced a similar strategy for their area[42].

Addresses: Challenge 1

Incorporate 'mobility as a service' into the current public transport network (and potentially for private vehicles too), to provide better accessibility for a wider range of the population in both rural and urban areas.

Addresses: Challenge 2, Challenge 3, Challenge 4 and Challenge 5

Encourage consistency in the 'smart ticketing' arrangements across the South East, expanding the use of 'pay as you go' and contactless payment.

Addresses: Challenge 4

Develop a Future Mobility Strategy for the South East to enable Transport for the South East to influence the roll out of future journey initiatives in a way that will meet Transport for the South East's vision.

Addresses: All Challenges

Conclusions

In this section we have shown how we have applied the principles described in Section 3 to the six Journey Types to address the key transport challenges facing the South East area. In the following section, we describe how we plan to implement this Transport Strategy.

[41] Coast to Capital, Enterprise M3, and South East Local Enterprise Partnerships "Local Energy Strategy" https://www.energyhub.org.uk/wp-content/uploads/2019/09/Energy-South2East-Local-Energy-Strategy.pdf, accessed May 2020.

[42] Thames Valley Berkshire Local Enterprise Partnership "Energy Strategy" https://www.energyhub.org.uk/wp-content/uploads/2019/09/Thames-Valley-Berkshire-Energy-Strategy-May-2019.pdf, accessed May 2020.

Chapter 5

Implementation

Introduction

5.1 This chapter outlines how the transport strategy will be delivered. It outlines broad priorities for interventions, outlines a high-level schedule for these interventions, describes who will be involved in delivering the transport strategy, how progress will be monitored, governance arrangements, and next steps.

Priorities for interventions

5.2 The previous chapter highlighted examples of schemes, interventions and policies that will support the delivery of this transport strategy. Some of the schemes identified are relatively advanced in their development. Others are at feasibility stage, or earlier, in their development cycle. Five area studies will be undertaken to identify the particular schemes and interventions that will be needed in different parts of the Transport for the South East Area. Further technical work will be undertaken to identify the potential impacts of the Covid-19 pandemic on travel behaviour, employment patterns and the economy in the South East. The outputs from this work will be used to inform the area studies.

5.3 It is acknowledged that the current pipeline of highway and rail schemes being delivered through the Road Investment Strategy and rail investment programmes will address short term capacity and connectivity challenges. However, in the longer term, the focus should shift away from road building ('planning for vehicles') towards investing in public transport services ('planning for people') and, supporting policies such as integrated lands use and transport planning and demand management policies ('planning for places').

5.4 In the course of developing the strategy, a wide range of partners and stakeholders have been asked for their priorities for schemes and interventions across the South East. The interventions have been categorised by importance (high, medium and low) and timeline (short, medium and long term).

5.5 The priorities for interventions and suggested timescales identified by partners and stakeholders are shown in **Figure 5.1** and are summarised below:

- Changing traffic flow patterns of the road network means there will always be a need for localised **highway schemes** to address issues that will continue to arise. New roads, improvements or extension of existing ones should be prioritised in the short term but become a lower priority in the longer term. Highways schemes should target port access, major development opportunities and deprived communities.

- **Railway schemes** are high priority across all timelines – Brighton Main Line upgrades are prioritised for the short term, while improvements to orbital rail links such as the East and West Coastway, Gatwick to Reading, Kent to Gatwick and new Crossrail lines are a longer-term goal.
- **Interchanges** are a high priority across all timelines where these facilitate multi modal journeys and create opportunities for accessible development.
- **Urban transit schemes** (e.g. Bus Rapid Transit and/or Light Rail Transit schemes, where appropriate for the urban areas they serve), are high priority and generally medium to long term.
- **Public transport access to airports** is a high priority and, in the case of Heathrow Airport, must be delivered regardless of whether airport expansion takes place.
- **Road and public transport access to ports** is also high priority and prioritised for delivery in the short term.
- **Technology** and innovation in transport technology – vehicle, fuel and digital technologies – is supported, however the widespread roll-out of some beneficial technologies may only be realised in the medium to long term.
- **Planning policy** interventions are relatively high priority and short term.
- **More significant demand management policy** interventions are a much longer-term goal.

Figure 5.1 The Phasing of Priority Interventions

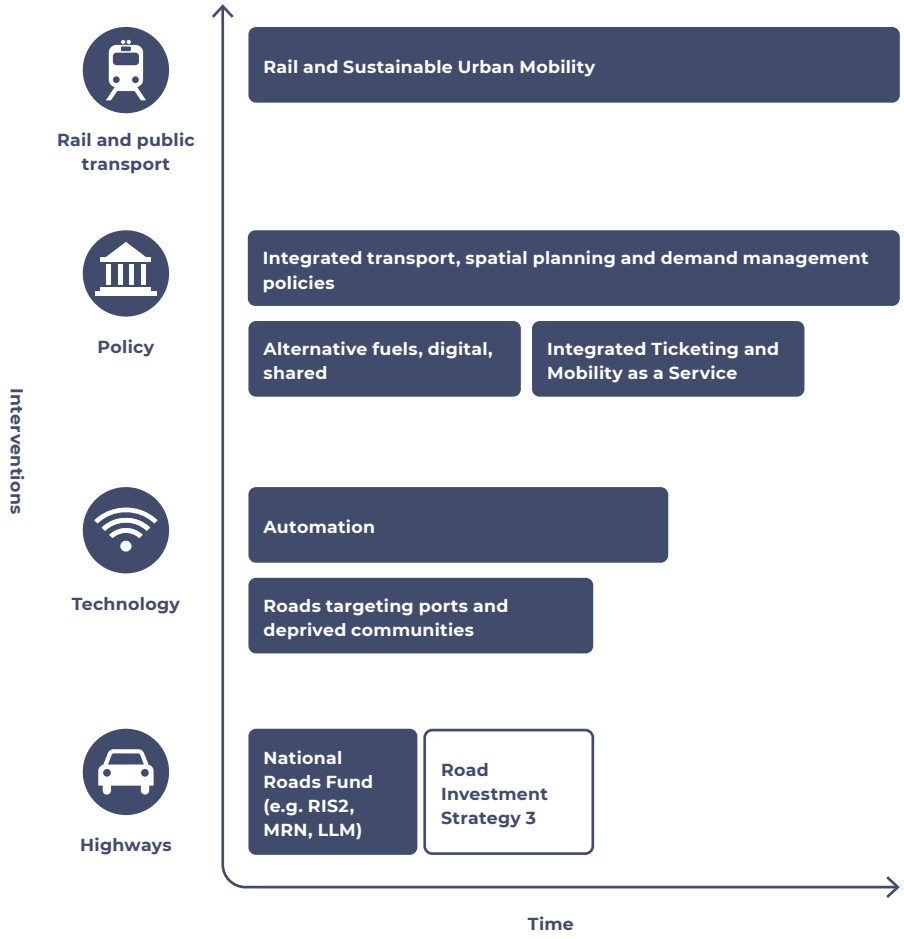


Figure 5.2 Financing options

		Security			
		Council Balance Sheet	**Multiple Balance Sheets**	**Corporate Balance Sheets**	**Asset Backed Security**
Source	**Institutional Investors**	–	• UK Municipal Bond Agency	• Corporate Bonds	• Project Bonds
	Commercial	• Commercial Banks	–	• Developer Lending	• Project Finance / Asset Backed Vehicles
	Policy Bank / Multilateral	• Policy Banks	–	–	• Multilateral Project Finance
	HM Treasury	• Public Works and Loan Board	–	–	–

Funding and financing

5.6 Funding sources and financing arrangements are an important consideration in the development of an implementation plan for schemes and interventions identified in the transport strategy. In this context, it should be noted that:

- Funding refers to the capital which pays for the up-front costs of the scheme (i.e. it does not need to be directly repaid); and
- Financing refers to how the capital requirements of the scheme are met from various sources that are repaid over time. Financing is generally required for a project if funding is insufficient to cover the projects total costs during construction.

5.7 A "Funding and Financing Options" technical report has been developed as part of the transport strategy, which explores potential funding mechanisms for schemes and interventions. The approach it sets out has been designed so that it can be tailored to specific infrastructure investment projects.

Monitoring and evaluation

5.8 Due to the number and scale of schemes and interventions put forward as priorities, it is acknowledged that multiple sources of funding and financing will be required to deliver the transport strategy. A summary of the most common routes to financing infrastructure is provided in **Figure 5.2**.

5.9 Public finance is likely to remain the key source of funding for highway and railway infrastructure in the near future. Looking further ahead, in order to manage demand and invest in sustainable transport alternatives, new funding models will need to be pursued in future in order to secure finance to implement schemes. This could include funding models, such as hypothecated road user charging schemes, as a means of both managing demand in a 'pay as you go' model or as part of a 'mobility as a service' package, as well as providing much needed funding for investing in sustainable transport alternatives. Transport for the South East will continue to identify and secure additional sources of funding to help deliver the transport strategy.

5.10 A mechanism for monitoring and evaluating the progress of the transport strategy will be established. This will include monitoring the delivery of the priorities summarised in **paragraph 5.5**. It will also include tracking outcome orientated key performance indicators, which are described below. In addition, any interventions arising from the transport strategy would need to demonstrate compliance with environmental legislation. Development that would be likely to have a significant effect on a European Natura 2000 sites (designated for nature conservation)[1] will be subject to assessment under habitats regulations at project application stage.

5.11 Transport for the South East will use a set of key performance indicators to monitor how well the strategy is progressing. These key performance indicators will consist of a range of measures that will be used to assess the extent to which the strategic priorities, outlined in Chapter 3 (**paragraph 3.15**), are being achieved. The key performance indicators that are going to be used to monitor the performance are listed in **Table 5.1** below.

[1] European Environment Agency "The Natura 2000 protected areas network" (2020) https://www.eea.europa.eu/themes/biodiversity/natura-2000/the-natura-2000-protected-areas-network, accessed May 2020.

Table 5.1 Key Performance Indicator

	Strategic Priorities	Indicators
Economic	Better connectivity between our major economic hubs, international gateways (ports, airports and rail terminals) and their markets.	The delivery of improved road and railway links on corridors in need of investment. Improved public transport access to Heathrow and Gatwick Airports. Improved long-distance rail services (measured by journey time and service frequency).
	More reliable journeys for people and goods travelling between the South East's major economic hubs and to and from international gateways.	Improved Journey Time Reliability on the Strategic Road Network, Major Road Network, and local roads (where data is available). Improved operating performance on the railway network, measured by Public Performance Measure (PPM) and other available passenger and freight performance measures, where available (e.g. right time delivery).
	A transport network that is more resilient to incidents, extreme weather and the impacts of a changing climate.	Reduced delays on the highways network due to poor weather. Reduced number of days of severe disruption on the railway network due to poor weather. Metrics relating to reduced delay on road network suffering from Road Traffic Collisions.
	A more integrated approach to land use and transport planning that helps our partners across the South East meet future housing, employment and regeneration needs sustainably.	The percentage of allocated sites in Local Plans that are developed in line with Local Plans.
	A 'smart' transport network that uses digital technology to manage transport demand, encourage shared transport and make more efficient use of our roads and railways.	Increase in the number of bus services offering 'Smart Ticketing' payment systems. Number of passengers using 'Smart Ticketing'. Number of passengers using shared transport.
Social	A network that promotes active travel and active lifestyles to improve our health and wellbeing.	Increase in the length of the National Cycle Network in the South East. Increase in the length of segregated cycleways in the South East. Increase mode share of trips undertaken by foot and cycle. Number of bikeshare schemes in operation in the area. Mode share of walking and cycling.

	Strategic Priorities	Indicators
Social	Improved air quality supported by initiatives to reduce congestion and encourage further shifts to public transport.	Reduction in NOx, SOx and particulate pollution levels in urban areas.
	An affordable, accessible transport network for all that promotes social inclusion and reduces barriers to employment, learning, social, leisure, physical and cultural activity.	A reduction in the indicators driving the Indices of Multiple Deprivation in the South East, particularly in the most deprived areas in the South East area.
	A seamless, integrated transport network with passengers at its heart, making it simpler and easier to plan and pay for journeys and to interchange between different forms of transport	Increase in the number of cross-modal interchanges and/or ticketing options in the South East.
	A safely planned, delivered and operated transport network with no fatalities or serious injuries among transport users, workforce or the wider public.	Reduction in the number of people Killed and Seriously Injured by road and rail transport.
Environmental	A reduction in carbon emissions to net zero by 2050 to minimise the contribution of transport and travel to climate change.	Reduction in carbon emissions by transport.
	A reduction in the need to travel, particularly by private car, to reduce the impact of transport on people and the environment.	A net reduction in the number of trip kilometres undertaken per person each weekday. A reduction in the mode share of the private car (measured by passenger kilometres).
	A transport network that protects and enhances our natural, built and historic environments.	No transport schemes or interventions result in net degradation in the natural capital of the South East, instead aiming for environmental net gain for priority ecosystem services (such as natural flood risk management). No transport schemes or interventions result in a net loss of biodiversity, but seek to achieve a minimum of 10% net gain in biodiversity managed for 30 years, in line with the requirements of the Environment Bill.
	Use of the principle of 'biodiversity next gain' (i.e. development that leaves biodiversity in a better state than before) in all transport initiatives	Use of the principle of 'biodiversity next gain' in all transport initiatives. No transport schemes or interventions result in a net loss of biodiversity, but seek to achieve a minimum of 10% net gain in biodiversity managed for 30 years, in line with the requirements of the Environment Bill.
	Minimisation of transport's consumption of resources and energy.	Reduction in non-renewable energy consumed by transport.

Transport for the South East's role

Powers and functions

5.12 Transport for the South East proposes to become a statutory sub-national transport body, as described in Part 5A of the Local Transport Act 2008 (as amended). Transport for the South East proposes to have the 'general functions' of a sub-national transport body as set out in Section 102H (1) of this legislation. The general functions are:

- to prepare a transport strategy for the South East;
- to provide advice to the Secretary of State about the exercise of transport functions in relation to the South East (whether exercisable by the Secretary of State or others);
- to co-ordinate the carrying out of transport functions in relation to the South East that are exercisable by different constituent authorities, with a view to improving the effectiveness and efficiency in the carrying out of those functions;
- if the sub-national transport body considers that a transport function in relation to the area would more effectively and efficiently be carried out by the sub-national transport body, to make proposals to the Secretary of State for the transfer of that function to the sub-national transport body; and
- to make other proposals to the Secretary of State about the role and functions of the sub-national transport body.

5.13 Under current legislation relating to sub-national transport bodies sets out that the Secretary of State will remain the final decision-maker on national transport strategies. However, the Secretary of State must have regard to a sub-national transport body's statutory transport strategy. This demonstrates the need for the strong, ongoing relationship between Transport for the South East and government on developing schemes and interventions.

5.14 The consultation on the draft Proposal to Government ran from 7 May to 31 July 2019. This process was concurrent with the development of the draft transport strategy. The draft proposal identifies powers required in order to successfully deliver the transport strategy. These powers include:

- **General functions:** The powers to prepare a transport strategy, advise the Secretary of State, co-ordinate the carrying out of transport functions, make proposals for the transfer of functions, make other proposals about the role and functions of the sub-national transport body;
- **Railways:** The right to be consulted about new rail franchises and to set High Level Output Specification for the railway network in the South East;
- **Highways:** The powers to set a Road Investment Strategy for the Strategic Road Network in the South East, to enter into agreements to undertake certain works on roads in the South

East, to acquire land to enable the delivery of schemes, and to construct highways, footpaths, bridleways;

- **Capital grants for public transport facilities:** The powers to make capital grants for the provision of public transport facilities;
- **Bus service provision:** The power to secure the provision of bus services through Quality Bus Partnerships;
- **Smart ticketing:** The powers to introduce integrated ticketing schemes;
- **Establish Clean Air Zones:** The powers to establish Clean Air Zones;
- **Other powers:** The right to promote or oppose Bills in Parliament; and
- The powers which are additional to the general functions relating to sub-national transport bodies will be requested in a way that means they will operate concurrently and with the consent of the constituent authorities.

5.15 Transport for the South East does not propose seeking the following functions or powers (some of these are subject to any changes recommended in the forthcoming devolution White Paper and governance of the rail network recommended by the Williams Rail Review):

- set priorities for local authorities for roads that are not part of the Major Road Network;
- be responsible for any highway maintenance responsibilities;
- carry passengers by rail;
- take on any consultation function instead of an existing local authority;
- give directions to a constituent authority about the exercise of transport functions by the authority in their area;
- act as co-signatories to rail franchises; or
- be responsible for rail franchising.

5.16 The Williams Rail Review may recommend significant changes to the structure of the rail industry which could affect the role of sub-national transport bodies in the planning and delivery of rail infrastructure and service specifications. Transport for the South East will review the White Paper due for publication in summer 2020 and assess its potential future role in the railway industry in due course.

5.17 Transport for the South East is intending to submit the Proposal to Government in autumn 2020, following approval of the transport strategy by the Shadow Partnership Board.

Next steps

Governance

5.18 Transport for the South East has put in place governance arrangements that will enable the development, oversight, and delivery of the transport strategy. It is envisaged that this governance framework will be further formalised when Transport for the South East becomes a statutory sub-national transport body. The governance arrangements are summarised as follows:

- Transport for the South East is governed by a **Shadow Partnership Board**. The Shadow Partnership Board is formed of elected members from each constituent member authority, with the six Berkshire unitary authorities being represented by one elected member through the Berkshire Local Transport Body. This body elects a chair and vice chair from the constituent members. It currently meets four times a year. Transport for the South East's regulations provide for the appointment of persons who are not elected members of the constituent authorities but provide highly relevant expertise to be co-opted members of the Partnership Board. Currently a representative from two of the five local enterprise partnerships in the geography, two representatives from the boroughs and districts, a representative from the protected landscapes in the geography, the chair of the Transport Forum and representatives from Network Rail, Highways England and Transport for London have been co-opted onto the board.
- The Partnership Board works by consensus but has an agreed approach to voting where consensus cannot be reached and for certain specific decisions.
- The Partnership Board has appointed a Transport Forum to act as an advisory body to the Senior Officer Group and Partnership Board. This forum comprises a wider group of representatives from user groups, transport operators, borough and district councils and business groups. The Transport Forum meets quarterly and is chaired by an independent person appointed by the Partnership Board.
- The Partnership Board and Transport Forum are complemented by a Senior Officer Group, which provides expertise and co-ordination to Transport for the South East's activities and the Shadow Partnership Board (including the development of the transport strategy). The Senior Officer Group meets monthly.

Future programme of studies

5.19 Further studies will be undertaken to identify the measures that will be needed to implement this transport strategy and achieve its vision. Five area studies will identify the specific schemes and policy initiatives that will be required in different parts of the Transport for the South East area. These studies will include an assessment of the potential impact of these measures in reducing carbon emissions. **Figure 5.3** shows the area that will be covered by three radial area studies and **Figure 5.4** shows the extent of two orbital area studies. In addition, two thematic studies will be undertaken to identify the specific role of these two areas in achieving the vision: one on freight and international gateways, and a second on future mobility. The outputs from these area and thematic studies will be fed into a Strategic Investment Plan setting out our short, medium, and longer-term scheme priorities.

5.20 A diagram showing a revised route map for our technical programme, including the timing and phasing of the area studies and thematic studies and Strategic Investment Plan outlined above, is provided in **Figure 5.5**.

Figure 5.3 Future Radial Area Studies

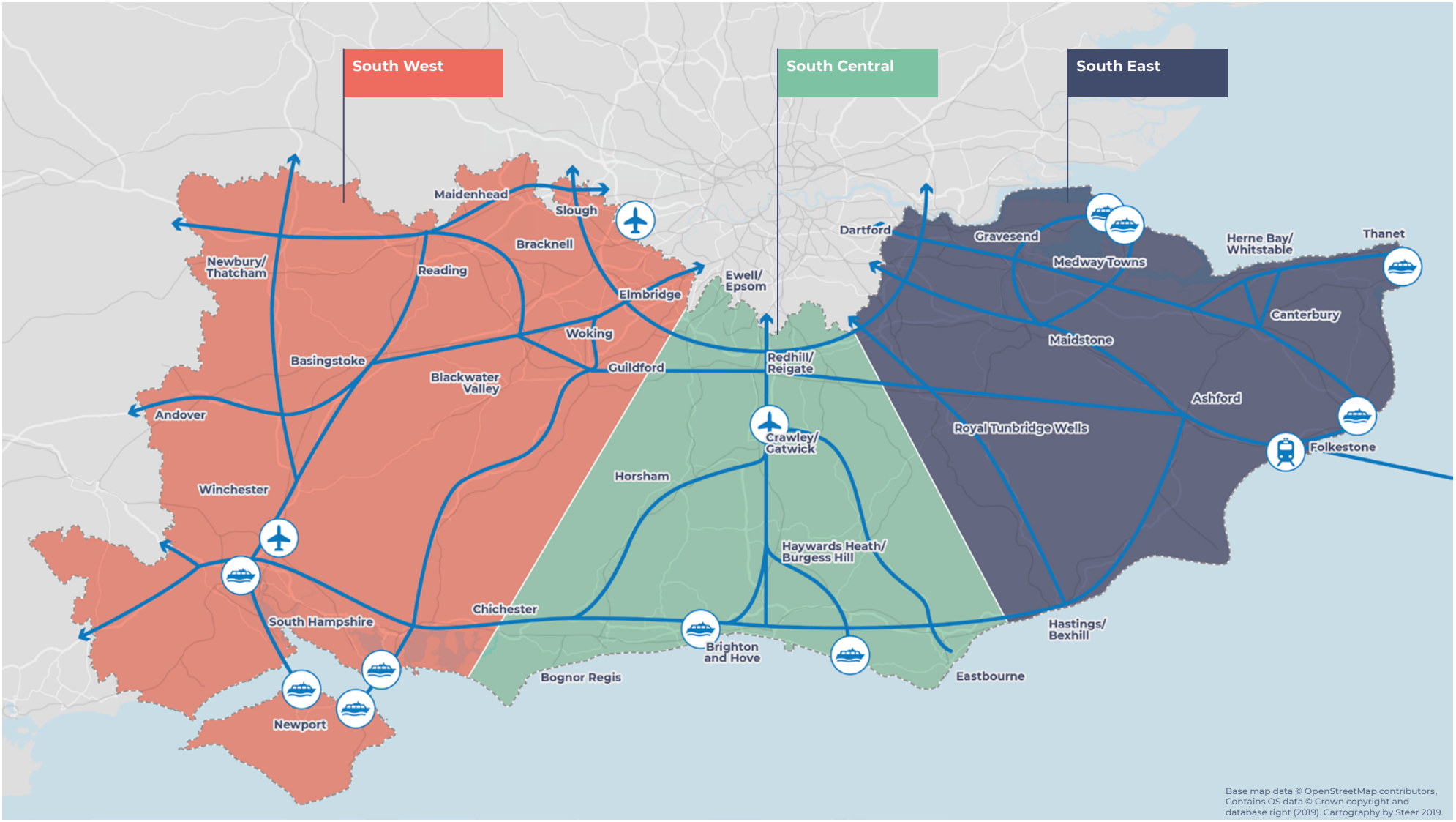


Figure 5.4 Future Orbital Area Studies

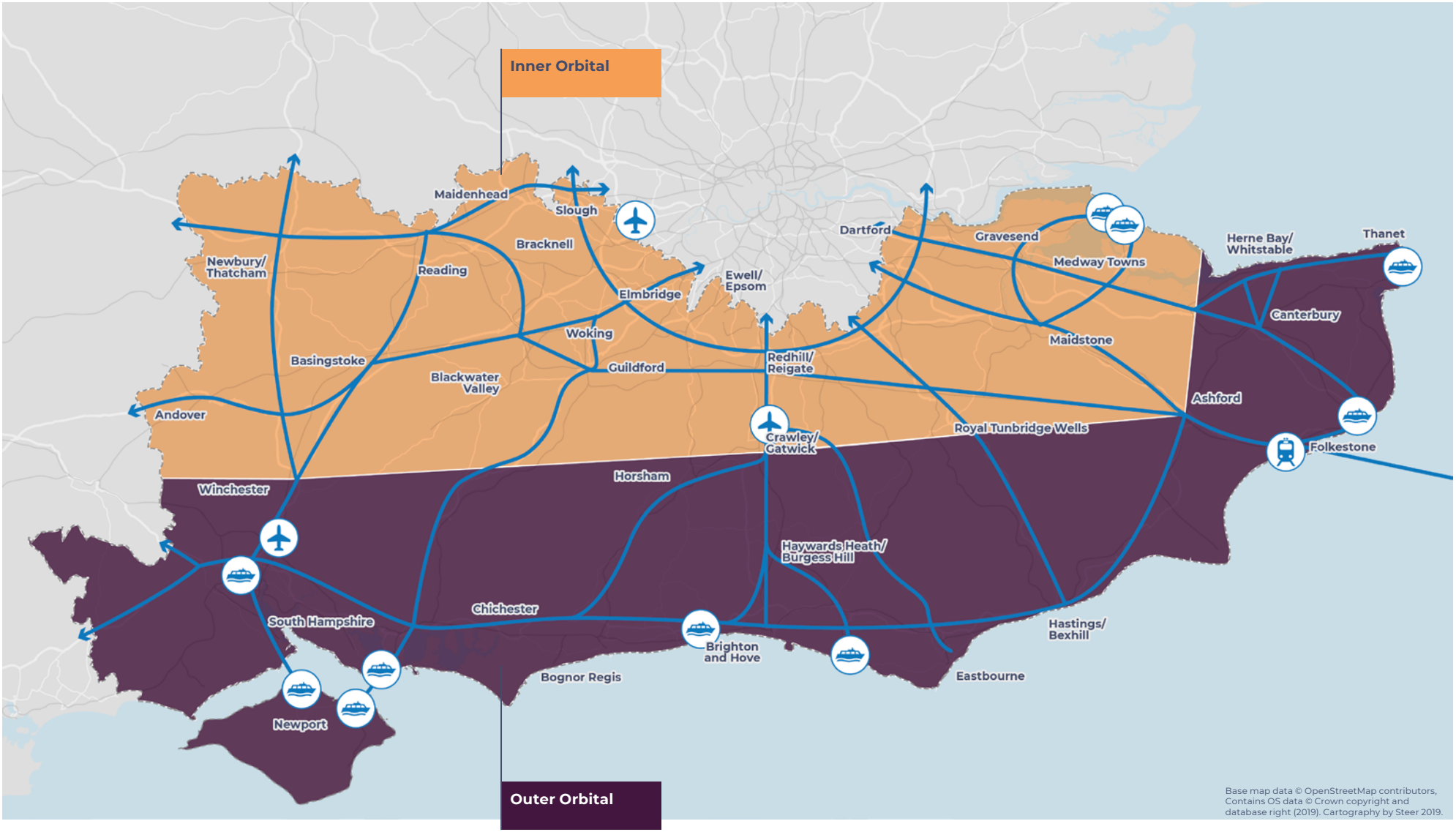
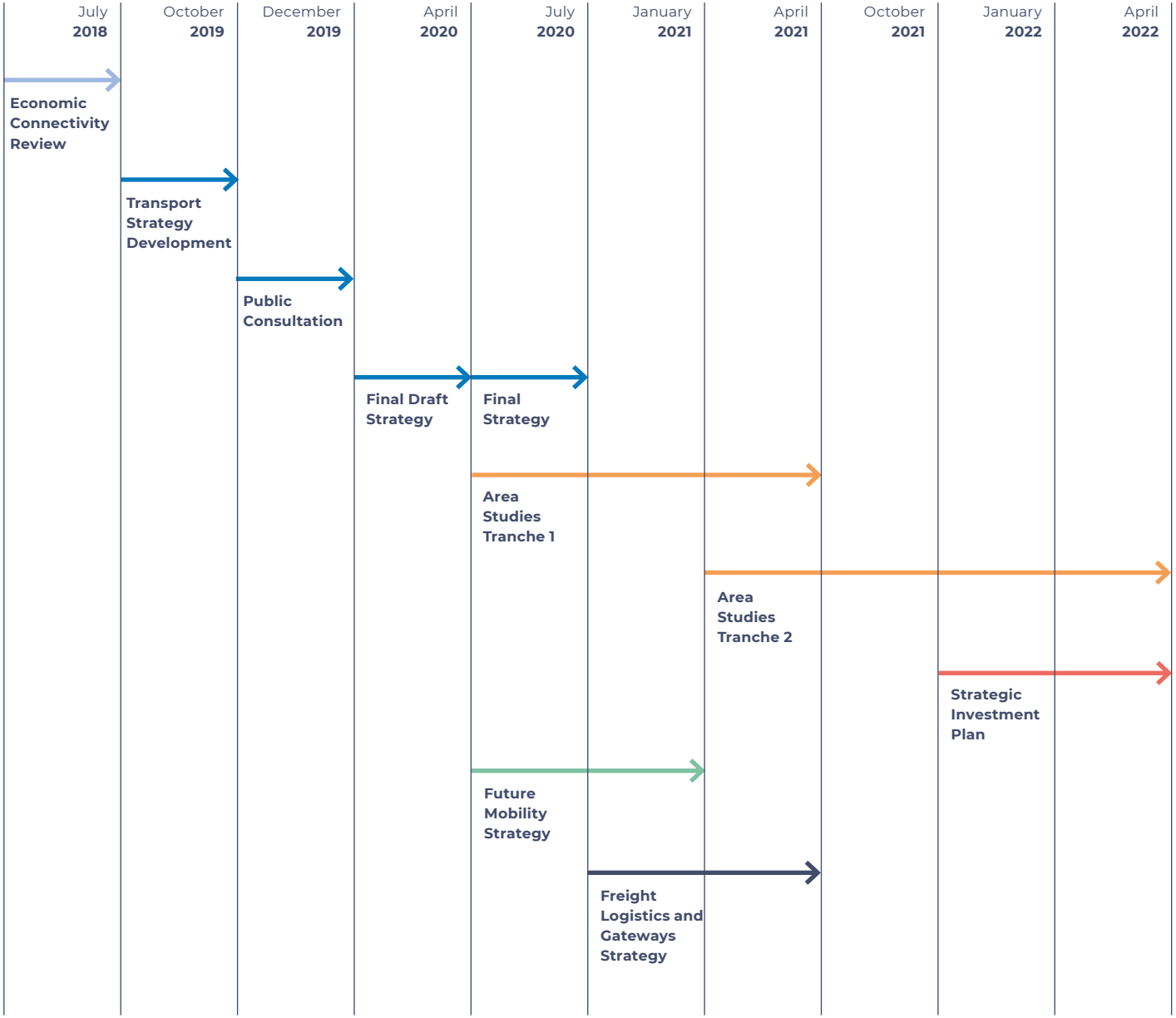


Figure iv Transport Strategy Route Map



Conclusions

In this chapter, we have set out how this transport strategy will be delivered, including: the broad priorities for interventions; possible funding sources and financing arrangements; how it will be monitored; our governance arrangements moving forward; and the next steps.

Overall in this transport strategy, we have set out a clear, ambitious vision for the South East area as a leading global region for net-zero carbon, sustainable economic growth. We are committed to turning this vision into a reality, working with our partners to deliver a better connected, more sustainable South East which will benefit of everybody who lives in, works in, and visits our area.

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