July 2022

A Strategic Investment Plan for the South East

Transport for the South East
Our ref: 24133701

steer

Evidence Base Report
July 2022

A Strategic Investment Plan for the South East

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Cover Photo

"Spirit of the Southern" (Harry Stevens, 1969)

Science Museum Group Collection
https://collection.sciencemuseumgroup.org.uk/objects/co226606/spirit-of-the-southern-painting

1 Introduction

Introduction

1.1 This document provides a summary of the Evidence Base that has informed the development of Transport for the South East's (TfSE's) Strategic Investment Plan (SIP).

1.2 TfSE is the sub-national transport body for the South East of England. It was established in 2017 to determine what transport infrastructure is needed to boost the region's economy. Its role is to add strategic value by making sure that funding and strategy decisions about transport in the South East are informed by local knowledge and priorities.

1.3 The SIP will provide a framework for future investment decisions in transport in the South East. This will be built on a solid, comprehensive body of evidence, which is available on TfSE's website. This document provides an overview of the evidence and highlights the key elements that have informed the narrative underpinning the Strategic Investment Plan.

Contents

1.4 The rest of this document is structured as follows:

- **Chapter 2 (Strategic Context)** summarises the key documents and policies that have informed the development of the SIP.
- **Chapter 3 (Issues and Opportunities)** summarises the issues and opportunities that need to be addressed by the SIP. It also includes a summary of the South East's Strengths, Weaknesses, Opportunities, and Challenges, as well as a list of the Problem Statements collated from the Evidence Base.
- **Chapter 4 (Vision and Objectives)** outlines the Vison and Objectives collated from the review of the Evidence Base, and presents Key Performance Indicators that could be developed to monitor the delivery of these objectives.
- **Chapter 5 (Packages for Development)** presents a consolidated summary of the packages developed by the area and thematic studies, outlines how they address the Problem Statements and Objectives, and presents a high-level assessment of their deliverability.

2 Strategic Context

Introduction

2.1 This Chapter summarises the key documents and policies that have informed the development of the SIP.

2.2 The documents that have been reviewed for this Chapter – and which are presented in this order in this Chapter – are as follows:

- TfSE's Economic Connectivity Review, which was published in July 2018 (pre-COVID-19 pandemic).
- TfSE's Transport Strategy, adopted and published in July 2021 (but largely developed pre-COVID-19 pandemic).
- TfSE's Area Studies Programme, which is scheduled to conclude in Spring 2022.
- TfSE's Future Mobility Strategy, which was developed in parallel to the Area Studies programme.
- TfSE's Freight, Logistics, and International Gateways Strategy, which was also developed alongside the Area Study programme.
- COVID-19 Response Report, which was completed in January 2021.
- TfSE Future Organisation Report, which was submitted to TfSE in November 2021.

Economic Connectivity Review

Published July 2018

2.3 The Economic Connectivity Review was the first major component of TfSE's transport strategy for the region. It analysed current and future economic activity in the South East and its connections to major centres beyond the region. The review identified the economic outcomes of transport in the South East and suggested an approach to understanding where investment in transport infrastructure may yield the greatest benefits.

2.4 The study evaluated the role of strategic transport connectivity in supporting businesses, higher education, and research institutes across the South East – thus supporting high levels of innovation, providing jobs, and driving up productivity.

2.5 The study suggested that, with the right policies focussed on highest growth sectors, the economy of the South East could grow from c.£200bn in 2020 to c.£500bn in 2050 in terms of Gross Value Added (GVA). Similarly, with the right investment the number of jobs in the South East could grow from 4 million today to over 6 million by 2050.

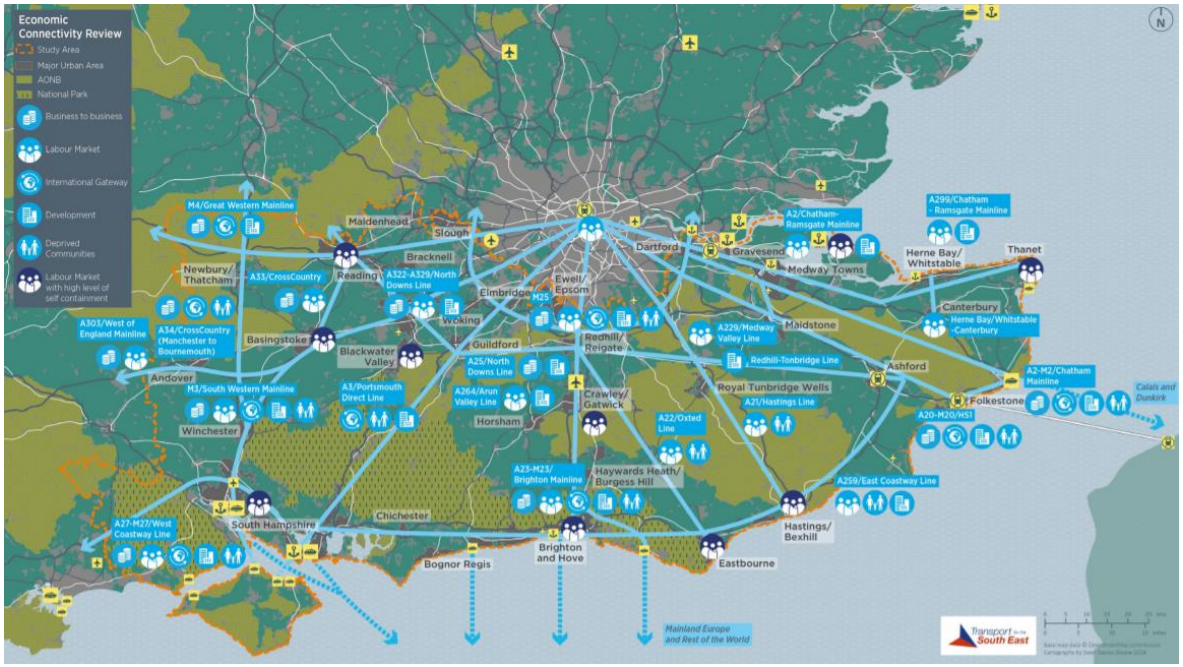
2.6 The study recommended the South East should build on its strengths as a world leader in marine, maritime and defence; advanced engineering; biosciences; and connected digital sectors, all supported by digital enabling technologies and other high growth sector specialisms in finance and professional services, and transport/logistics.

2.7 In particular, the study recommended:

- Building on the advantages of the South East for inward **investment**.
- Promoting access to **international markets** for trade.
- Enhancing the role of the South East as a pivot for the **wider national transport system.**
- Facilitating the development of a **more sustainable approach** to connectivity in the South East.

2.8 The study also identified 26 strategically important corridors and assessed their contribution to the four recommendations listed above. These corridors, which are shown in Figure 2.1, have provided an important framework and point of reference for many subsequent studies – including the Transport Strategy.

Figure 2.1: Strategic Corridors



Transport Strategy

Published July 2020

2.9 TfSE's Transport Strategy for the South East sets out a shared vision for the South East and describes how a better integrated and more sustainable transport network can help TfSE and its partners achieve this vision.

2.10 The Transport Strategy describes:

- The **Strategic Context** that forms the background to the Transport Strategy.
- **Scenarios** that were created to support the development of the Strategy, and the impacts of these scenarios on socioeconomic and transport outcomes.
- A 2050 **Strategic Vision** for the South East.
- Three **Strategic Objectives**, centred on sustainable development.
- 15 **Priorities** for the South East – which are aligned to the Strategic Objectives.
- A set of **Principles** to be applied in delivering the Strategy.
- **Issues and Opportunities** that the Transport Strategy should address, presented for 6 movement types.
- How the Transport Strategy will be delivered – this will be developed and presented in the SIP's **Delivery** Chapter.

2.11 The Vision, Objectives, Priorities and Principles outlined in the Transport Strategy are described in **Chapter 4**. The Strategic Context, Scenarios, and Issues and Opportunities identified in the Transport Strategy are summarised below.

Strategic Context

2.12 The Transport Strategy presents a summary of the extensive Evidence Base underpinning the Strategy. This includes:

- The **Economic Context** of the South East – including the key industries and Major Economic Hubs that support the South East's Economic.
- The **Socioeconomic Context** of the South East – highlighting variations in socioeconomic outcomes, from very high levels of prosperity (generally in areas closer to London and further west) to other areas of significant deprivation (generally coastal areas towards the east).
- The **Environmental Context** of the South East – championing the natural assets of the South East but noting challenges with noise and air quality generated by transport activities.
- The South East's role as the **International Gateway** to the UK – which is changing as the UK and EU adjust to a new trading relationship.
- The South East's important relationship with **London** – the economic influence of the Capital stretches far beyond its borders, as seen in pre-COVID-19 commuting patterns.
- National, Regional, and Local **Policy Context** – including the roles and responsibilities for these policies across the spectrum of government.
- Current and future **transport patterns** – at that time (pre-COVID-19), travel patterns were heavily influenced by commuting and were reaching capacity limits in many locations, across multiple modes of transport.
- Key **transport corridors** – building on the earlier analysis outlined in the Economic Connectivity Review.
- **Key characteristics** of the highway, railway, international gateways (including international rail), mass transit and active travel transport networks that serve the South East – as well as how they currently integrate together.

Scenarios

2.13 The Transport Strategy presents four future scenarios, which were developed to identify the future direction for the transport strategy. These scenarios were:

- London Hub;
- Digital Future;
- Our Route to Growth; and
- Sustainable Future.

2.14 A summary of the key features of these scenarios is presented in **Figure 2.2.**

2.15 These scenarios were modelled using a Land Use Transport Interaction Model called SEELUM (South East Economic and Land Use Model). SEELUM provides projections for transport outcomes (e.g., changes in trips by mode) and socioeconomic outcomes (e.g., population, employment and Gross Value Added).

2.16 Based on the outputs from modelling the four scenarios, TfSE and its partners combined the best elements of these scenarios to create a fifth, preferred scenario 'Sustainable Route to Growth'.

2.17 The Preferred scenario provided the basis for formulating the vision and objectives for the Transport Strategy. The key features of this 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 technologies 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.

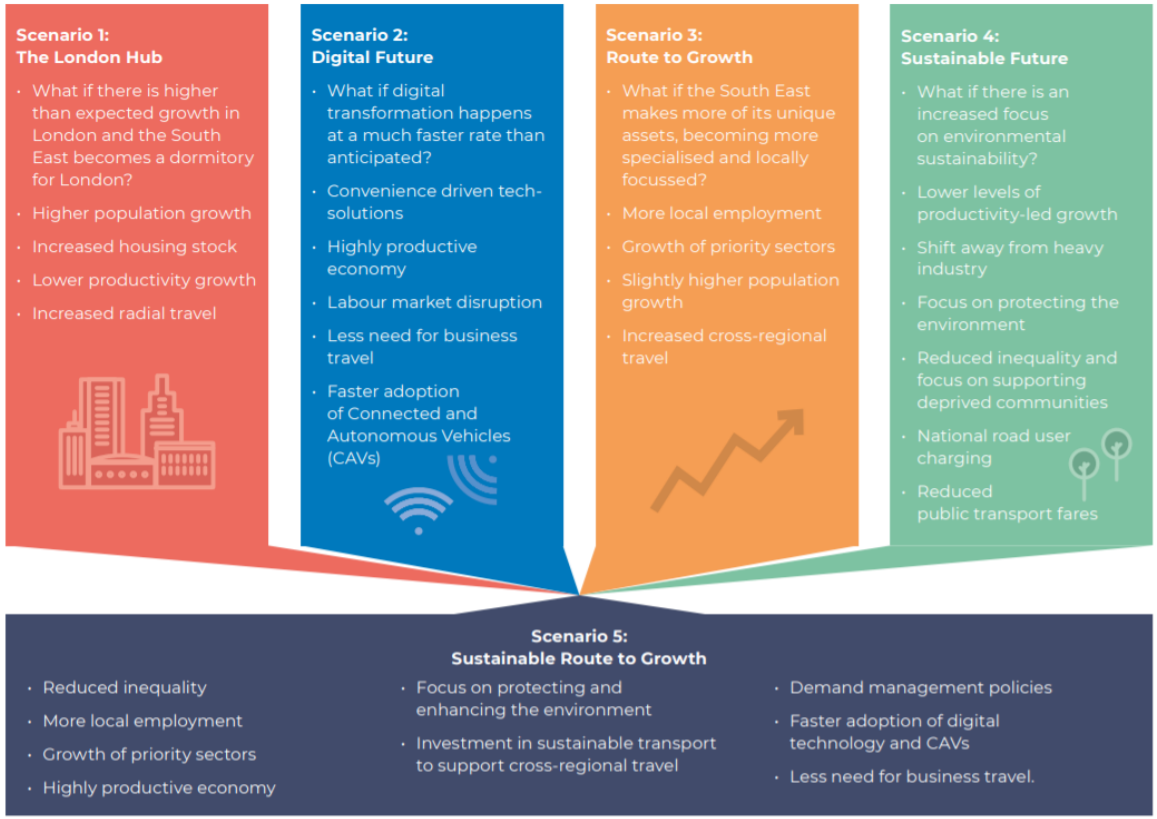
2.18 **Table 2.1** summarises the high-level modelling results generated by SEELUM. This shows that the Sustainable Route to Growth scenario produces strong, regionally led economic growth akin to the results yielded by the Route to Growth scenario whilst also delivering this growth in a more environmentally sustainable manner, in alignment with the Sustainable Future scenario.

2.19 In summary, TfSE's Preferred Scenario delivers the second highest growth in GVA of all the scenarios, exceeding the benefits forecast from the DfT Central Case Forecast. This underpins the vision, objectives, priorities, and principles TfSE presents in its Transport Strategy, which is summarised in more detail in **Chapter 4**.

Table 2.1: Scenario Modelling Results

Scenario	GVA (2050)	GVA Growth	Trips (2050)	Trips Growth
Central Case	£339bn	118%	23.9m	15%
London Hub	£430bn	126%	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%

Figure 2.2: Summary of transport Strategy



Issues, Opportunities, and Responses

2.20 The strategy applies the principles above to six journey types to help identify key challenges and opportunities (or 'responses'). These challenges and responses to challenges were explored further through a programme of subsequent area and thematic studies. The six journey types are:

- Radial journeys;
- Orbital and coastal journeys;
- Inter-urban journeys;
- Local journeys;
- International gateways and freight; and
- Future journeys.

Radial Journeys

2.21 Challenges identified include:

- 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 / resilience on the Brighton Main Line.
- Constraints on road corridors passing through urban areas (e.g., A3 Guildford).

2.22 Responses to these challenges include:

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

Orbital and Coastal Journeys

2.23 Challenges identified include:

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

2.24 Responses to these challenges include:

- Holistic demand management initiatives that address road congestion.
- Electrify railways serving orbital routes.
- Improve orbital/radial rail interchange.
- Reinstate cross country services.
- Build consensus on a way forward for M27/A27/A259 corridor.
- Reduce human exposure to orbital roads.

Inter-urban journeys

2.25 Challenges identified include:

- Some routes fall below standard.
- Bus services face competition/congestion from cars and reduced financial support.
- Gaps in inter-urban rail routes.
- Road safety hot-spots.

2.26 Responses to these challenges include:

- Support Roads Investment Plan (2020 – 2025), Large Local Major Schemes, and for the Major Road Network.
- Boost inter-urban bus services.
- Improve inter-urban rail connectivity.

Local journeys

2.27 Challenges identified include:

- Conflicts between different road users.
- Poor air quality in some urban areas and along some corridors.
- Poor integration in some areas.
- Pressure on bus services (esp. rural).
- Affordability of public transport.

2.28 Responses to these challenges include:

- Invest in infrastructure and subsidy for high quality public transport.
- Improve air quality.
- Prioritise vulnerable users, especially pedestrians and cyclists, over motorists.
- Develop better integrated transport hubs.
- Advocate for a real term freeze in public transport fares.

International gateways and freight journeys

2.29 Challenges identified include:

- Impact of airport expansion on surface transport networks.
- Access to Port of Dover/Southampton.
- Dartford Crossing congestion.
- Rail freight mode share is relatively low.
- Freight disrupted by congestion on many strategic road corridors.
- Difficulties decarbonising HGVs.
- The UK leaving the European Union.

2.30 Responses to these challenges include:

- Improve access to Heathrow and ports.
- Deliver Lower Thames Crossing.
- Implement demand management policies to improve the efficiency of the transport network.
- Develop rail freight schemes.
- Unlock benefits from new technologies.
- Develop Freight Strategy and Action Plan.

Future journeys

2.31 Challenges identified include:

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

2.32 Responses to these challenges include:

- Develop future proof electric and digital infrastructure (standards, etc).
- Incorporate Mobility as a Service into public transport networks.
- Encourage smart ticketing systems.
- Develop a Future Mobility Strategy.

Priorities for investment

2.33 The Transport Strategy outlines priorities for interventions and suggests timescales for their delivery, as follows:

- **Highway schemes** – 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.
- I**nterchanges** – are a high priority across all timelines where these facilitate multi modal journeys and create opportunities for accessible development.
- **Mass transit** schemes (e.g., bus and tram) – are high priority in general.
- Public transport **access to airports** – is a high priority and should be delivered alongside airport expansion.
- Road and public transport **access to ports** – is also high priority and improvements prioritised for delivery in the short-term.
- Innovation in **technology** – 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.
- **Demand management policy** interventions – are a longer-term goal.

A public consultation on the Draft Transport Strategy was held in the autumn of 2019 and the final Transport Strategy was formally adopted by the TfSE Partnership Board in July 2020

Area Studies Programme

Scheduled to complete Spring 2022

2.34 To help turn the Transport Strategy from vision to reality, TfSE engaged with partners and stakeholders across the region to determine what the South East's priority transport schemes, initiatives and policies should be. These engagements formed a series of geographic studies based around the most important economic corridors in the region. Maps showing the geographic scope of each area study are presented in **Figure 2.3**.

2.35 Each study investigated the issues, challenges, and opportunities identified in the transport strategy in more detail and, ultimately, identified a shortlist of interventions to make life better for people, for businesses and for the environment.

2.36 Partners and stakeholders were crucial in providing invaluable insight and experience during this process, which has helped TfSE develop its investment priorities. Each of the area studies was led by a working group comprising senior technical officers from the relevant local transport authorities, local enterprise partnerships and other key partners including Network Rail and National highways and protected landscapes.

2.37 These working groups were supported by stakeholder fora, which brought together a wide range of groups and organisations including transport operators, user groups, active travel campaigners, universities, environmental groups, local planning authorities, business groups and many more.

2.38 In total, five area studies were commissioned:

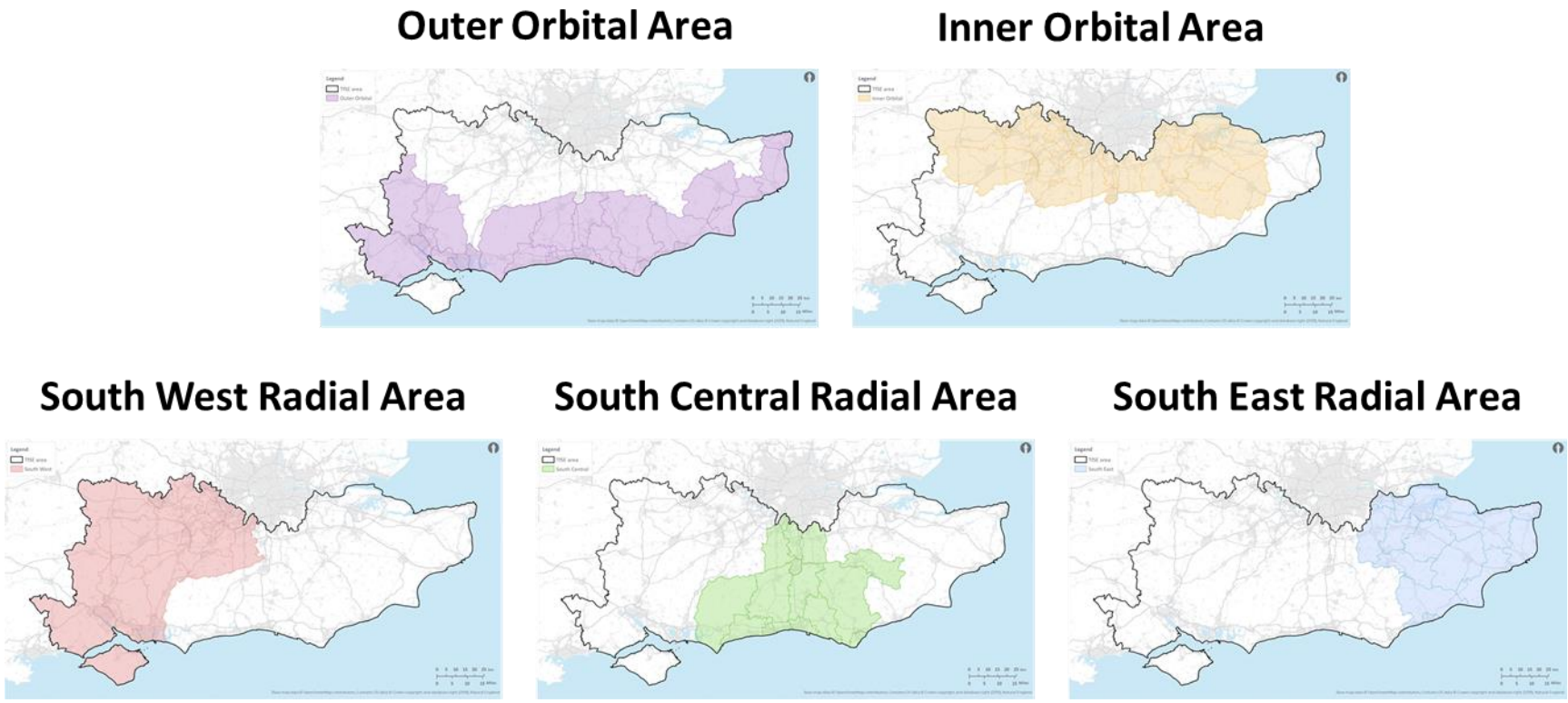
- **Outer Orbital Area Study** – encompassing the strategic corridors that follow the coastline from the New Forest, in Hampshire, towards East Kent.
- **Inner Orbital Area Study** – encompassing the strategic cross-regional routes around the southern outskirts of London.
- **South Central Radial Area Study** – encompassing the corridors that share the London-Gatwick corridor in the north and fan out in the south to connect much of the Sussex coastline to the capital.
- **South East Radial Area Study** – encompassing the transport corridors connecting the Channel Tunnel and Port of Dover to London, as well as serving Kent, Medway, and East Sussex.
- **South West Radial Area Study** – encompassing the strategic highways between London and the South West, as well as parts of the Great Western Railway and South Western Mainline. It also includes the strategically important cross-Solent links with the Isle of Wight.

2.39 Each area study developed a Vision, set of Objectives, and list of Problem Statements for their respective areas. These are presented in **Chapters 3 and 4**, along with insights drawn from the whole programme and presented as the following eight themes:

- Decarbonisation and environment;
- Adapting to a New Normal;
- Regeneration and Growth;
- Coastal Communities and Levelling Up;
- Work Class Urban Transit Systems;
- East – West Connectivity;
- Resilient Radial Corridors; and
- Freight and Global Gateways.

2.40 The area studies have also developed and assessed the Packages of Interventions that will feature in the SIP. These are described in more detail in **Chapter 5**.

Figure 2.3: Area Study Geographies



Future Mobility Strategy

Completed July 2021

2.41 The Future Mobility Strategy and action plan aim to help partners across the South East take advantage of new and developing transport technology – transforming how we live, work and travel.

2.42 Future mobility considers new and emerging systems, services, and modes, whether they be early signals on the horizon of a potential new system, growing trends of a new service or an established trajectory of a new mode. Recent developments in Future Mobility have already brought significant changes in the form of electric cars, e-scooters and e-bikes, delivery robots and drones, mobility hubs and ride-hailing.

2.43 While offering different solutions and appealing to different markets or customers, these new additions to the mobility landscape have all been developed with the user firmly at the heart of the system.

2.44 Innovation in these areas has the potential to make life easier for people and businesses, improving connectivity and accessibility, reducing congestion, and drastically cutting carbon emissions.

2.45 The Future Mobility Strategy sets out a Strategic Vision and Objectives, which are outlined in more detail in **Chapter 4**.

2.46 The Strategy notes that the signals, trends, and trajectories that affect mobility need to be monitored, not simply new technology but also the global, national, and local changes that affect economies and communities and which may influence mobility over the coming years.

2.47 The Strategy acknowledges the uncertainty in delivering many aspects of this vision. This uncertainty is brought about by major environmental, economic, and social trends, shock events, including the COVID-19 pandemic, and the development and delivery of new mobility modes, services, and infrastructure. The evolution of mobility is made more complex by the responses to these changes by consumers, wider communities and organisations, and the policy and investment decisions by government.

2.48 In conclusion, the Strategy has reviewed the intended and unintended consequences of emerging technologies. This strategy has identified a series of interventions which will be taken forward in the SIP.

Freight, Logistics, and International Gateways Strategy

Completed January 2022

2.49 The Freight, Logistics and International Gateways Strategy was developed by TfSE to provide a framework for strategic planning and policy development, including investment decisions, as well as the long-term stability that private sector organisations need to plan for sustainable growth.

2.50 This strategy provides a route map to enable the growth of the industry to keep up with the growing population and economy in a sustainable manner, in the following ways:

- The strategy provides a clear **vision** for how the sector should develop going forward to 2040, ensuring investment and planning can work holistically across the public and private sector over the coming decades. The year 2040 has been chosen to reflect the rapidly changing nature of the freight industry, including the effects of external trends and issues (e.g., the UK Government's pledge to end the sale of diesel HGVs from 2040).
- The strategy identifies the **actions** that public and private sector organisations

should be taking in the short, medium, and long term, from infrastructure investment to key areas for collaboration and innovation, to develop buy-in from all sections of the industry and ensure the vision for the strategy is delivered holistically.

Delivering a vision for the region

2.51 Looking forward to 2040, the Strategy states that the future of the South East can be shaped pro-actively through the delivery of this freight, logistics and gateways strategy, which will support the key strategic principles from TfSE's Transport Strategy. A summary of the role of freight and logistics in delivering these principles is shown in **Table 2.2**.

2.52 The vision and objectives of this freight strategy need to be ambitious to tackle the major challenges faced by the region's economy, particularly in a post-pandemic, post-Brexit environment, to achieve buy-in from a wide range of stakeholders.

2.53 The objectives identified for the Strategy are divided into three areas: economic, social, and environmental and are presented in **Chapter 4**.

Table 2.2: TfSE principles and freight

Strategic principles	Application to freight & logistics
Principle 1: Ensuring the delivery of a high quality, sustainable and integrated transport system that supports increased productivity to grow the South East and UK economy and compete in the global marketplace.	The efficient movement of goods, and the delivery of sufficient capacity to enable that efficient movement, is a key contributor towards this principle. Freight and logistics supports jobs, helps with the delivery of new homes, and enables trade and commerce, boosting productivity and economic growth.
Principle 2: Facilitating the development of a high quality, sustainable and integrated transport system that works to improve safety, quality of life and access to opportunities for all.	Freight and logistics results in high volumes of vehicle movements. The industry has a significant role to play in mitigating road risk to vulnerable road users and air quality and noise impacts on communities, but also plays a central role in supporting communities through access to goods and providing jobs in local economies.
Principle 3: Facilitating the delivery of a high quality, sustainable and integrated transport system that protects and enhances the South East's environment.	Given freight and logistics drives vehicle movements, the industry has a core role to play in transport decarbonisation, increasing efficiency, allocating the right mode and the right type of vehicle for the right journey, and investing in new technology to mitigate environmental impacts.

2.54 The strategy identifies a series of strategic actions (and resulting interventions and measures) designed to deliver its strategic vision and strategic objectives. These are:

- reduce trip demand;
- re-mode to cleaner alternatives;
- retime activity to outside of peaks;
- improve perceptions and public sector understanding of the industry;
- enhance infrastructure and connectivity;
- accelerate decarbonisation;
- sharing industry best practice;
- increase provision of logistics land and property;
- improve local freight and logistics planning;
- develop future freight foresight;
- improve operational efficiency and safety;
- enhance workforce capability; and
- clarify roles and influence of government.

2.55 Many of these interventions have been embedded into the Packages developed by the Area Studies (see **Chapter 5**) and will be incorporated into the SIP.

2.56 The Strategy includes a Delivery Plan , including a monitoring framework to ensure the successful delivery of this strategy.

COVID-19 Response Report

Completed January 2021

2.57 In response to the COVID-19 pandemic, which instigated several lockdowns in South East England in 2020 and 2021, TfSE commissioned a study to examine the issues that may influence the future programme of work in light of the impacts of the pandemic. The study highlighted several issues that the SIP will need to consider.

2.58 The COVID-19 global pandemic will have a permanent impact on how we live, work, and do business. These changes may not be immediately apparent – and it may be some time before the 'new normal' establishes itself. TfSE remains committed to achieving our vision of a better, more productive, and more sustainable South East. These are challenges that extend beyond administrative and political boundaries. They require TfSE to have the ability to effectively join up transport policy, regulation and investment and provide clear, strategic investment priorities which will improve connectivity into and across the region, boost the economy and improve the lives of millions.

Speed of Recovery

2.59 The economic recovery from COVID-19 is likely to take place over years, rather than months. It may entail major economic restructuring of the South East's economy. However, the short-term economic damage caused by the pandemic should not be used as an indicator of what these long-term changes will be. Many of the sectors which have been hit the hardest – Hospitality, Tourism, Entertainment and The Arts – are fundamental to the functioning of a healthy society and are anticipated to return in the South East once the economy has recovered.

2.60 Many of these factors are beyond the control of TfSE and the area studies, which should aim to understand how patterns of working and commuting may change in the future, looking to plan for these changes, rather than changes in what these jobs actually are. Ultimately the long-term nature of the planning which TfSE undertakes means that it needs to envisage a society which has returned to a 'new normal', while accepting that this may be several years away.

A new relationship with London

2.61 Due to its geographical proximity, the South East has traditionally had a strong relationship with London. This is particularly true of 'commuter towns' with good rail connections to the capital. COVID-19 has changed the nature of this relationship, with many people who formerly worked in London now working from home in the South East. In the future there may be an increase in people relocating permanently to the area from London. This is likely to bring benefits to the South East by boosting its 'native' economy but will also place more pressures on an already overstrained housing market.

2.62 The Study recommended the SIP considers carefully how this new relationship with London is going to influence travel patterns across the South East (for example, commuter demand for rail travel), and encourage housing development in areas which are likely to accommodate this increased population. Radial journeys, which formerly made up a significant proportion of the journeys in the South East, may now become less important, with consequentially greater need for investment in 'Orbital' components of the transport network.

The Importance of Polycentricity

2.63 The relatively large number of medium-sized towns and cities across the South East has (so far) helped the region's resilience as compared to other UK regions with larger urban hubs. Individuals are more likely to be able to move safely and efficiently around these smaller urban areas using active travel modes, rather than public transport, to get around. This tallies well with TfSE's desire to 'create great places to live' and 'put people first' as outlined in the Transport Strategy. TfSE must continue to pursue this strategic direction, newly supported by the evidence that it aids regional economic and social resilience.

2.64 To help the region thrive in the future, investment in 'intermediate length' transport journeys will be important, for example, reallocating rail capacity to focus on local services, encouraging express bus services and the provision of more road space for active modes like walking and cycling.

2.65 With more dispersed patterns of travel temporally and spatially, it may be harder to accommodate these travel patterns by frequent, fixed-route public transport.

2.66 Existing fixed route transport may also be made less viable with fewer peak trips. In the longer term, if the population of these towns and cities is to increase beyond current plans, there will need to be investment in Transit-Orientated Development, providing the housing needed for population expansion without increasing usage of private cars.

Rising Inequality

2.67 COVID-19 has affected those at the lower end of the income scale the hardest. More deprived, lower-income sections of the economy have borne the brunt of the economic shock and will take the longest time to recover. The South East already has high levels of inequality, which are likely to worsen as a result of the pandemic. Transport is an 'economic enabler' – it allows people better access to opportunities, helping to encourage economic prosperity. While passenger demand for public transport is suppressed due to capacity constraints and economic and behavioural responses, sustaining, and increasing public transport (including shared mobility and on-demand service) capacity, accessibility, and connectivity are necessary as a direct response to ensure access for those people who are reliant on public transport.

2.68 The study found that funding public transport (e.g., additional funding for subsidies or direct payments to operators, promotional campaigns) is likely to be required for maintaining levels of service and growing demand as rapidly as possible. Further measures could include the use of new technologies such as integrated ticketing, bus priority measures, and mass rapid transit.

2.69 Overall, the Study recommends the SIP uses its influence to provide good connections for individuals living in areas of high deprivation to good job opportunities, carefully assessing how provision of transportation can help communities which have been hardest hit by Covid-19 to recover more rapidly.

Technological and Behavioural 'Acceleration'

2.70 COVID-19 has accelerated many technological developments which were already reshaping our society, such as greater working from home and greater demand for remote access to goods, services, and amenities (and corresponding increase in deliveries).

2.71 Some of these changes have been and will be positive for society. Investment in digital technology has the potential to facilitate economic resilience and recovery as partially evidenced from increased levels of home working and remote access to services and amenities – 'Digital as a Mode'. Increased homeworking may reduce commuting trips, and longer distance trips, which cause particularly high levels of pollution.

2.72 The COVID-19 Response study tested a range of scenarios using SEELUM. This forecast an increase in car trips, but these were offset by a reduction in total numbers of trips resulting from decreased work trips (higher levels of working from home and a lower number of jobs). It is unclear how this will change in the longer-term, but we could be planning in the medium term for lower levels of traffic than previously envisaged.

2.73 The results underline the fact that recovery from the pandemic will likely take years, rather than months, and when the recovery does occur, the volume of users using different transport modes (and therefore, the form of the transport network) will likely differ markedly from that which currently runs across the region.

2.74 The Study concludes by stating the SIP must recognise and accept that there remains significant uncertainty about how the transport network is going to develop post Covid-19. It must think carefully about how it can best make use of the benefits brought by this technological acceleration and behavioural shifts, while mitigating their negative side-effects.

2.75 This study recommends the SIP develops strategies that provide some measure of flexibility and resilience; strategies which aim to help areas identified as more vulnerable to the impacts of Covid-19, while retaining the flexibility to adapt as its impacts are realised over the long-term.

TfSE Future Organisation Report

Completed November 2021

2.76 In 2021 TfSE commissioned a Study to review the Roles and Responsibilities of TfSE in the new environment. It concluded that there is a clear, continued future need for TfSE in an enhanced form: 'TfSE 2.0'.

2.77 TfSE was established as a response to the Cities and Local Government Devolution Act (2016) and subsequently providing support to government and Local Transport Authorities. TfSE has evolved organically, responding to ad-hoc requests from DfT, but this current setup does not accommodate for TfSE's permanence and status in the long term.

2.78 This study recommended TfSE:

- continues to act as a regional lead for all strategic transport concerns, acting as a conduit for discourse between DfT, LTAs and other transport stakeholders;
- develops its position as a regional resource that tackles emerging transport challenges and develops the capabilities to overcome and capitalise on them; and

- grows and develops as an organisation and builds the capabilities to convert packages and interventions identified in the Strategic Investment Plan (SIP) into investment-ready projects.

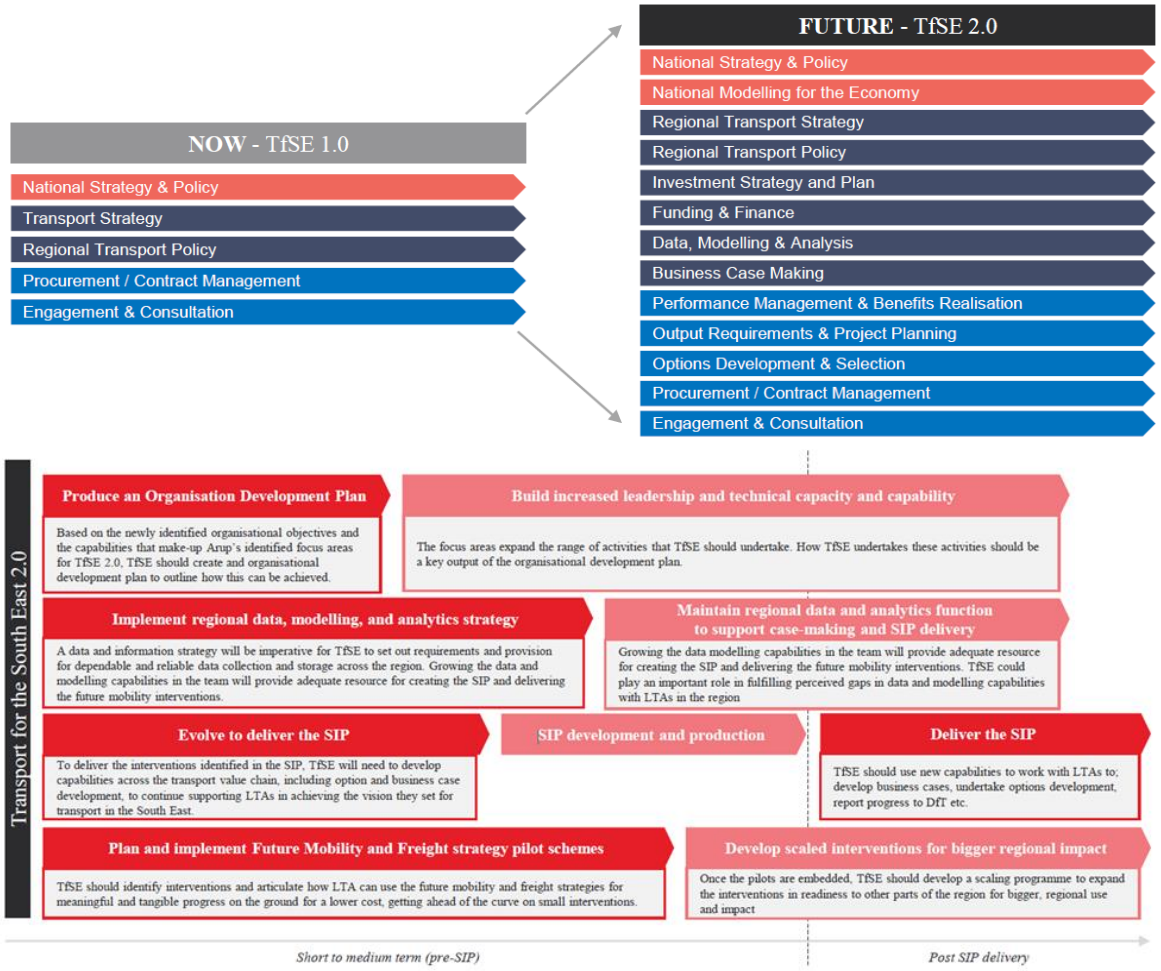
2.79 These areas of focus were approved by TfSE in the January 2022 Board Meeting.

2.80 In the short-term, TfSE will undertake these activities to support the implementation of the various strategies being developed across the region. In the long-term, TfSE will develop these capabilities in readiness for SIP completion and take the identified packages into investment-ready projects.

2.81 TfSE will require more resources and capabilities to bring its data, modelling and analytics capabilities in-house to increase access to those for partners, progress the intervention packages identified in the SIP into investment-ready propositions, and effectively deliver the identified interventions in their published strategies.

2.82 Figure 2.4 illustrates the future state of the TfSE organisation to capitalise on its position to support delivery of its Strategic Investment Plan.

Figure 2.4: Roadmap to a future TfSE



3 Issues and Opportunities

Introduction

3.1 This chapter summarises:

- the key issues and opportunities drawn from the Evidence Base;
- the Strengths, Weaknesses, Opportunities, and Challenges of the South East; and
- the Problem Statements that have been consolidated from the Evidence Base.

Issues and Opportunities

3.2 We have identified eight themes that describe the key issues and opportunities that the South East faces today. These are:

- Decarbonisation and environment
- Adapting to a New Normal
- Levelling Up Left Behind Communities
- Regeneration and Growth
- Work Class Urban Transit Systems
- East – West Connectivity
- Resilient Radial Corridors
- Freight and Global Gateways

3.3 The rest of this section provides more details about each theme, and the evidence underpinning them.

Decarbonisation and Environment

3.4 Climate Change is one of the most important challenges the world is facing today. As such, this topic is widely cited and analysed in the Evidence Base. Government policy on these issues is clear and ambitious – the UK government has committed to deliver a net-zero economy by the year 2050, while many (indeed, almost all) Local Authorities in the South East have declared Climate Emergencies. Some Local Authorities in the South East are pushing to decarbonise their areas by 2030.

3.5 Transport makes a significant contribution to carbon emissions. While other parts of the economy, such as the energy sector, have made progress in reducing emissions, transport's share of the emissions challenge is growing.

3.6 As **Figure 3.1** shows, reaching a net zero carbon transport network by 2050 (yet alone 2030) will be very challenging. Carbon emissions from transport in the South East are declining, but not at a rate fast enough to reach net zero by 2050 or 2030.

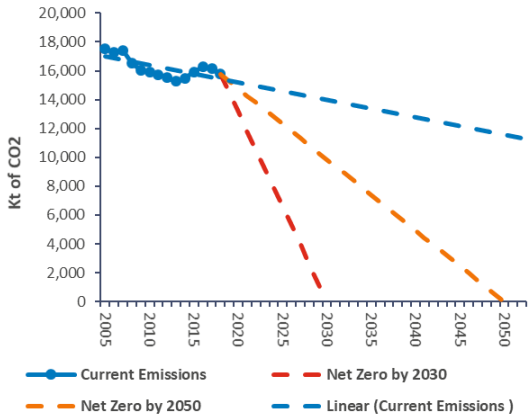
3.7 While investment in site specific interventions (such as those that improve the attraction of more sustainable transport modes) will help, the analysis presented by the Area Studies programme suggests net-zero can only be achieved through action at a national level. The SIP therefore will include global policy interventions that would work best if implemented nationwide.

The SIP will therefore include a range of interventions – including global policy interventions – to accelerate the decarbonisation of the transport sector

3.8 The SIP will also include measures to enable the South East to adapt to Climate Change and minimise disruption that might arise from changes in weather and sea levels.

3.9 The SIP will also place significant emphasis on protecting and enhancing the natural and historic environment. This means some higher cost interventions will be preferred over lower cost interventions where the latter is judged to harm the environment.

Figure 3.1: TfSE area transport Emissions 2005-2018



Adapting to a New Normal

3.10 The COVID-19 global pandemic has had a significant impact on the South East's health, economy, and transport systems. It is likely to have a permanent impact on how we live, work, and do business. These changes may not be immediately apparent – and it may be some time before the 'new normal' establishes itself. At the time of writing (in Spring 2022), rail, bus and aviation demand remained materially below pre-COVID-19 pandemic levels, which has consequences for the financial viability of these operators.

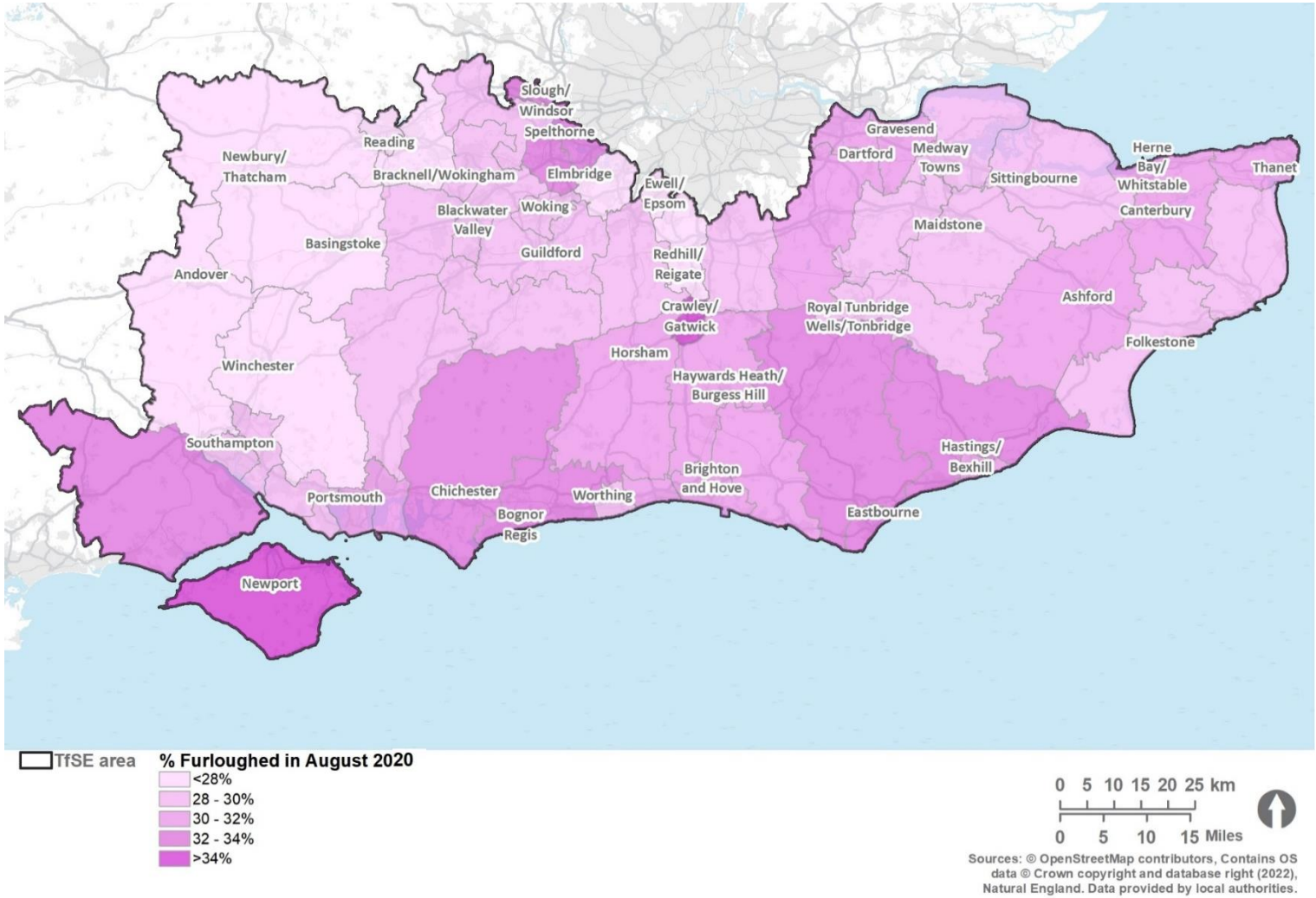
3.11 **Figure 3.2** shows the proportion of furloughed workers in the South East. Furlough rates were particularly high in the Crawley/Gatwick area, which is likely due to the high dependence of this area on the aviation industry.

3.12 The post-pandemic economic impacts on the South East remain to be seen. As the COVID-19 Response Study cited in the Evidence Base discussed, there are likely to be fundamental changes in the way people live and work, particularly with respect to the South East's relationship with London.

3.13 The South East will also need to adapt to new trading relationships with the European Union, which are already showing an impact on freight patterns. It is likely that the South East will experience more disruption due to increased trade frictions.

The SIP must acknowledge the cost-benefit for some schemes will have changed due to the pandemic, and will need to show how investment helps the South East in a post-pandemic, post-Brexit environment

Figure 3.2: Workforce on furlough (Aug 2020)



Levelling Up Left Behind Communities

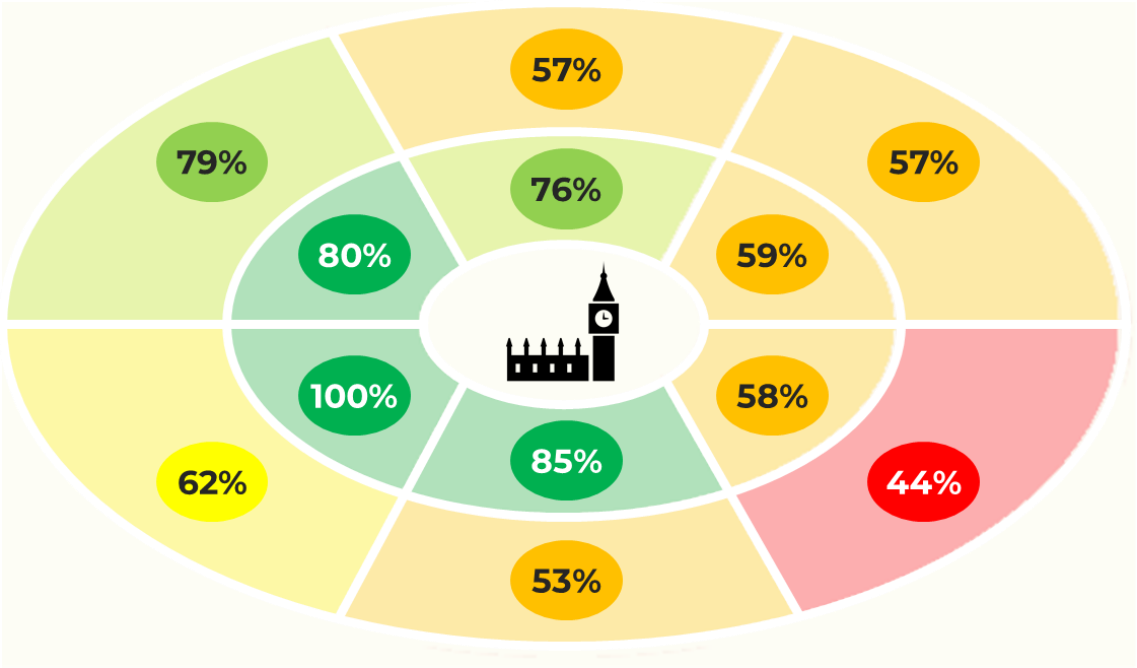
3.14 Socioeconomic outcomes are varied and, particularly in coastal areas, significantly below average. **Figure 3.3** shows the average GVA per capita observed for 12 zones around London. Six zones are in the TfSE area, and a further six (to the north of London) lie outside the TfSE area. These zones can be combined to create the areas included in the area studies.

3.15 In general, most socioeconomic indicators appear to be stronger in the west and weaker in the east. While this trend is observed both north of and south of London, it seems to be particularly acute south of the river. In summary, coastal areas need to 'work harder' to compete with other areas.

3.16 There are many reasons why coastal areas are performing less well than others. While poor transport connectivity is not the only issue at play, it is almost certainly contributing to poor socioeconomic outcomes in places like Hastings and Thanet.

It Is therefore a key goal of the SIP is to help lift the economic performance of coastal areas.

Figure 3.3: Average GVA per capita around the South East, South West/Inner = 100



Regeneration and Growth

3.17 The South East is expecting significant housing growth in the next local plan period. Future housing growth is expected to be concentrated around South Hampshire, West Sussex Coastal area, Gatwick Diamond, Kent Thameside, Medway, Ashford, and Thanet.

3.18 While much of this growth will occur in peri-urban settings, it will be critical that developments are supported with active travel and public transport connections.

3.19 This will ensure that individuals can travel sustainably to their places of work and residence without relying on private transport.

3.20 Employment growth within the South East is expected to be more concentrated within the city centres of the larger urban areas, focussing on South Hampshire, Brighton and Hove, Hastings, and Ashford Areas.

3.21 Many of the higher growth industrial sectors (e.g., financial sectors) are likely to be based within the city centres, as these industries favour urban environments.

There is a risk than an imbalance between housing and employment growth may generate unsustainable travel outcomes.

3.22 There is a risk that concentrating housing developments in more rural areas, while employment is based within the urban areas, may generate more demand by private vehicle. To ensure housing is both affordable and accessible is built, given physical and environmental constraints, some areas will be better placed to absorb housing than others.

Urban Transit Systems

3.23 TfSE's largest conurbations are large enough and dense enough to support world class mass transit systems. However, current provision is below the quality of offer provided to other large conurbations in Great Britain.

3.24 The South East is home to several large conurbations. For example, according to Office of National Statistics analysis of built-up areas, the 2011 population of the South Hampshire built-up area was just under 856,000 (6th in England and Wales) and the population of the Brighton and Hove built-up area was over 474,000 (12th in England and Wales). Farnborough, Medway, and Reading also feature in the top 30 Built Up Areas.

3.25 Analysis of demographic data also shows that these two conurbations are relatively densely populated. The Sussex Coast Conurbation is the 2nd most densely populated built-up area among the 30 largest conurbations in England and Wales, and South Hampshire is the 6th densest conurbation.

3.26 However, despite the size and density of the of these conurbations, public transport mode share is relatively low. This is especially the case in South Hampshire (4.7% according to data published by Solent Transport[1]).

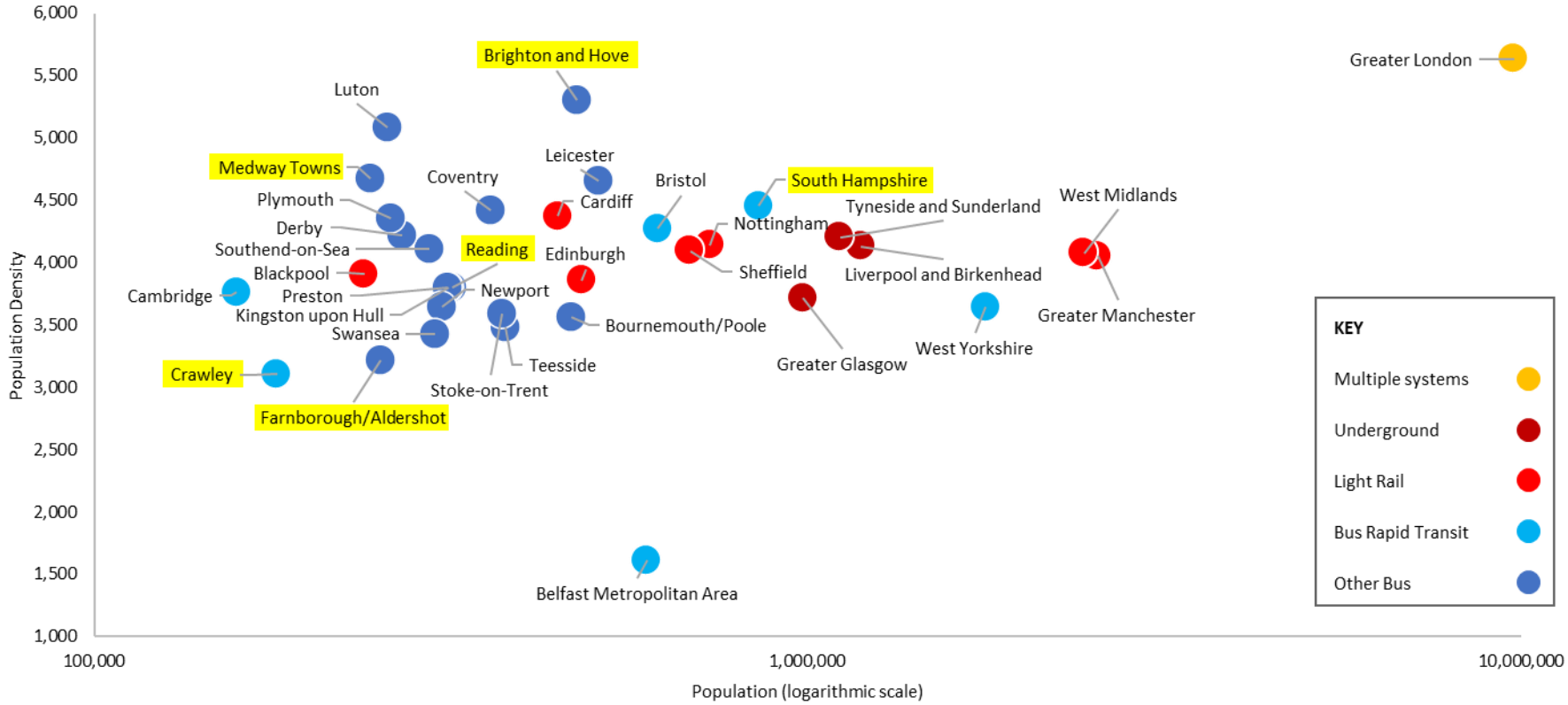
3.27 **Figure 3.4** presents the UK's largest built-up areas by population, density, and mass transit system provision. This shows that the South Hampshire and Sussex Coast conurbations are relatively large and relatively densely populated areas – more so than many other conurbations that are served by underground systems, tramways, and high-quality rail services. Many of the public transport systems shown in this chart – such as Nottingham Express Trams – can generate an operational profit[2].

It is therefore a key goal for TfSE – and therefore the SIP – to deliver world class, mass transit systems in the TfSE area's largest urban areas.

[1] Source: Solent Transport (Table 5)
https://documents.hants.gov.uk/transport for south hampshire/TransportDeliveryPlan.pdf

[2] Nottingham Trams Ltd. generated a 3% EBITDA in 2018/19
https://find-and-update.company-information.service.gov.uk/company/07644670/filing-history

Figure 3.4: Mass transit options in UK cities



Built Up Areas in the South East are highlighted in yellow

3.28 Rail could play a role in delivering a much improved mass transit offer for some conurbations – particularly in the Solent and South Hampshire area. Many of this area's urban rail stations are provided with rural levels of passenger rail service (i.e., one train per hour). Some of these stations serve sizeable populations. For example, Chandlers Ford (population 21,436) has just one service per hour. Similar frequencies are seen on the Netley Line and Botley Line areas that might see significant population growth in the medium term.

3.29 Journeys within urban areas are also slow. For example, journey times between Southampton Central and Portsmouth and Southsea are typically longer than 45 minutes, while journeys between Southampton and Bournemouth (which are further apart) are possible in 25 minutes. Consequently, mode share for rail journeys in the South Hampshire area are very low (1.4% according to Travel To Work data published by Solent Transport[3]).

The SIP includes several ambitious packages for the South East's rail network that aim to improve rail's mode share, particularly in some of the area's urban areas

3.30 Active Travel will also play an important role in enabling more people to walk and cycle for shorter journeys, as well as improve the urban realm of the South East's towns and cities.

East – West Connectivity

3.31 There are challenges with east – west connectivity in several parts of the South East.

Railways

3.32 While the South East is generally well served by radial railways, orbital passenger rail services are slow and uncompetitive with car.

3.33 **Figure** 3.5 shows the average speeds of key sections of the South East's railway network. This shows that east – west rail services deliver a significantly slower offer than most of the radial railways in the South East. Part of this is due to the condition and capability of the infrastructure, and part of this is also due to timetables and calling patterns (which is tied to capacity and capability of the infrastructure). While there are relatively few 'end to end' passenger journeys on the North Downs Line and Coastway Lines, many stakeholders believe there is a market for interurban journeys on east – west routes.

Highways

3.34 There are similar challenges for strategic east – west movements on the Strategic Road Network on the South Coast. The strategic highways serving this corridor (particularly the A27) are unable to adequately perform their strategic role.

3.35 To better understand the strategic challenges of this corridor, TfSE commissioned advisors to develop a high level gravity model for Great Britain.

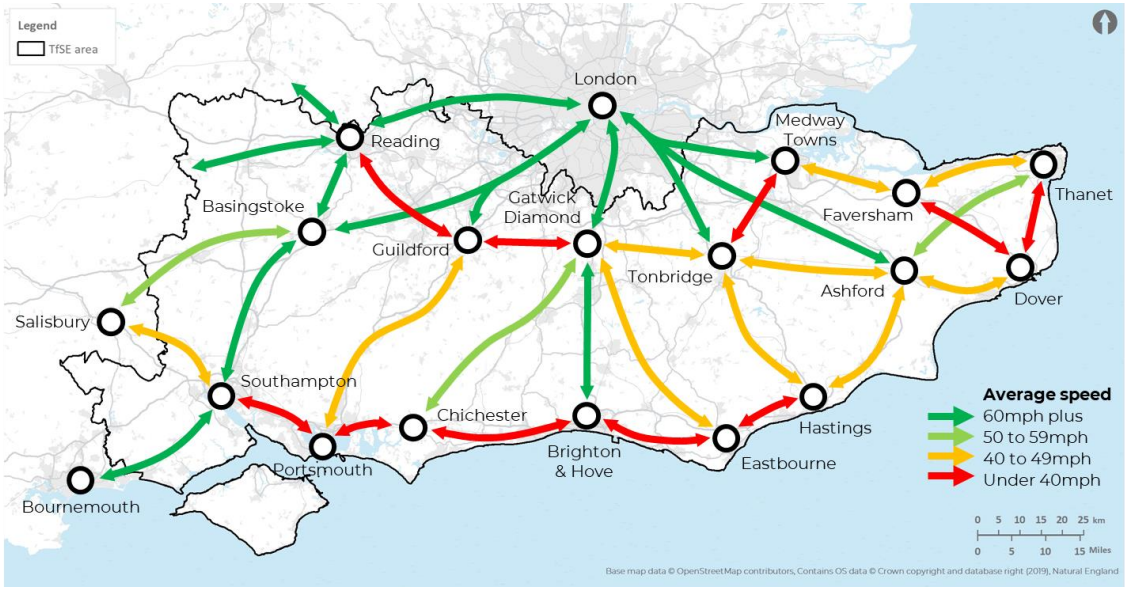
[3] Source: Solent Transport (Figure 4)
https://documents.hants.gov.uk/transport for south hampshire/TransportDeliveryPlan.pdf

3.36 This Gravity Model was used to identify the largest theoretical latent demand between the 30 largest Built Up Areas in England and Wales. The focus was on the relative 'attraction' of large population centres to each other, and the quality of the highway and railway networks connecting them together.

3.37 The Gravity Model showed that the second most significant strategic gap in Great Britain's strategic highway network (after Manchester – Sheffield) is between the South Hampshire and Sussex Coast Conurbation. It also highlighted a gap between the M3 and M4 corridors. Multi-modal interventions targeting movements on these corridors will be included in the SIP.

Key stakeholders in the South East wish to see long term multi-modal solutions that deliver much improved strategic connectivity along the South Coast.

Figure 3.5: Average speed of rail services

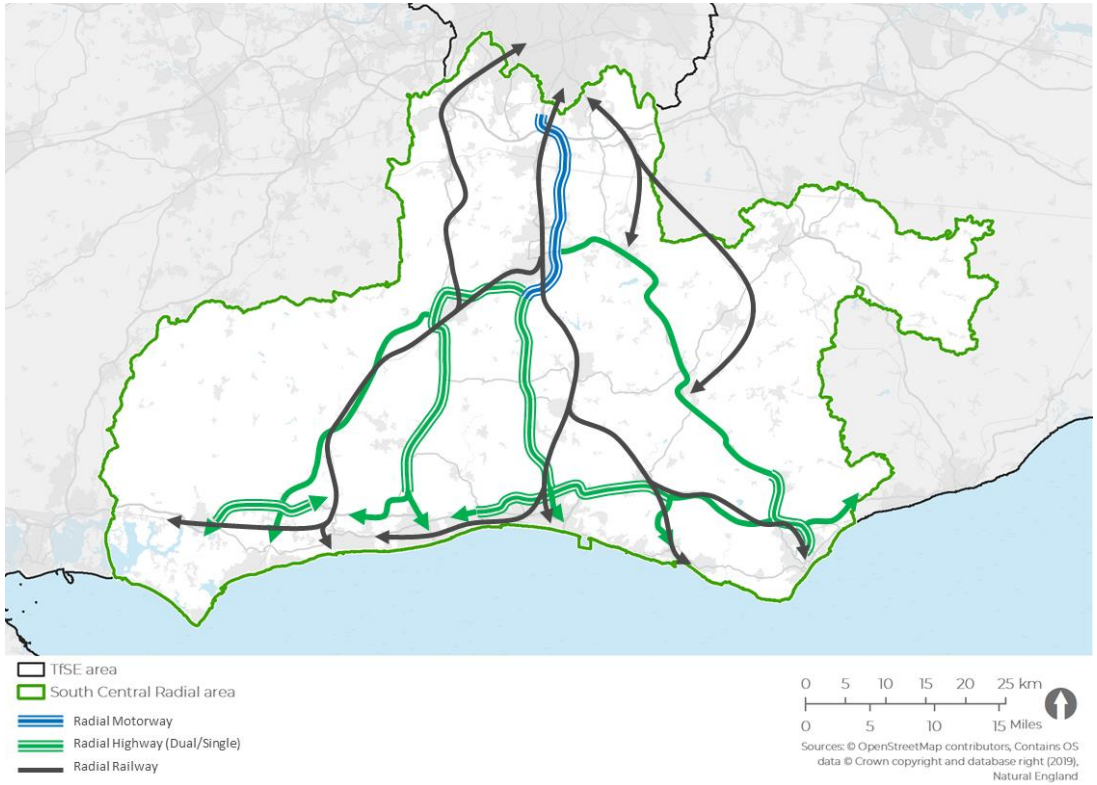


Resilient Radial Corridors

3.38 While the capacity and quality of radial corridors is generally better than orbital and coastal corridors, many of them operate at the limits of their capacity. This means they are vulnerable to disruption and – particularly in the case of railways – struggle to perform their role during planned maintenance.

3.39 The Brighton Mainline and M23/A23 corridor provides an example of this issue. As **Figure 3.6** shows, almost all radial rail routes and strategic highway routes merge at Crawley/Gatwick and continue north to London and the M25. This means significant parts of Sussex are vulnerable to disruption if there are any delays on this corridor.

Figure 3.6: London – Sussex Coast corridor



3.40 There are similar challenges with the South West Mainline, which reported very high levels of peak hour crowding on rail services before the COVID-19 pandemic.

3.41 There is also a desire to enable the South East to develop a more resilient economy to enable it to better respond to external shocks (such as those discussed under the term “New Normal”).

Global Gateways and Freight Connectivity

3.42 The South East is home to some of the busiest global gateways. Many of these ports and airports are expected to grow – in some cases by a significant margin. The challenges and opportunities facing the area’s global gateways vary according to their content.

3.43 The Channel Ports regularly face resilience challenges on the corridors between Dover, Folkestone and the M25. Kent is the gateway to the British Isles for many international travellers and freight transporters. The two busiest international gateways the Port of Dover and Folkestone Cheriton Channel Tunnel Terminal are linked to the rest of the GB motorway network by the M20 and A20. An alternative route is available via the M2 and A2 corridor, which runs through North Kent. However, this corridor features several sections that fall below the standard offered by the M20.

3.44 Heathrow Airport has good public transport access to London, but limited options for other journeys between the South East and the airport site.

3.45 There are ambitions to provide direct services to Gatwick Airport and Kent (e.g., Tonbridge, Ashford, and potentially Canterbury). There are opportunities to grow the successful Bus Rapid Transit System in Crawley to support Gatwick's planned growth.

3.46 The Port of Southampton is planning to grow significantly and shift significant activity across the Test Estuary to the Fawley area of the New Forest District. This will generate higher demand for freight between the Solent area, the Midlands, and the North of England. This may necessitate upgrades to the key highway and railway corridors that serve this port. Both National Highways and Network Rail have undertaken studies on their respective routes with this growth in mind.

3.47 There are also aspirations to improve access to the Port of Newhaven, and to explore means of shifting more freight to rail in Portsmouth and the Channel Ports.

The SIP will strengthen the resilience of corridors serving global gateways and provide them with sustainable surface access options.

SWOCs

3.48 The Technical Programme described in **Chapter 2** has provided an opportunity for TfSE and its key stakeholders to analyse the area's key **Strengths**, **Weaknesses**, **Opportunities**, and **Challenges (SWOCs)**. These have been collated from several studies and through workshops with stakeholders.

3.49 For the purpose of this report:

- A **strength** is seen as an "internal" characteristic that gives the South East a competitive advantage over other areas.
- A **weakness** is an "internal" disadvantage that means the South East needs to work hard to compete.
- An **opportunity** is an "external" and often future orientated initiative or trend, that will likely benefit the South East.
- A **threat** is an "external" and often future orientated initiative or trend that could disbenefit the South East.

3.50 A summary of the key strengths, weaknesses, opportunities, and challenges identified in TfSE's work to date is presented below.

Strengths

Assets

- **Iconic cities** – the South East is home to some of the UK's most iconic cities, including two of the largest conurbations in England (South Hampshire and Brighton and Hove). These major economic hubs serve as key recreational and employment hubs, as well as cultural centres in their own right.
- **Natural and historic environment** – the South East corridor has a high density of protected landscapes, and numerous historic landmarks, towns, and cities.
- **Agricultural and Climate** – the South East has a high portion of high-quality farming land and benefits from one of the best climates (in terms of sunshine, precipitation, and temperature) in the British Isles.

Socioeconomic Context

- **Prosperity** – some areas of the South East have the highest GVA/capita in the UK outside the capital.
- **High-value high-growth industries** – the South East is home to many high-end manufacturing, maritime, financial services, creative, and IT/data businesses. The Thames Valley is home to many international and regional HQs. These will help drive growth in the future.
- **Diversity in places and economy** – the proximity of vibrant cities, diverse landscapes, and economic opportunities provides a high level of opportunities and quality of life for the South East's residents. The diverse economy provides a degree of resilience to shocks.

Transport Provision

- **Connectivity to London** – the South East has generally good highway and railway radial routes to/from London, as well as around London (for highways only).
- **Connectivity to the West/Midlands** – the western part of the South East has generally good highway and road connections to the Midlands, West of England, and beyond.
- **Global gateways** – the area is home to Gatwick Airport and borders on Heathrow airport – the UK's two largest airports. The area is home to some of the busiest ports in Europe including those located in the Solent and Channel.
- **Gateway connections** – building on the strengths listed above, the South East's ports are generally served by high quality radial transport corridors, including the UK's (current) only purpose built High Speed Railway and the Channel Tunnel. The corridor is a crucial thoroughfare for freight arriving at the channel ports, providing onward transport connectivity to the rest of the UK.
- **Mass transit** – while bus use has been declining nationally, there are examples of strong recent growth in some areas (e.g., Reading, Crawley, Brighton and Hove).
- **Active travel** – there are several areas where cycling mode share is well in excess of the national average, and many parts of the South East are popular with leisure cycling and walking.
- **Rail infrastructure** – there are high levels of rail electrification and generally good quality rolling stock on the rail network.

Weaknesses

Political Context

- **Complex governance landscape** – with multiple levels of regional, local, and national government in the area, decision-making can be complex and slow.
- **Devolution** – the South East has fewer powers (and less independence with respect to funding decisions) than other parts of the UK due to the absence of any devolved or combined authorities.
- **South East England is not the North** – the current political narrative strongly favours investment outside "London and the South East", even though 1) funding for the South East has historically been below average for the UK and 2) many areas in the South East should qualify for Levelling Up assistance.

Socioeconomic Context

- **Significant pockets of deprivation, especially in coastal areas** – while transport is not the only driver of this outcome, poor connectivity is a contributing factor in areas such as Thanet, Hastings, and peninsulas/islands.
- **Poor housing affordability** – high house prices and a high cost of living make it difficult for those without high-end jobs to sustain a reasonable quality of life.
- **Reliance on London** – although the South East benefits from its proximity to the capital, many stakeholders in the region believe greater (and more equitable) prosperity would be achieved if the South East's Major Economic Hubs could play a greater role in the economy.
- **Reliance on particular industries** – some areas in the South East are very reliant on one or two industries for local employment, which can render these areas vulnerable during shocks. Crawley's reliance on the aviation industry meant it had the highest level of furlough in the UK during the first wave of the COVID-19 pandemic in the UK.

Environmental Context

- **Transport's contribution to carbon emissions** – not only is this high, but it is also not declining fast enough to enable the UK to reach its goal of net-zero carbon emissions by 2050.
- **Impact of transport on the natural and built environment** – many strategic corridors run through or close to protected areas (e.g. South Downs National Park) and historic cities (e.g. Canterbury), which undermines the ambience of these assets.

Transport Provision

- **High levels of car dependence and ownership** – particularly in rural areas, resulting in high car mode share where alternative modes should be viable.
- **Highway traffic in urban areas and on interurban corridors** – including congestion, safety, and air quality outcomes, notably at bottlenecks.
- **Inadequate Mass Transit systems** – as discussed in detail above, the South East stands out as having few well-developed mass transit systems compared to other regions of the UK.
- **Affordability of public transport** – since the late 1980s (when relevant data became available), bus and rail fares have increased in real terms while the cost of motoring has decreased.
- **Poor east and west/orbital connectivity** – this makes journey times by public transport uncompetitive compared to private car journeys.
- **Capacity bottlenecks** – there are long term challenges with managing capacity on key radial corridors (e.g., South Western Main Line) and orbital corridors (e.g., M25).
- **Variable rail resilience** – high utilisation and limited capacity (including, but not limited to, bottlenecks caused by level crossings, platform layout, junction design) undermine the rail network's resilience. This is likely to be further undermined by Climate Change.
- **Railway electrification gaps** – there are several gaps in the rail network's traction system, which forces operators to rely on small diesel operations, which undermines the cost, performance, resilience, and cleanliness of the railway.

- **Gaps in rural connectivity** – rural areas are understandably less well served than denser, more highly populated urban areas, which means access for residents (and visitors) in rural areas is poor.
- **Railway design** – the network is old, designed to relatively tight standards (high curvatures, tight gauges, etc), and was developed in a relatively un-co-ordinated manner, resulting in relatively poor performance and integration.
- **Relatively low cycling participation** – including in areas where cycling should be a viable option for many.
- **Rail freight to/from the Channel Ports** – while the railway has relatively high mode share from the Port of Southampton, rail freight plays a minimal role on flows to and from the Channel Ports, despite the presence of a direct rail link to Europe.
- **Access to Heathrow** – this is relatively difficult by public transport from corridors that do not directly link Heathrow to Central London.
- **Lorry Parking facilities** – there are simply not enough high-quality service areas for HGV drivers in the South East, which is particularly problematic during periods of severe delays at the Channel Ports.

Opportunities

Political and Investment Context

- **Decarbonisation agenda** – the focus on net-zero provides a unique opportunity for stakeholders to promote sustainable transport schemes such as light rail and active travel.
- **The "levelling up" agenda** – this could provide opportunities for the South East to secure additional investment for communities that have been "left behind" by recent economic growth.
- **Future Mobility Zones** – areas in the South East that receive this designation should benefit from innovation and investment opportunities tied to the "green growth" agenda.
- **Bus Back Better and Gear Change** – government policy is evolving and is currently strongly supportive of investment in mass transit and active travel interventions.
- **Rail Reform** – the establishment of a new government body to be the "guiding mind" for a better integrated rail system should deliver benefits for the South East, particularly in promoting integration in fares/ticketing and between modes.
- **Appraisal guidance** – Treasury Green Book and DfT guidance is evolving and is now placing more emphasis on the Strategic Case and less emphasise on Benefit Cost Ratios in the Economic Case.
- **Scheme pipeline** – there are several planned interventions that will target many of the weaknesses described above, including several mass transit schemes.

Socioeconomic Context

- **Housing and employment growth** – planned investment will enable more of the South East's residents to access affordable housing and local employment.
- **Demographics** – a larger, more densely populated South East (which may be more populated post COVID-19 pandemic as Londoners move out and shift to longer, albeit less frequent commutes) should be more conducive to mass transit and active travel interventions.
- **COVID-19 driven behavioural change** – increased homeworking may prove highly beneficial for the local economy of this corridor, as individuals spend more of their time and money in their local areas and reduce demand for transport infrastructure and services during busy peak periods.

- **High land value** – can lead to success in obtaining funding through funding mechanisms such as land value capture.
- **Domestic tourism** – the region has some of the most easily accessible coastline in the country, with large nearby population centres. Recent interest in domestic tourism could reinvigorate local tourism.

Technological Context

- **New technologies** – the area is home to a number of high-end manufacturing and technology businesses, leading low-carbon innovation, and development. This, combined with the relatively high levels of prosperity across the corridor means that uptake of these new technologies is likely to be rapid and widespread.

Transport Provision

- **Behavioural change** – changes in patterns of working and commuting, which accelerated during the COVID-19 pandemic, has unlocked capacity on some parts of the transport system, notably on radial railways.
- **Airports** – additional capacity planned for Gatwick and Heathrow, which should strengthen the case for improving airport access by rail.
- **Freeports** – Government policy on Freeports may offer opportunities for investment in the South East's ports.
- **Rail freight** – released capacity on the rail network and growth at Southampton should unlock opportunities for higher rail freight mode share.
- **Spare capacity** – there is some spare capacity on the rail network (e.g. HS1 rail line, Victoria Station) that could unlock opportunities for new and/or faster journeys. Opportunities beyond the South East will grow when HS2 opens.
- **Untapped markets** – studies by Solent transport have highlighted significant opportunities for rail to grow mode share in the South East's largest conurbations. Similar opportunities appear to exist on several east – west corridors.

Challenges

Environmental Context

- **Climate Change mitigation (decarbonisation)** – the South East's transport networks need to change radically if the government is to deliver a net-zero transport system by 2050. This is especially challenging for the highways and aviation sectors. Emissions also need to be considered when committing to develop large infrastructure projects, which generate emissions in their own right through their construction and operation.
- **Climate change impacts (sea level rise, coastal erosion, extreme storms, droughts)** – the South East is one of the warmest and most rapidly warming areas of the country. Several transport corridors are vulnerable to disruption (e.g., landslips) caused by extreme weather.
- **COVID-19 pandemic** – the impact of the pandemic on the South East's health, welfare, economy, and transport systems has been severe. The finances of public transport systems are under significant pressure, and this has forced many operators to reduce services. The fallout

from the pandemic is expected to place significant pressure on public finances for many years to come. Changes in travel demand mean the case for investment in some schemes (e.g., focussing on radial rail capacity) will be weaker than before.

- **Air quality** – many areas in the South East are blighted by poor air quality and are struggling to achieve the levels of air quality required by legislation. Significant changes may be needed in some towns and cities, and already some areas are implementing significant demand management policies (e.g. Clean Air Zones) to manage this issue.
- **Lack of space** – there is limited space for new housing and transport infrastructure due to environmental constraints and the relatively high levels of population density in the South East. Furthermore, the areas of the South East that do have available land are not necessarily the same places where there is highest demand for new development.

Political Context

- **UK exit from the European Union (EU)** – the UK's new relationship with the EU has created new barriers to trade and migration, which has the potential to generate regular significant queues at the Channel Ports.
- **Building consensus among stakeholders** – the size and diversity of the South East means it can be challenging to build consensus across the whole area. However, this is an area where TfSE can play a positive role in building and articulating a shared vision for the area.

Socioeconomic Context

- **Population growth** – the South East needs to provide adequate housing, sustainable infrastructure, and high quality services to cater for a growing (and ageing) population.

Transport Context

- **Perception of bus and active travel** – for many people, the bus and cycle carry negative connotations that prevent these modes from being as popular as they could be.
- **Increasing opposition to highway intervention (including cycleways)** – there is increasing opposition to any intervention on the highway network, partly driven by concern about climate change. However, concerns about climate change have not been enough in some places to engender support for road space reallocation to mass transit and/or active travel modes.
- **Growth in online shopping** – while this trend has helped relieve pressure on supermarket car parks, it has generated significantly more delivery vehicle traffic, particularly from micro freight vehicles.

Link to vision, objectives, and problem statements

3.51 The strengths and opportunities have been developed to create a vision and set of objectives for the SIP. Similarly, the weaknesses and challenges were developed further into Problem Statements, which describe problems the SIP should seek to address. These are described in more detail below.

Problem Statements

3.52 The TfSE Area Study Programme identified specific problems (weaknesses and/or challenges) that many stakeholders wish to see the SIP address. A list of all the problem statements captured in this process (and grouped by theme) is provided below.

Global Issues

- Transport is not decarbonising fast enough.
- Climate change threatens the resilience of transport networks.
- Freight is heavily reliant on highways, especially for first-mile-last-mile deliveries.
- Numerous parts of the South East have unacceptably poor socioeconomic outcomes.
- Some parts of the South East appear to be too reliant on a small number of industrial sectors.
- The economic influence of London dominates many areas in the South East.
- There is a recognised need for housing and communities – but in the right places, supported by the right infrastructure, planned to deliver sustainable transport outcomes.
- The mobility benefits of new technologies are not accessible to everybody.
- There is substantial economic disparity in the area.
- Housing affordability presents a barrier to achieving social equity objectives.
- There is a need for better coordination between land-use and transport planning.
- Demand for public transport has been negatively affected by COVID-19.

Access and Affordability

- Rural communities are being left behind in digital, active travel, and public transport connectivity.
- Too many transport services and networks are inaccessible to all users.
- For many people, public transport fares are too high and too complicated.

Active Travel and Mobility

- Cycling participation and provision is too low and there are strategic gaps in parts of the area's cycle network.
- Cycling accounts for a small proportion of commuting and business trips.

Urban and Inter-urban Mass Transit

- Current public transit systems do not meet all the needs of the area's largest conurbations.
- In too many areas bus services do not provide a competitive sustainable alternative to cars.
- There are gaps in the quality of interurban public transport provision, particularly in rural areas.
- Public transport integration is weak both physically and in terms of the 'customer journey'.
- There are too few "strategic mobility hubs", offering high quality integration and interchange between different transport services, outside town centres.
- Public transport information and ticketing arrangements are not sufficiently coordinated nor adequately integrated, particularly across transport modes.
- Urban highway congestion is a problem in several major economic hubs.
- In many areas, bus services do not provide a competitive sustainable alternative to cars.
- Too many public transport services and networks are not accessible to all users.

Highways

- The area's major highways do not provide effective east – west connectivity.
- The area's major highways run through and/or close to protected areas, undermining the quality of local environments.
- Too many major highways pass through densely populated communities, causing noise, pollution, and severance issues.
- Highway traffic accessing ports in the area is negatively impacting the environment in town and city centres.
- There are several congestion, road safety, and air quality "hot spots", particularly in Town Centres and at major junctions.
- Many of the South East's major highways do not have enough capacity to accommodate planned housing (and potential airport) growth.
- There are too many level crossings with busy railways on major highways along the South Coast.
- The M25 South West Quadrant is at capacity.
- The Lower Thames Crossing will increase congestion on the local highway network.

Railways

- Journey times and frequencies on east – west rail services are poor, especially compared to radial rail services.
- Rail capacity is insufficient to accommodate the needs of long-distance passenger, local passenger, and rail freight customers.
- The Marshlink railway is inadequate to meet future aspirations for stakeholders.
- Resilience is relatively poor on the Brighton Main Line (especially at a bottleneck at East Croydon).
- Spare capacity is limited on the Brighton Main Line and the allocation of this capacity does not meet the needs and/or aspirations of all the area's stakeholders.
- Connectivity is relatively poor for communities served by the Arun Valley Line, East Coastway Line, and Oxted Line
- Inner Orbital rail journey times are slow.
- Level crossings on busy highways reduce the capability of the service provided.
- Infrastructure constraints are a barrier to more freight being carried by rail.
- Rail capacity allocation prioritises radial journeys over orbital trips.

Global Gateways

- Dover is highly constrained by its small footprint and access.
- The Channel Ports (Dover/Folkestone) are too reliant on one highway corridor.
- Too many disruptive events at ports result in disruption on the highway network.
- Orbital rail connectivity to Gatwick and Heathrow is poor.
- Highway congestion constrains access to Solent Ports.

Coastal, River, and Island Access

- Kent/Medway area is "cut off" from the rest of the UK by London and the Thames.
- Highway congestion undermines public transport on the Isle of Wight.
- Ferry services on the Isle of Wight do not facilitate the same level of access to services as the mainland
- Ferry fares are high and do not provide enough accessibility for the Isle of Wight.
- Poor connectivity is holding coastal communities back
- The geography of the South Coast forces people and goods moving along the coast to travel long distances inland to complete their journeys.

4 Vision and Objectives

Introduction

4.1 This chapter:

- outlines the Vision and Objectives collated from the review of the Evidence Base; and
- presents several Key Performance Indicators that could be developed to monitor the delivery of these objectives.

Transport Strategy

4.2 The Transport Strategy provides a strategic vision, objectives, priorities, and principles for a thirty year planning period (up to 2050) for South East England.

Vision

4.3 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. This statement 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.

Objectives

4.4 The vision is underpinned by three strategic goals, as shown in **Figure 4.1**:

- **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.

Figure 4.1: Transport Strategy Objectives

Priorities

4.5 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.

Economic Priorities

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

- 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

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

- 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

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

- 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.

Principles

4.9 The vision, objectives and priorities outlined above describe the outcomes that TfSE and its partners and stakeholders wish to realise by 2050. The rest of the transport strategy describes how they can be achieved.

4.10 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.

4.11 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.

Movement and Place Framework

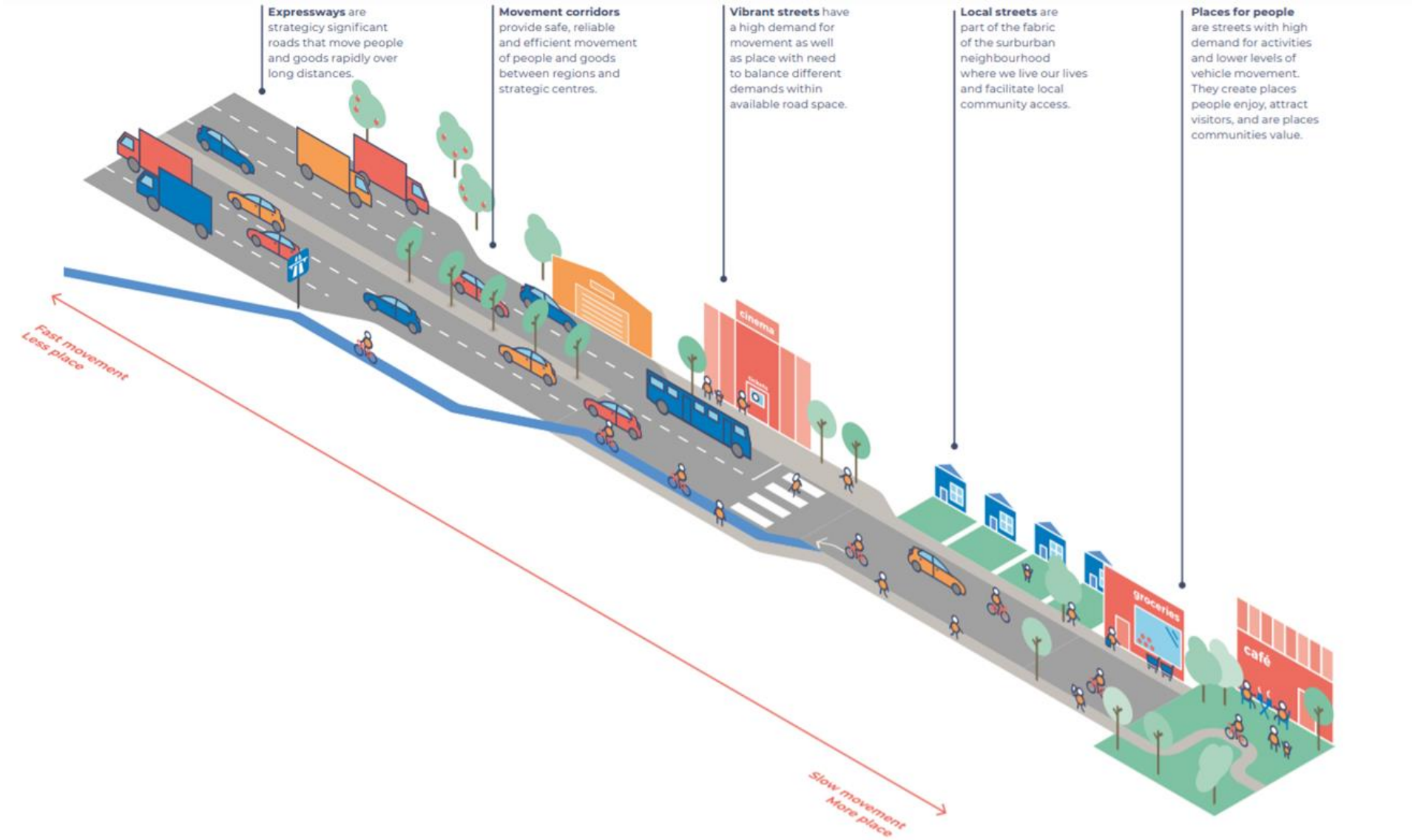
4.12 The transport strategy envisages a South East where villages, towns and cities thrive as successful places, where people can live and work with the highest quality of life. Transport networks that seek to provide maximum throughput of vehicles along a corridor have the potential to bring damaging consequences socially and environmentally.

4.13 The transport network has competing priorities - it must ensure people can efficiently move from one place to another and ensure that 'places' are protected and ideally enhanced.

4.14 The best way to ensure that this occurs is to develop a 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'. **Figure 4.2** illustrates this.

4.15 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 enhance the environmental quality of these places, ultimately ensuring that they can continue to fulfil their role as the focus of their communities.

Figure 4.2: Movement and Place Framework



4.16 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. The optimal transport network is one where vehicle flows are aligned to appropriate movement and place functions across the network, and where conflicts between user types are minimised to ensure the efficient and safe operation of that transport network.

Area Studies

4.17 The area studies describe how the TfSE Transport Strategy will be delivered at a sub-regional level. Each of the five studies articulates a vision and set of objectives for its respective area.

Visions

4.18 The visions for the five area studies are presented below:

Outer Orbital

4.19 By the year 2050 the two conurbations of the Outer Orbital area – South Hampshire and Sussex Coast – will be served by world class urban mass transit systems and will be an attractive environment for active travel. Both conurbations will be joined together by high-quality rail and highway infrastructure that are sensitive to the area's outstanding natural and historic environment. This will deliver sustainable and equitable economic growth for the area's residents and businesses.

Inner Orbital

4.20 By 2050 all Major Economic Hubs within the area will be quickly and efficiently connected into a high quality, sustainable, public transport network. The Primary Orbital Rail Arc will facilitate swift centre to centre connectivity, strategic mobility hubs will support seamless interchange with radial lines as well as the wider public transport network and bus based Mass Rapid Transit and active mobility corridors will sustainably connect Major Economic Hubs into the Primary Orbital Rail Arc.

South Central Radial

4.21 The vision for the South Central Radial Area is to develop a transport network that builds on earlier success, strengthens the area's transport networks' resilience, supports sustainable growth, and delivers for all modes. This vision:

- builds on earlier success by expanding mass transit in Crawley and Brighton;
- strengthens resilience by improving railway, highway, and active travel north-south infrastructure;
- supports sustainable growth by providing capacity for housing in the Gatwick Diamond to grow; and
- delivers for all modes by including packages for every mode of transport.

South West Radial

4.22 The vision for the South West Radial Area is:

- fast, responsive, and reliable strategic transport network facilitating sustainable movement within and between major economic hubs;
- levelling up of connectivity across the whole Solent sub-region to facilitate

greater access to jobs, skills and vital services; and
- an efficient and resilient freight network to support growing demand from the Solent Ports and stimulate a successful economy.

South East Radial

4.23 The vision is to deliver a better connected, more resilient, better integrated, and more sustainable transport system for the South East. This will reduce the isolation of the most deprived communities in the area and contribute to the government's "Levelling Up" agenda by unlocking opportunities for growth and regeneration. It will strengthen the key corridors that serve some of the UK's busiest international gateways and provide viable sustainable travel options for all.

Common Objectives

4.24 Each area study developed six objectives (many with sub-objectives). All five area studies coordinated to adopt four common objectives reflecting the three TfSE Transport Strategy objectives, along with a fourth objective for Climate Change. These are presented below.

Economy

4.25 The South East's transport systems will boost prosperity for all and reduce the disparity in socioeconomic outcomes. It will do so in a sustainable manner, and not at "any cost" to society and the environment. It will achieve this by:

- boosting productivity through better skills matching, knowledge sharing and agglomeration;
- improving transport network efficiency, reliability, and resilience;
- ensuring digital and energy networks can meet future transport needs;
- reducing costs for businesses; and
- attracting investment in high growth, high value opportunities.

Society

4.26 The South East's transport systems will enable better and more equitable socioeconomic outcomes:

- supporting better place-making and creating new sustainable communities;
- enabling residents to easily access employment, affordable housing, and services – particularly for those who do not have access to a car;
- increasing the affordability of convenient, high quality, active travel and public transport options;
- improving access for all members of society, especially individuals with additional needs; and
- enabling deprived communities to attract investment and achieve more equitable socioeconomic outcomes.

Natural and Historic Environment

4.27 The South East's transport systems will protect and enhance the natural and historic environment by:

- adopting the principles of environmental net gain;
- avoiding interventions that significantly and permanently undermine protected environments, in particular landscape, historic and ecological designations;
- reducing the impact of transport operations on ecosystem services; and
- improving public and active transport access to natural, protected, and historic environments.

Climate Change

4.28 The Outer Orbital area's transport systems will move to net zero carbon and minimise disruption from climate change by:

- reducing the need to travel;
- enabling and growing active travel;
- shifting passenger and freight travel from fossil fuel traction to zero emission traction;
- improving transport network energy efficiency; and
- improving transport network resilience to climate events.

Area Specific Objectives

4.29 In addition to four shared objectives, the area studies developed a further two objectives for their respective areas. In several cases, these objectives are shared between two areas. These are presented below:

Safety (Outer Orbital and Inner Orbital)

4.30 The South East's transport systems will be safe for all users and will give them confidence and security to walk on, or cycle on, or cross any of the area's highways. We will do this by:

- providing a safe road network with high-quality, fully connected, segregated infrastructure (where appropriate) that helps people overcome their fears of walking and cycling; and
- prioritising vulnerable users over less vulnerable users where there are conflicts.

Health and Wellbeing (Outer Orbital and Inner Orbital)

4.31 The South East's transport systems will minimise adverse impacts on human health and promote healthy living by:

- developing transport networks that minimise any adverse impacts of transport on human health – including noise and poor air quality;
- reducing the impact of existing transport networks and traffic on noise, air quality, and human health; and
- encouraging active leisure activities that promote healthy lifestyles.

Reliability and Resilience (South Central Radial)

4.32 The South East's economy and transport systems will strengthen its resilience to external shocks by:

- reducing the probability and impact of external shocks disrupting the area's transport networks;
- building the right capacity and capability to respond effectively and quickly to external shocks;
- enabling the area's transport systems to recover quickly from disruption;
- consistently delivering high levels of reliability during normal periods of operation; and
- enabling the economy to grow and diversify to enable the area to effectively respond to future economic shocks.

Sustainable Integrated Planning (South Central Radial)

4.33 The South East area will provide the affordable housing the area needs, but in a way that promotes sustainable travel outcomes by:

- promoting development that reduces the need for residents to travel long distances to access employment, education, services, and transport hubs;
- promoting development that encourages active travel and public transport over private car;

- promoting development on and/or near to existing public transport corridors and hubs; and
- enabling a balance of housing and employment growth to prevent significant imbalances within and between Major Economic Hubs.

Cross Boundary (South West Radial)

4.34 The South East will maintain and strengthen economic and social relationships with locations outside of the Transport for the South East area by:

- working with neighbouring sub-national transport bodies to enable sustainable cross boundary connectivity between major economic hubs;
- improving access between the area's international gateways and the rest of the UK; and
- strengthen resilience of transport corridors serving freight markets.

Freight (South West Radial)

4.35 The South East will support sustainable and efficient movement of goods through the region, to and from the wider UK by:

- improving freight connectivity through sustainable modes, including electric rail freight; and
- balancing the needs of passenger and freight demand.

Regeneration (South East Radial)

4.36 The South East's transport networks will promote the economic regeneration of the area, particularly in the more deprived parts of the area, by:

- supporting sustainable economic development by providing multi-modal transport access to employment, services, and housing developments;
- increasing access to employment, education, and training opportunities to a wider segment of the area's population;
- addressing market failures where current transport and/or access arrangements are holding back regeneration opportunities; and
- supporting growth in domestic tourism by providing sustainable access to the area's natural, historic, cultural, sporting, leisure, and recreational attractions.

International Gateways (South East Radial)

4.37 The South East's transport networks will continue to serve as the gateway to Europe for the wider UK in a "post Brexit" economy by:

- strengthening the resilience of transport corridors serving the busiest international gateways in the area;
- responding to new developments in the trading relationship between the UK and the European Union;
- improving access to international gateways through sustainable modes, including electric rail freight; and
- improving access between the area's global gateways and the rest of the UK.

Future Mobility Strategy

4.38 The Future Mobility Strategy presents a vision and objectives for future mobility in the South East.

Vision

4.39 By 2035, the South East of England will have a globally leading sustainable mobility ecosystem accelerating the move to net zero. The region will be at the forefront of

innovation, integrating new technologies, modes and services with digital communications and energy networks. People and all the places they live, work, learn and play, will steer our actions, ensuring the future of mobility is inclusive of and responsive to their needs and provides opportunities and choices for all.

Objectives

4.40 The Future Mobility vision is supported by a series of detailed objectives which the strategy and its interventions aim to achieve over the period to 2035:

- Future mobility will play a central role in helping decarbonise the transport eco-system through the provision of electromobility modes and services to help reduce dependency upon the sole occupancy, private car irrespective of propulsion type.
- Active travel will be the first choice for local journeys, for those who are able, supporting better air quality and the improved wellbeing of communities.
- Zero emission mass transit will be at the centre of the mobility ecosystem, reducing car dependency and ownership.
- The connectivity, capacity, efficiency, reliability, and resilience of the mobility ecosystem will be optimised, making best use of existing assets and investments in services and infrastructure.
- Future mobility will be integrated with the established passenger and freight/logistics transportation networks, delivering safe, seamless journeys, and making planning, using, and paying for mobility simpler and easier.
- Future mobility will be integrated with spatial and economic planning, making high quality people-focused places, securing funding, supporting investment in the region's economy, and targeting investment where it is needed most.
- The mobility eco-system will be people-centric and accessible to all, supporting the lives of everyone through integrating the needs of communities and urban and rural places, with policy, modes, services, and infrastructure.
- Fit for purpose digital connectivity will be universal, improving access to services and reducing the need to travel.

Freight, Logistics, and International Gateways Strategy

4.41 The Freight, Logistics, and International Gateways Strategy presents a vision and objectives for freight and global gateways in South East England.

Vision

4.42 By 2040, the South East will have a more efficient, sustainable, and safer logistics sector, to support sustainable economic growth, with significantly reduced impacts on communities and the environment.

Objectives

4.43 The strategic objectives for the Freight, Logistics, and International Gateways Strategy reflect TfSE's strategic priorities for the freight and logistics sector. The strategic objectives complement each other to deliver Transport for the South East's strategic vision for the sector by 2040. The Objectives are:

Economic objectives

4.44 To improve the capacity, and operational efficiency of the freight and logistics sector in the Transport for the South East area through:

- improved reliability and capacity for freight (rail and road) on the transport network;
- improved connectivity to markets in the TfSE area;
- improved integration between different modes of freight transport;
- reducing the impact of rail and road congestion on freight operations;
- reducing the impact of freight operations on rail and road congestion; and
- increased land availability for current and future freight and logistics activities.

4.45 To enhance the contribution of the freight and logistics sector as an important industrial sector and employer in the Transport for the South East area through:

- improved freight and logistics skills and job opportunities;
- measures to address specific labour and skills shortages;
- support for inward investment and innovation best practice; and
- improved working environments for employees.

4.46 To improve connectivity to the international gateways in the TfSE area by providing infrastructure to meet changing patterns of demand.

Social objectives

4.47 To improve the safety of the freight sector through reductions in the number of accidents involving goods vehicles on roads, particularly with vulnerable road users.

4.48 To better integrate freight into place-making activity through:

- integration of freight considerations in land use planning, development plans and construction, delivery, and servicing plans for existing and new developments; and
- better freight data to inform better planning decisions.

Environmental objectives

4.49 To reduce the impact of freight and logistics operations on the environment through a reduction in air pollution and greenhouse gas emissions from the sector to achieve net-zero by 2050 at the latest.

4.50 To reduce the impact of freight on communities through reductions in noise levels, air quality impacts, intermodal transfers, and informal overnight lorry parking.

Key Performance Indicators

4.51 The Transport Strategy proposed a set of key performance indicators (KPIs) to monitor how well the strategy is progressing towards meeting strategic priorities. These will be further developed and considered for inclusion in the SIP. These KPIs are presented in **Table 4.1** below.

Table 4.1: Key Performance Indicators

Strategic Priorities	Indicators
Economic	
Better connectivity between our major economic hubs, international gateways, and their markets.	• The delivery of improved road and railway links on corridors in need of investment. • Improved public transport access to Heathrow Airport. • 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 delating to reduced delay on road network suffering from Road Traffic Collisions.

Strategic Priorities	Indicators
Economic (continued)	
A new approach to 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 developed in line with Local Transport 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 (continued)	
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 journey planning, paying for, and using different forms of transport simpler and easier.	• 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.

Strategic Priorities	Indicators
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.
Use of the principle of 'biodiversity net gain' in all transport initiatives.	• No transport schemes or interventions result in a net loss of biodiversity.
Minimisation of transport's consumption of resources and energy.	• Reduction in non-renewable energy consumed by transport.

5 Packages of Interventions

Introduction

5.1 This chapter:

- presents a consolidated summary of the packages developed by the area and thematic studies;
- outlines how these packages address the Problem Statements and Objectives; and
- presents a high-level assessment of their deliverability.

Packages of Interventions

5.2 The Area Study Programme included extensive research and stakeholder engagement exercises that identified hundreds of potential interventions. These ranged from relatively developed, tightly defined, modally specific schemes to much broader global policy interventions (e.g. a national road user charging scheme).

5.3 Each proposed intervention was qualitatively assessed using a Multi Criteria Assessment Framework. The details of these assessments are set out in each Area Study's Option Assessment Report, but in summary, these included:

- a **Strategic Assessment** that considered the alignment of each intervention with the Objectives of the study, as well as with wider public policy;
- an **Economic Assessment**, based on DfT's EAST framework; and
- a **Deliverability Assessment**, also based on DfT's EAST framework (this is described in more detail below).

5.4 Interventions that performed above an agreed threshold (e.g., those scoring 3/5 or higher for Strategic and Economic Assessments and 2/5 or higher for Deliverability Assessments) were shortlisted for inclusion in the SIP.

5.5 The shortlisted Interventions were combined to create Packages of Interventions. In general, Packages are formed of interventions that have a common modal and/or spatial character. Maps showing the approximate locations of the packages and their component interventions are provided in **Appendix A**.

5.6 Each Package of Interventions was modelled using a Land Use Transport Interaction Model called "SEELUM" (South East Economic and Land Use Model). This

model provides outputs for changes in transport outcomes (trips by mode and purpose) and socioeconomic outcomes (employment, population, and GVA). The model also provides an estimate for changes in carbon emissions – although this element carries much less certainty than other metrics.

5.7 Modelling results are presented in both the Area Study Options Assessment Reports (OARs) and Strategic Programme Outline Cases (SPOCs). It should be noted that the geographies served by the SPOCs is slightly different to the areas served by each OAR (there are five OARs and four SPOCs).

5.8 The cost of implementing each Intervention included in the Packages has been estimated at a high level. These costs are presented in the SPOCs.

5.9 Global Policy Interventions (such as increased home working or changes in public transport fares) were modelled separately across the whole South East area, rather than at an Area Study OAR or SPOC level. At the time of writing, the Global Policy Interventions that are likely to be included in the SIP include:

- Road charging / demand management
- Public transport fares
- Public transport integration
- New mobility technologies
- Virtual working

5.10 The combined results from the geographically distinct SPOCs will be combined with the Global Policy Interventions and presented together (as well as separately) in the SIP.

Alignment with Objectives

5.11 Each Area Study's Options Assessment Report includes an assessment of the degree to which each Package of Interventions 1) addresses the Problem Statements identified by the study and 2) supports the Objectives of each study.

5.12 Additionally, the SPOCs present a Theory of Change framework that maps the "inputs" of each intervention to the "output", "outcomes", and "impacts" that each Package is designed to deliver.

5.13 Tables summarising the alignment of the Packages of Interventions to each Area Study's objectives and Problem Statement are presented in **Appendix B.**

Deliverability Assessment

5.14 The Multi Criteria Assessment Framework included a high-level assessment of the deliverability of each Intervention. Each intervention was scored on a scale of 1 to 5 against the following criteria:

- **Capital costs:** Interventions were assigned a score based on their anticipated cost (estimated by ranges/bands). Interventions expected to incur high capital costs were assigned a score of 1, while those with lower costs were assigned a score of 5.
- **Value for Money:** Value for Money assessments were broadly based on the scale of funding each intervention is expected to need. For example, larger Nationally Significant Infrastructure Projects were generally assigned lower scores than interventions requiring less public funding.
- **Affordability**: Affordability was assessed against the likelihood that funding can be provided. It considered the attractiveness of project to delivery partners to provide funding, and whether there is a need for additional

funds from non-government sources. Interventions with high levels of affordability were allocated a score of 5, and those deemed least affordable were assigned a score of 1.

- **Timescales**: Interventions were assigned timescale bands, which encompassed short term (considered those that would be delivered within five years), medium term (delivered within five to fifteen years), and long-term (greater than fifteen years beyond the Local Plan end date) in line with Local Plan needs.
- **Technical Complexity**: Technical complexity was based on benchmarking against comparable schemes. 'Riskier' projects were assigned lower scores than less risky projects.
- **Acceptability**: At this stage of the assessment, it was assumed that those interventions with smaller budgets are more likely to be developed, funded, and supported by both the public and politicians than those of a much greater scale of impact.
- **Evidence Base**: Finally, the Project Team reviewed the evidence base informing the development of each proposed intervention. Those interventions that can cite projects that have been successfully delivered in the UK were awarded higher scores than those supported by 'thinner' evidence bases.

5.15 A summary of the results of the deliverability assessment for each Package is presented in the SIP**.**

5.16 The deliverability of each Package will be further analysed as part of the SIP development process. This will include further analysis of funding and financing opportunities, roles and responsibilities, monitoring and evaluation, and governance (including TfSE's role).

Other Deliverability Considerations

Funding and Financing

5.17 A Funding and Financing Report was developed to support the Transport Strategy. This report explored potential funding mechanisms for schemes and interventions.

5.18 At that time, it was envisaged that public finance would remain the key source of funding for highway and railway infrastructure in the near future. Given the pressures placed on public finances, the Transport Strategy acknowledges new funding models will need to be pursued longer term. Funding models, such as hypothecated transport charging schemes that manage demand and raise funds, were discussed.

5.19 The SIP will include a Funding and Financing chapter to outline options and recommendations for securing funds to deliver the Packages included in the SIP.

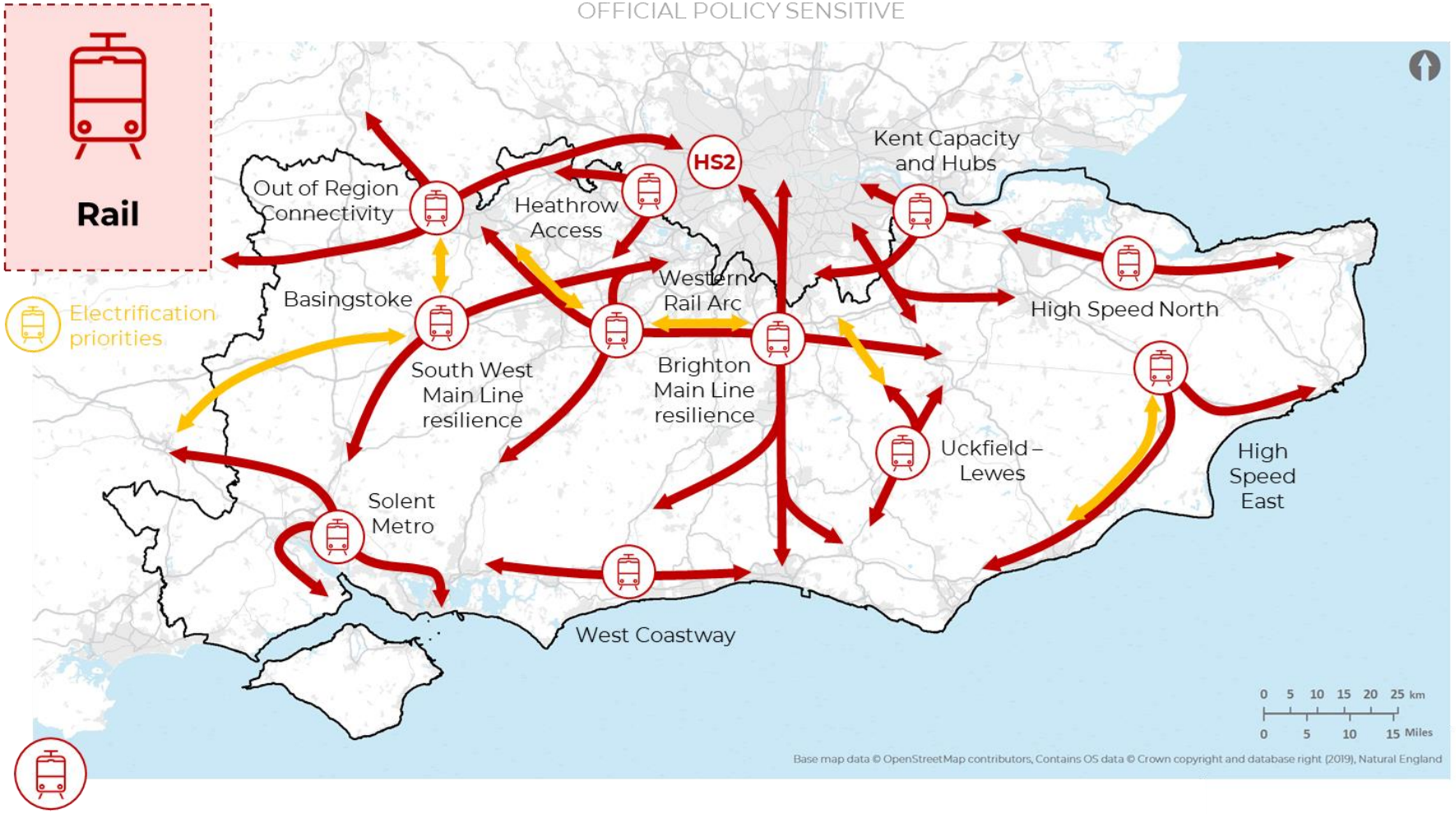
Governance and Next Steps

5.20 The Transport Strategy commits TfSE to put in place governance arrangements that will enable the development, oversight, and delivery of the Transport Strategy. At that time, TfSE was preparing to submit a proposal to secure Statutory Status. This approach has been refined (see the TfSE Future Organisation in **Chapter 2**), but it goes without saying that TfSE aspires to play a significant role in delivering the Transport Strategy in the future.

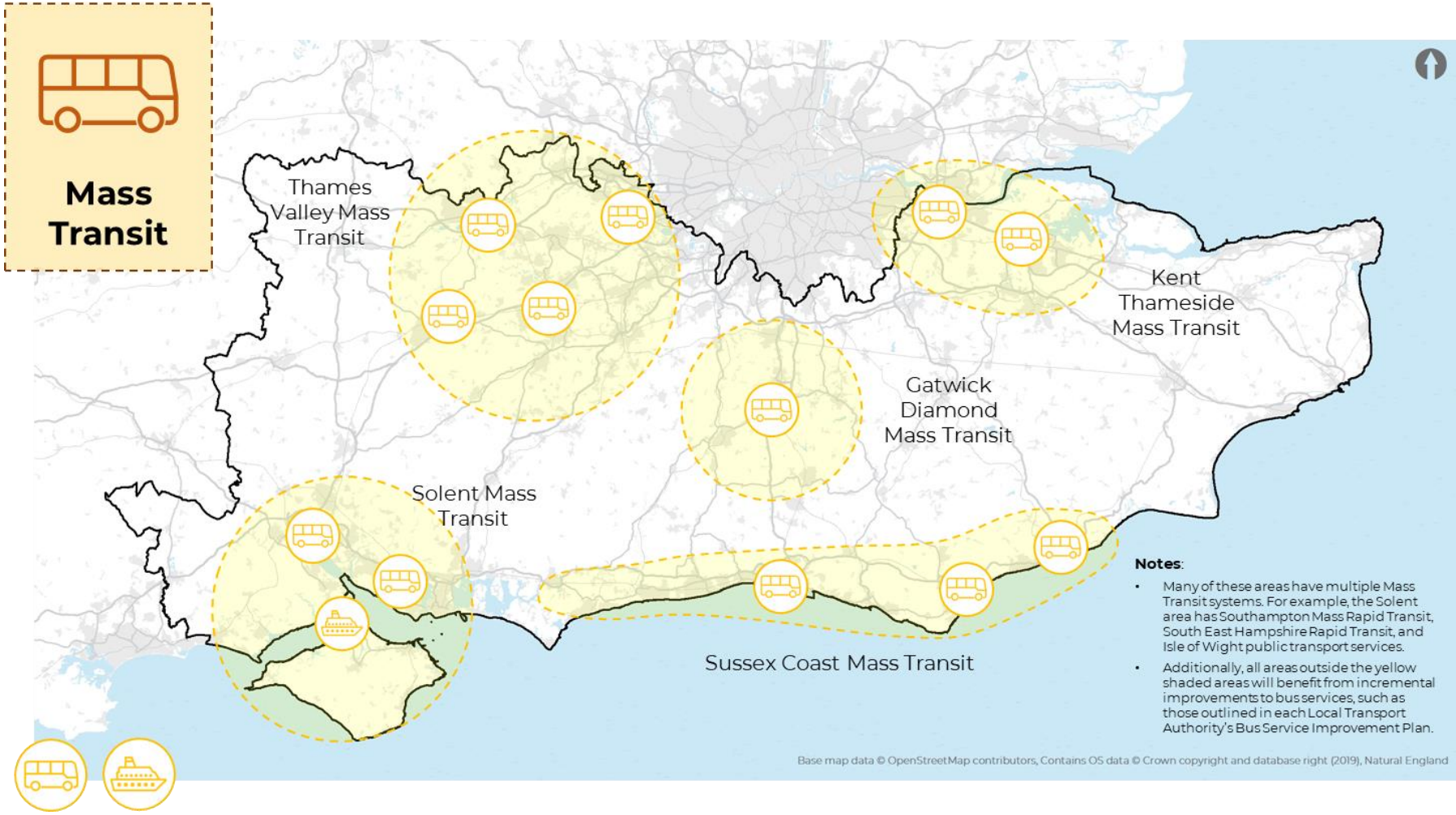
A Appendix A

Packages of Interventions

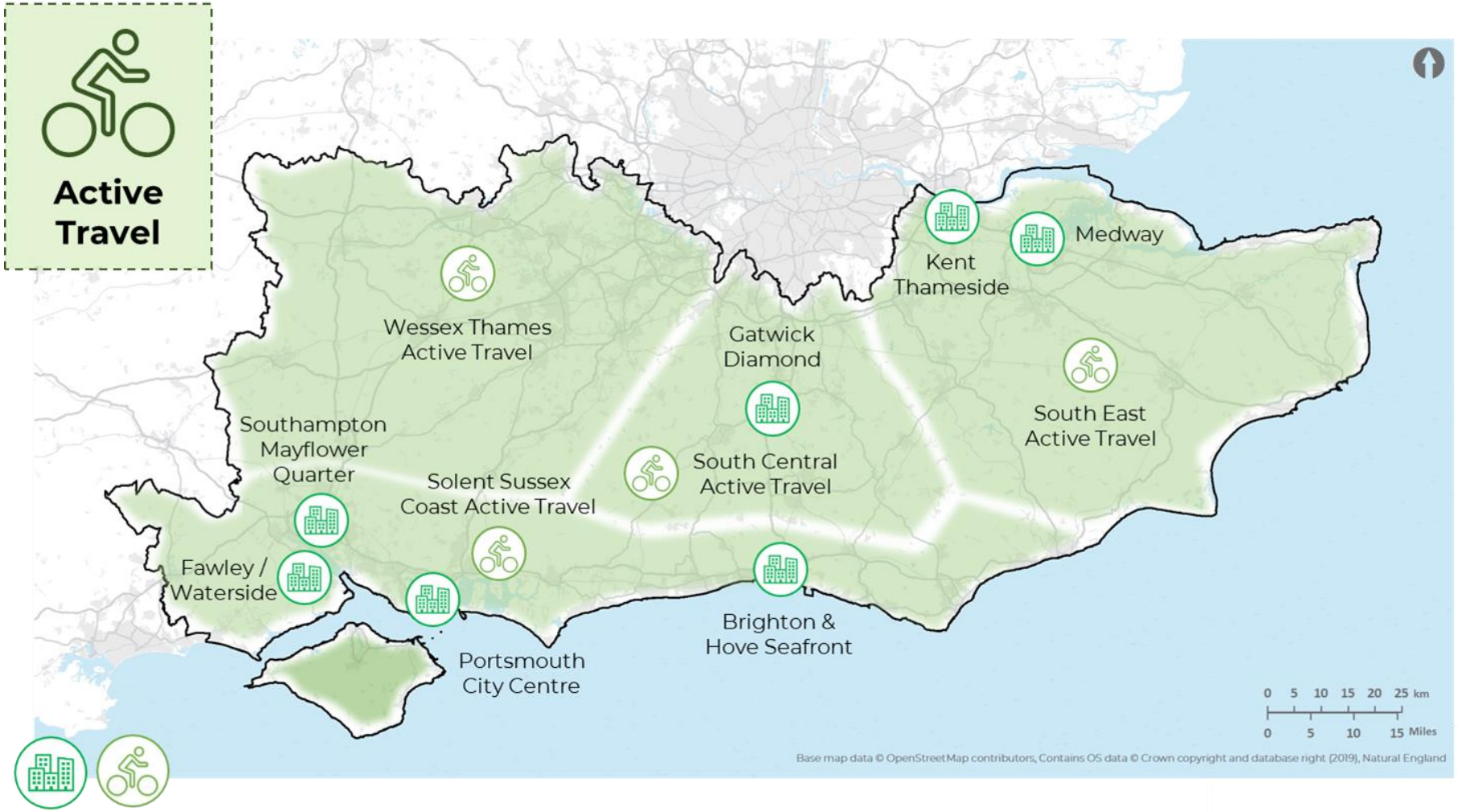
Area Study Interventions (1)



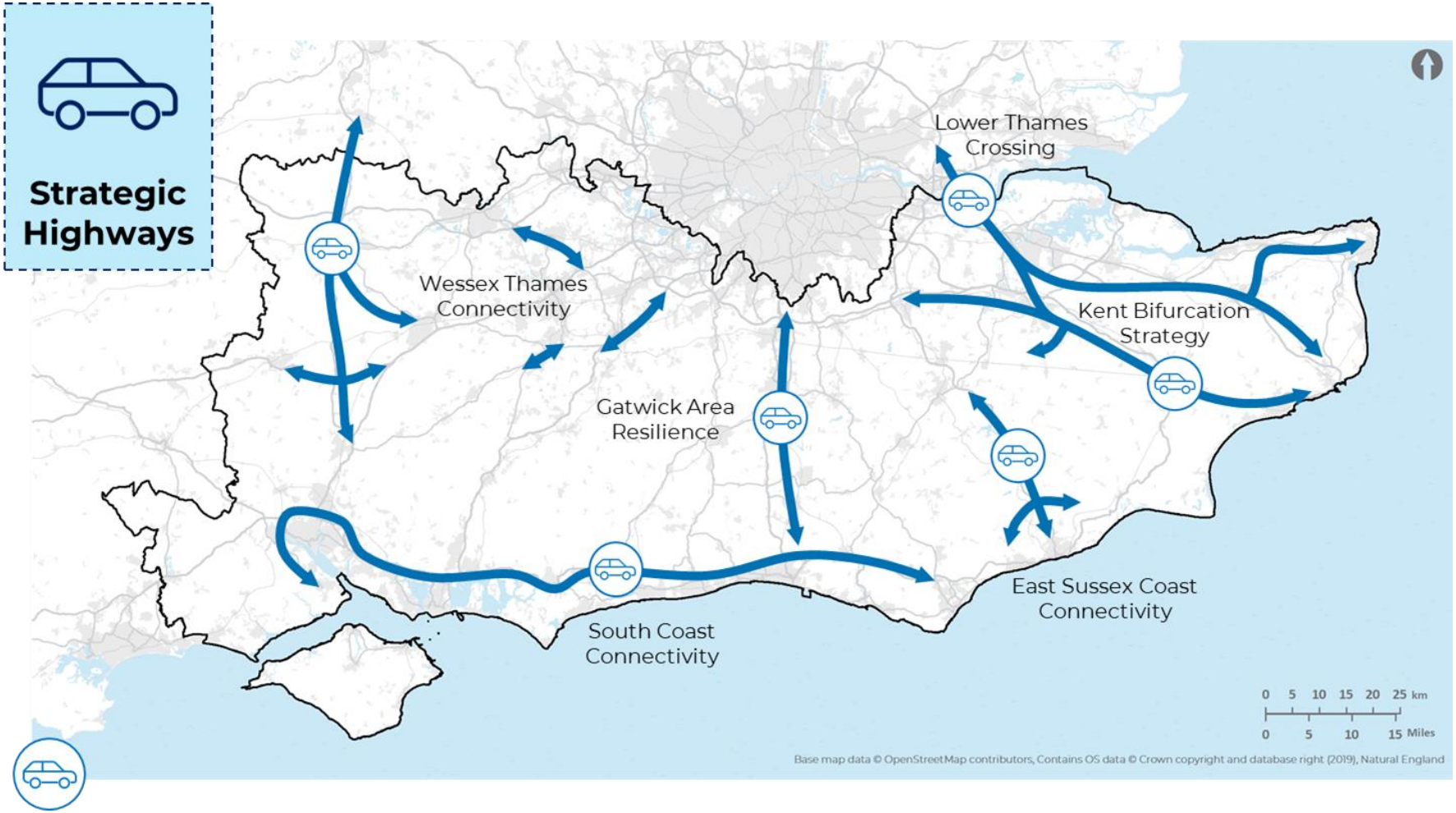
Area Study Interventions (2)



Area Study interventions (3)



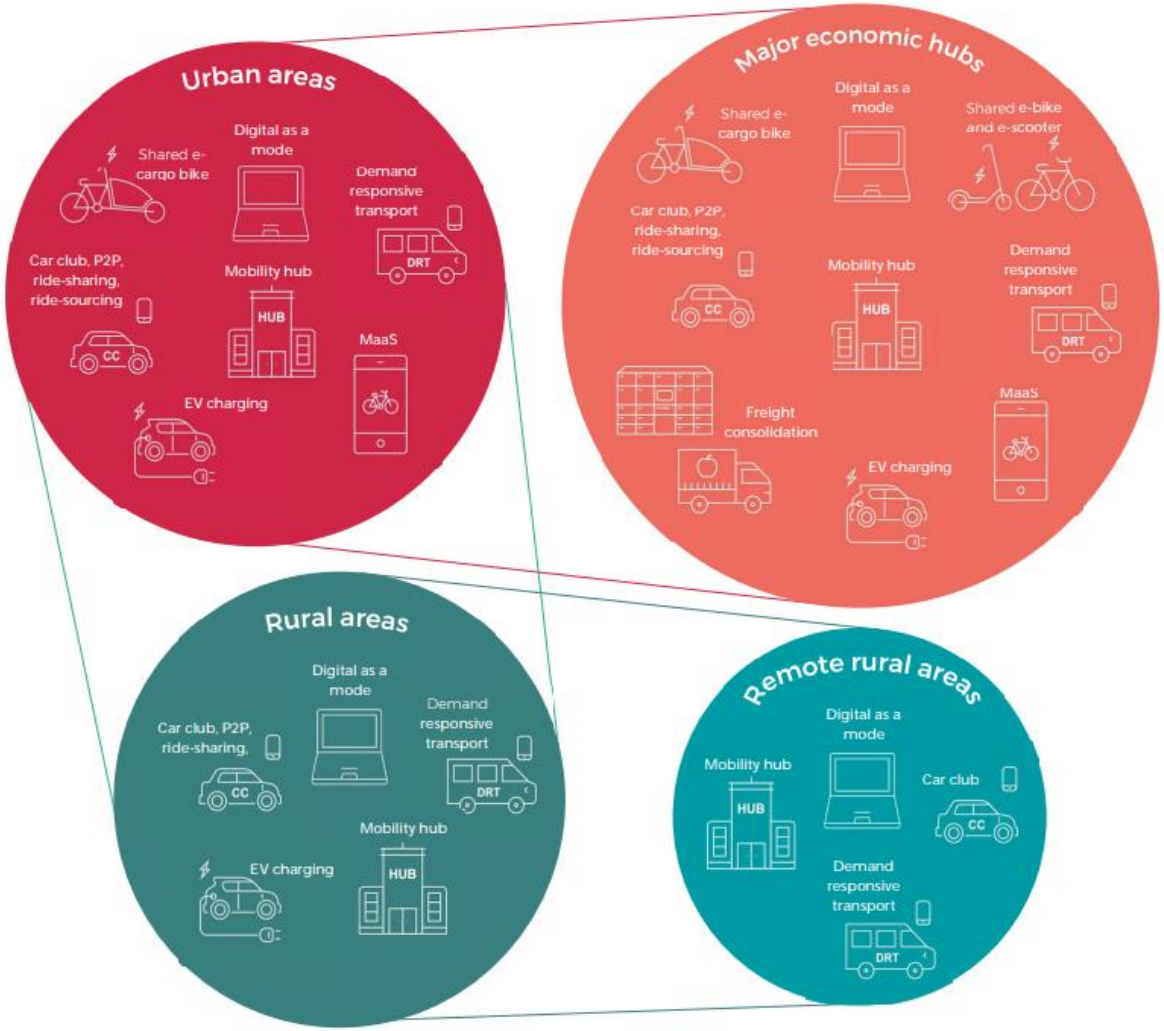
Area Study Interventions (4)



Freight Interventions

Strategic Objectives	A. Improve Perceptions of the Industry	B. Reduce Trip Demand	C. Re-mode to Cleaner Alternatives	D. Retime Activity to Outside of Peaks	E. Increase Public Sector Understanding of the Industry	F. Enhance Infrastructure and Connectivity	G. Accelerate Decarbonisation	H. Sharing Industry Best Practice	I. Increase Provision of Logistics Land and Property	J. Better Local Freight and Logistics Planning	K. Develop Future Freight Foresight	L. Improve Operational Efficiency and Safety	M. Enhance Industry Workforce Capability	N. Increase Clarity of Roles and Influence of Public Sector Organisations
1. To improve the capacity and efficiency of the operation of the freight and logistics sector in the Transport for the South East area		✓	✓	✓✓		✓	✓	✓✓	✓✓		✓✓	✓		✓✓
2. To enhance the contribution of the freight and logistics sector as an important industrial sector and employer in the Transport for the South East area	✓✓				✓✓			✓					✓✓	
3. To improve connectivity to the international gateways in the Transport for the South East area (and for serving the UK)		✓				✓✓	✓		✓	✓		✓		
4. To improve the safety of the freight sector through reductions in the number of accidents involving goods vehicles, particularly with vulnerable road users		✓		✓				✓		✓		✓✓	✓	
5. To better integrate freight into place-making activity	✓	✓	✓		✓		✓			✓	✓			✓
6. To reduce the impact of freight and logistics operations on the environment through a reduction in air pollution and greenhouse gas emissions from the sector to achieve net-zero by 2050 at the latest		✓✓	✓✓	✓		✓	✓✓	✓		✓	✓			
7. To reduce the impact of freight on communities through reductions in noise levels, air quality impacts and informal overnight lorry parking.	✓	✓	✓	✓			✓			✓✓	✓			✓

Future Mobility Interventions



B Appendix B

Package Alignment

Outer Orbital Area Study

Problem Statement	1a South Hampshire Rail (Core)	1b South Hampshire Rail (Enhanced)	2 South Hampshire Mass Transit	3a South Hampshire Active Travel	3b Portsmouth ULEZ	4 Sussex Coast Rail	5 Sussex Coast Mass Transit	6a Sussex Coast Active Travel	6b Brighton & Hove ULEZ	7 Strategic Highways	All Packages
Decarbonisation	✓	✓	✓✓✓	✓✓	✓✓	✓	✓✓✓	✓✓✓	✓✓		✓✓✓
Climate resilience	✓	✓✓	✓	✓	✓	✓✓	✓	✓	✓	✓✓	✓✓
Freight reliance on highways	✓✓	✓✓✓		✓	✓✓✓	✓✓			✓		✓✓✓
Socioeconomic outcomes	✓✓	✓✓✓	✓✓			✓	✓✓	✓✓		✓✓✓	✓✓✓
Housing (need plan planning)	✓✓	✓✓✓	✓✓			✓	✓✓	✓✓		✓✓✓	✓✓✓
New mobility technologies	✓	✓	✓	✓✓		✓	✓	✓	✓✓		✓✓
Coastal connectivity	✓✓	✓✓	✓✓✓	✓✓		✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓✓
Island and peninsulas	✓✓	✓✓✓	✓✓	✓		✓✓	✓✓	✓✓	✓	✓✓	✓✓✓
Rural connectivity	✓	✓	✓✓			✓	✓✓	✓✓		✓	✓✓
Accessibility	✓✓	✓✓✓	✓✓	✓✓		✓✓	✓✓	✓✓	✓✓	✓	✓✓✓
Affordability	✓	✓	✓	✓✓		✓	✓	✓	✓✓		✓✓
Cycle participation	✓	✓	✓	✓✓✓	✓✓✓	✓	✓	✓	✓✓✓	✓	✓✓✓
Mass Transit	✓✓✓	✓✓✓	✓✓✓	✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓✓✓
Strategic Mobility Hubs	✓✓	✓✓	✓✓✓	✓	✓✓	✓✓	✓✓✓	✓✓✓	✓	✓✓	✓✓✓
Integration and information	✓	✓	✓			✓	✓	✓			✓
East west highway connectivity	✓	✓	✓			✓	✓	✓		✓✓✓	✓✓✓
Environmental impact	✓	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
Social impact	✓	✓	✓✓	✓✓✓	✓✓✓	✓	✓✓	✓✓	✓✓✓	✓✓	✓✓✓
Port access	✓✓	✓✓✓	✓			✓	✓✓	✓✓		✓✓✓	✓✓✓
Level crossings	✓✓✓	✓✓✓				✓✓✓				✓✓✓	✓✓✓
East west connectivity	✓✓	✓✓✓	✓			✓✓✓	✓	✓			✓✓✓
Capacity	✓✓	✓✓✓	✓			✓✓✓	✓	✓			✓✓✓
Marshlink						✓✓✓	✓	✓		✓	✓✓✓

Inner Orbital Area Study

Problem Statement	Heathrow Rail	Western Rail Arc	Eastern Rail Arc	MRT West	MRT East	Active Travel West	Active Travel East	Strategic Highways West	Strategic Highways East	All Packages
Decarbonisation	✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓		✓✓✓
Climate resilience	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓	✓	✓✓
Economic Disparity	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓✓	✓✓	✓✓✓
Housing affordability	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓	✓✓	✓✓	✓✓✓
Land use and transport interaction	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓	✓✓	✓✓	✓✓✓
Covid-19	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓					✓✓✓
Rail journey times	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓	✓	✓	✓	✓✓✓
Level crossings	✓✓	✓✓✓	✓✓✓						✓	✓✓✓
Connectivity to Gatwick		✓✓	✓✓	✓✓	✓✓					✓✓
Connectivity to Heathrow	✓✓✓	✓✓✓	✓	✓✓✓				✓✓		✓✓✓
Freight reliance on highways	✓✓	✓✓	✓✓							✓✓
Prioritisation of radial	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓			✓✓✓	✓✓✓	✓✓✓
Cycling	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓✓✓
Urban Highway Congestions	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓	✓✓✓
Strategic local trips	✓	✓	✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓✓
Bus is uncompetitive	✓	✓	✓	✓✓✓	✓✓✓	✓	✓	✓		✓✓✓
Strategic Mobility Hubs		✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
M25 South West Quadrant	✓✓	✓✓	✓✓	✓✓		✓	✓	✓✓✓		✓✓✓
Lower Thames Crossing			✓		✓		✓		✓	✓

South Central Radial Area Study

Problem Statement	1a Rail (Core)	1b Rail (Reinstatements)	2 Mass Transit	3 Active Travel	4 Highways	All Packages
Decarbonisation	✓✓	✓✓	✓✓✓	✓✓		✓✓✓
Climate resilience	✓✓✓	✓✓✓	✓✓✓	✓✓		✓✓✓
Freight reliance on highways	✓✓	✓				✓✓
Housing (need plan planning)	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓
Economic growth	✓✓✓	✓✓	✓✓✓	✓	✓✓✓	✓✓✓
Rural communities	✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
Accessibility	✓	✓✓	✓✓	✓		✓✓
Cycle network gaps				✓✓✓		✓✓✓
Active travel mode share				✓✓✓		✓✓✓
Mass Transit gaps			✓✓✓		✓	✓✓✓
Interurban public transport gaps		✓✓✓	✓✓✓		✓	✓✓✓
Information and ticketing	✓	✓				✓
Fare complexity and cost	✓	✓				✓
Rail network resilience	✓✓✓					✓✓✓
Rail network capacity	✓✓✓	✓✓✓				✓✓✓
Rail network connectivity	✓✓✓	✓✓✓				✓✓✓
Highway congestion/air quality hot spots	✓	✓	✓		✓✓✓	✓✓✓
Highway capacity for growth			✓		✓✓✓	✓✓✓

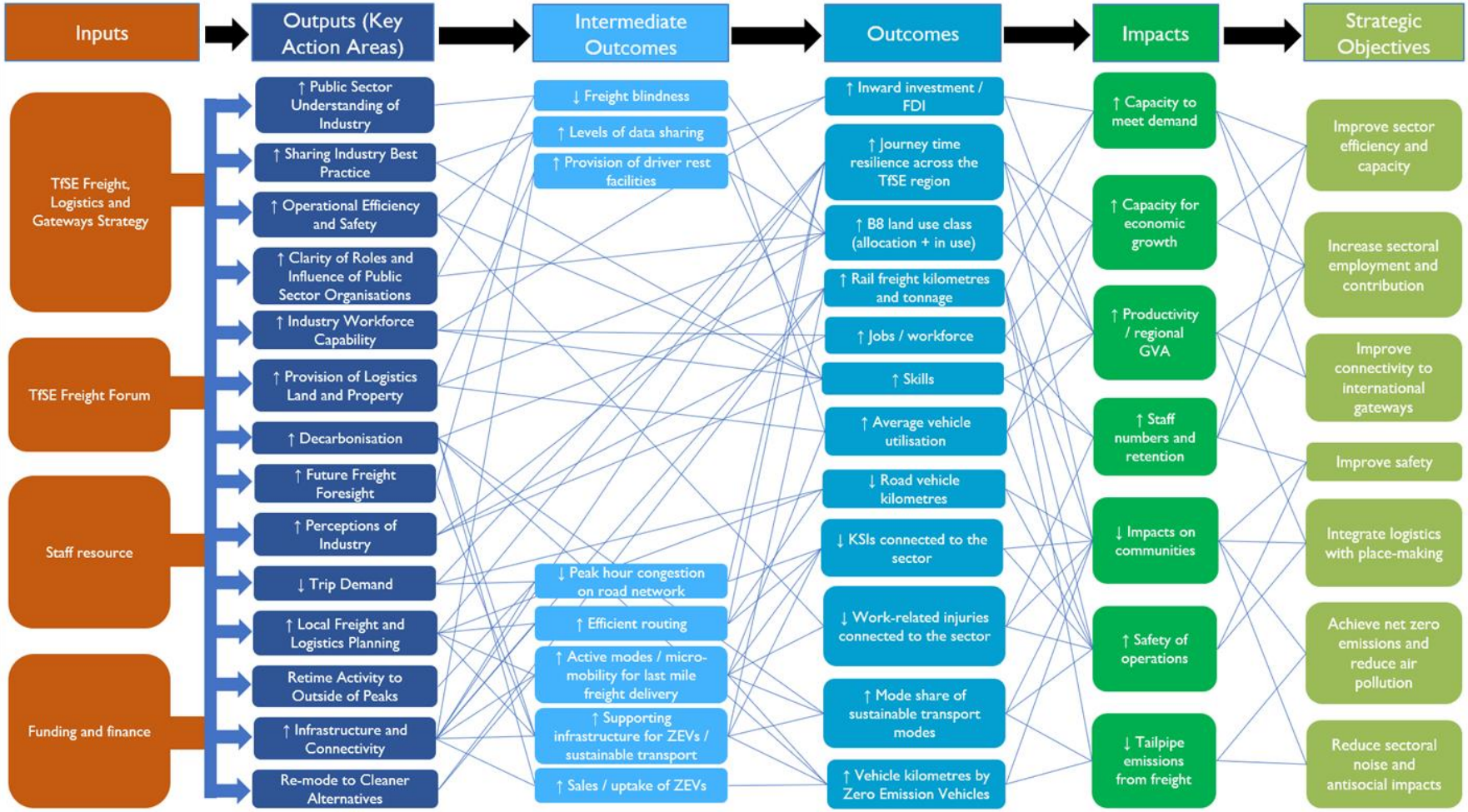
South West Radial Area Study

Problem Statement	Strategic Rail	Out of Region Rail	Rail Freight	Isle of Wight	Mass Rapid Transit and Mobility	Strategic Highways	Combined Packages
Decarbonisation	✓✓	✓✓	✓✓	✓✓	✓✓✓	✓	✓✓✓
Climate resilience	✓	✓✓	✓	✓✓	✓	✓✓	✓✓
Socioeconomic outcomes	✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓
Housing (need plan planning)	✓✓✓	✓	✓			✓	✓✓✓
Covid-19	✓✓✓	✓✓✓	✓	✓	✓	✓	✓✓✓
Bus is uncompetitive				✓✓✓	✓✓✓		✓✓✓
Strategic local trips	✓✓✓	✓		✓✓	✓✓	✓	✓✓✓
Out of region connectivity		✓✓✓				✓	✓✓✓
Isle of Wight congestion				✓✓✓			✓✓✓
Isle of Wight connectivity				✓✓✓			✓✓✓
Isle of Wight accessibility				✓✓✓			✓✓✓
Access to Solent Ports	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓	✓✓✓
M25 South West Quadrant	✓✓		✓✓	✓	✓		✓✓
Low active mode participation				✓✓✓	✓✓		✓✓✓
Rail freight	✓	✓	✓			✓	✓✓✓
Portsmouth Direct Line speed	✓✓✓					✓	✓✓✓
SWML Capacity constraint	✓✓✓	✓	✓✓		✓	✓	✓✓✓
Rail connectivity between hubs	✓✓✓	✓	✓✓			✓	✓✓✓
Radial connectivity to Heathrow	✓	✓	✓				✓

South East Radial Area Study

Problem Statement	1a Rail (Classic)	1b & 1c Rail (High Speed)	2 Mass Transit	3 Placemaking	4 Highways	All Packages
Decarbonisation	✓✓	✓✓	✓✓✓	✓✓		✓✓✓
Climate resilience	✓✓✓	✓✓✓	✓✓✓	✓✓		✓✓✓
Freight reliance on highways	✓✓	✓				✓✓
Housing (need plan planning)	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓
New technologies and equity	✓	✓	✓✓	✓✓✓	✓✓	✓✓✓
Connectivity to rest of UK	✓	✓✓✓	✓		✓✓✓	✓✓✓
Economic (over)-reliance on London	✓✓	✓✓✓	✓		✓✓	✓✓✓
Relatively weak productivity	✓✓	✓✓	✓✓		✓✓	✓✓
Poor coastal connectivity	✓	✓✓✓	✓✓			✓✓✓
Poor rural connectivity	✓		✓✓		✓✓	✓✓
Highly constrained space at Dover	✓				✓✓	✓✓
Channel ports (over)-reliance on one corridor	✓✓	✓✓	✓		✓✓✓	✓✓✓
Impact of port disruption on wider area	✓	✓	✓		✓✓✓	✓✓✓
Highway congestion, safety, and air quality issues	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓
Relatively slow rail services	✓✓	✓✓✓				✓✓✓
Rail resilience challenges	✓✓✓	✓✓✓				✓✓✓
Rail capacity challenges	✓✓✓	✓✓✓				✓✓✓
Variable/poor mass transit provision	✓✓	✓✓	✓✓✓	✓✓		✓✓✓
Weak public transport integration	✓✓✓	✓✓✓	✓✓✓			✓✓✓
High and complex public transport fares			✓			✓
Variable accessibility of public transport	✓	✓✓	✓✓✓	✓	✓	✓✓✓
Relatively low cycling participation				✓✓✓	✓	✓✓✓
Variable/poor active travel infrastructure				✓✓✓	✓	✓✓✓

Freight, Logistics, and International Gateways Strategy



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