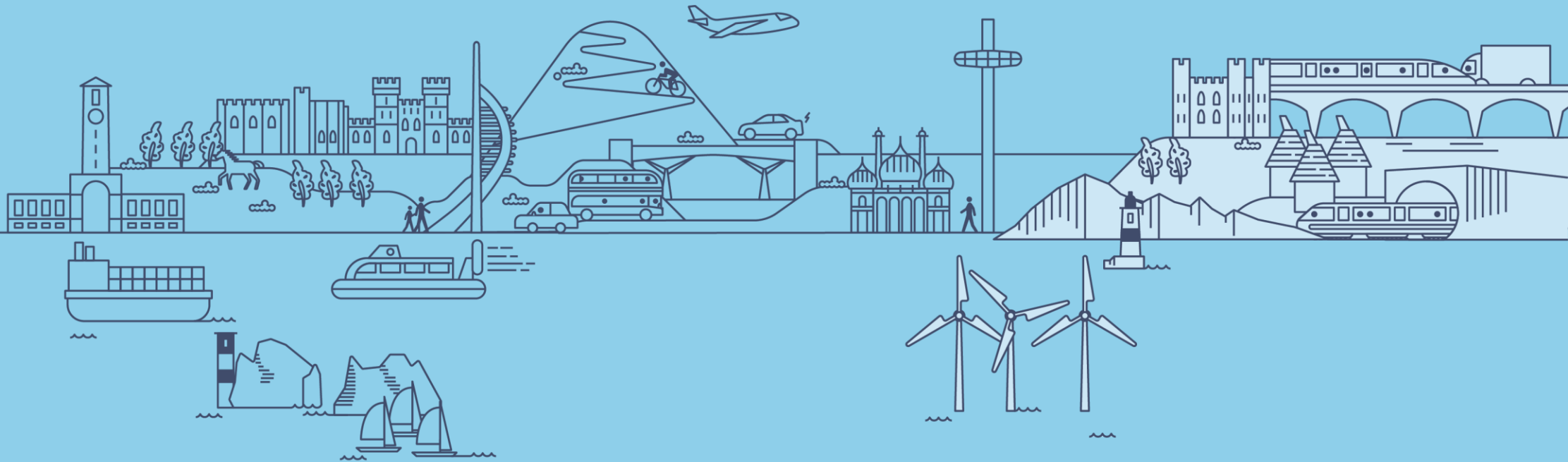


Kent, Medway and East Sussex Strategic Programme Outline Case

Version 2.7
March 2023



Part 1

Introduction

Background

Transport for the South East (TfSE) developed a Transport Strategy which was adopted in 2020. They are currently delivering a programme of Strategic Studies that will prioritise interventions to deliver TfSE’s vision for the South East. This is a key step towards developing a Strategic Investment Plan to secure funding for the South East’s transport network.

Geographic Scope

The Strategic Studies focus on the key transport corridors that serve and connect the South East’s Major Economic Hubs and international gateways. They also play an important national role in connecting the rest of the UK to some of the busiest ports in the country. The map overleaf in **Figure 1.1** shows the areas covered by each SPOC.

The areas are defined as follows:

- **Solent and Sussex Coast** – encompassing the strategic corridors that serve and connect the two largest conurbations in the South East, covering an area from the New Forest in Hampshire to Hastings in East Sussex.
- **South Central** – 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** – encompassing the transport corridors connecting the Channel Tunnel and Port of Dover to London, as well as serving Kent, Medway, and East Sussex.
- **Wessex Thames** – encompassing the strategic corridors and Major Economic Hubs in Berkshire, North Hampshire, and West Surrey.

Through development of the evidence base for each study; option identification; and option assessment, the emerging packages of shortlisted intervention were more coherent when assessed and described at a place based level, rather than describing orbital components of a package in one study and radial components in another. Whilst there is no ‘perfect’ geography, a more place-based approach has been endorsed for the Strategic Programme Outline Case, reducing the levels of geographical overlap.

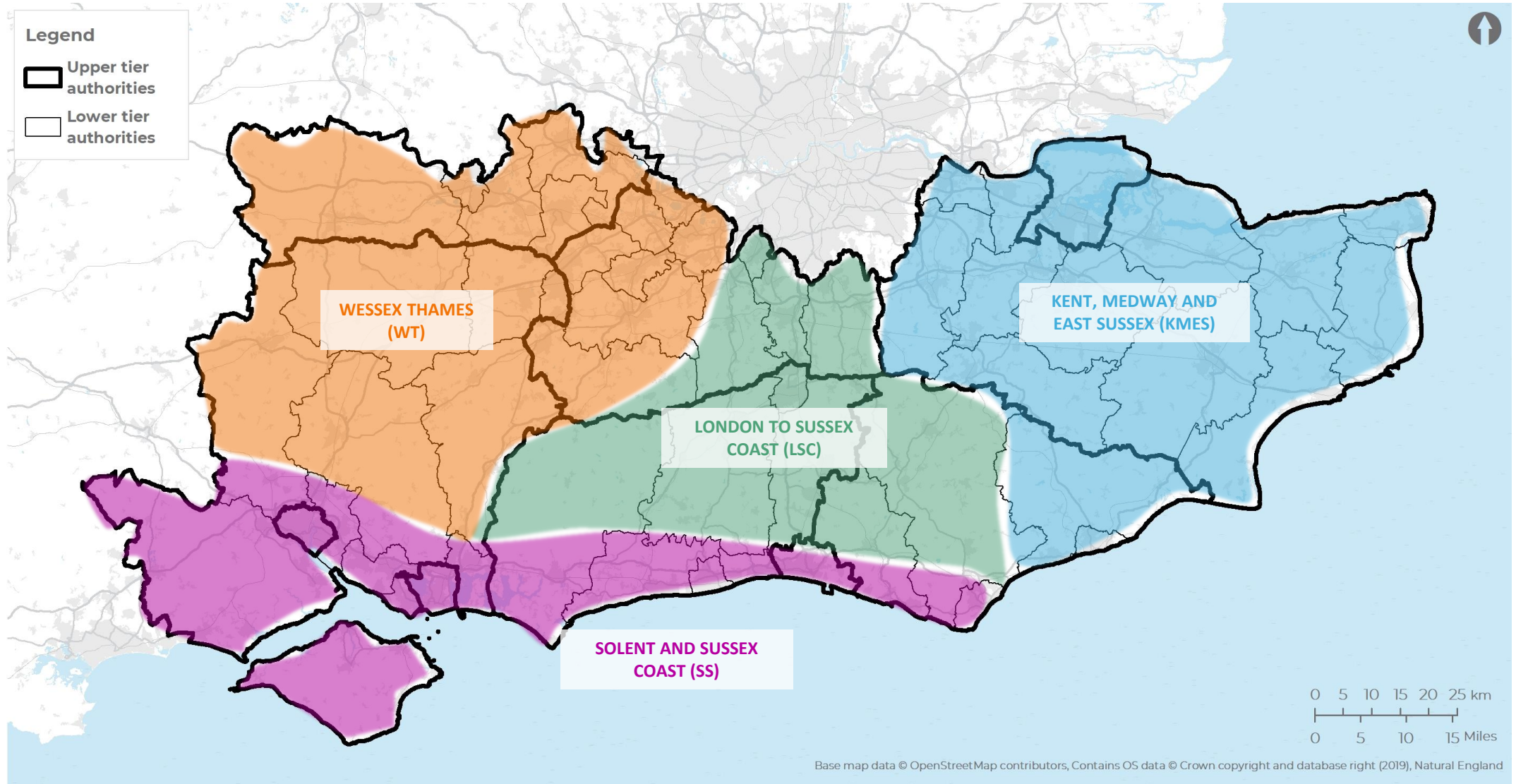
Changes in Geographic Scope

The geographical scope of the technical programme of work underpinning this study is slightly different in Stage D compared to Stages B and C. In summary

- The **Outer Orbital Area Study** has become the **Solent and Sussex Coast Study**. The Isle of Wight (IoW) is now within the scope of this study, whereas East Kent is no longer in scope.
- The **Inner Orbital Area Study** has been merged with the **South West Radial Area Study** to create the **Wessex Thames Study**. The Upper Tier Authorities are largely the same as for the South West Radial Area Study (minus Kent and IoW).
- The **South Central Radial Area Study** has remained the same area, but been renamed the **London to Sussex Coast Study**, but Kent is no longer in scope.
- The **South East Area Study** remains unchanged in geographical scope, but has been renamed **Kent, Medway and East Sussex Study**.

Geographic scope of the four SPOC Areas

Figure 1.1: Geography of Area Study programme's four Strategic Programme Outline Cases



Technical Scope and Structure

Technical Scope

This document is the **Strategic Programme Outline Case (SPOC)** for **Kent, Medway and East Sussex**. The business case set out in this document is for a programme of interventions which has been developed to a level of detail aligned with a conventional ‘single-scheme’ Strategic Outline Case or pre-Strategic Outline Business Case. For this reason it has been given the description of Strategic Programme Outline Case (SPOC).

This document sets out the key issues, challenges and opportunities relevant to their scope, and show how targeted interventions will enable TfSE and its partners to deliver TfSE’s Transport Strategy for the South East. It describes how the Project Team has worked with stakeholders to develop Packages of Interventions that are designed to make life better for people, for businesses and, for the environment of the South East.

The Strategic Programme Outline Case has been developed in line with business case guidance set out in HM Treasury’s Green Book and Department for Transport Projects Analysis Guidance (TAG). The level of detail provided is proportionate to the current stage of programme and scheme development. The strategic dimension is at a particularly well progressed stage, with the other four dimensions being at earlier stages of development. Further detail on how this document aligns with TAG requirements is provided in a check list at the beginning of each chapter.

The outcome of these Area Studies will form the ‘blueprint’ for TfSE’s Strategic Investment Plan. This will influence and help shape investment decisions by government and national bodies, such as Network Rail and National Highways, and local bodies, including Local Transport Authorities.

Structure and Contents

The rest of this report follows the Five Case Model for Business Cases:

- **The strategic dimension (Part 2)** sets out the evidence and need for intervention and objectives. This shows clear alignment with the Transport Strategy and vision for the area.
- **The economic dimension (Part 3)** outlines the impacts of the SPOC Packages of Interventions and describes the overall costs and benefits of the whole programme.
- **The financial dimension (Part 4)** presents the funding requirement for the delivery of the programmes, their affordability and funding sources.
- **The commercial dimension (Part 5)** describes the commercial viability of the Packages of Interventions and outlines the procurement options to ensure good value for money in their delivery.
- **The management dimension (Part 6)** sets out the considerations for the effective delivery of the Packages of Interventions, including governance and risk management.

Process

This Strategic Programme Outline Case is a key deliverable for the Kent, Medway and East Sussex Technical Programme of work. **Figure 1.2** below shows the stages and steps that are being delivered as part of this programme of work to date.

The programme comprises five Stages, which in turn are formed of twelve steps.

The first stage, **Stage A (Mobilisation)**, was completed in September 2020. This stage helped define the leadership team, partners, Subject Matter Experts, methodology and a Delivery Plan for the technical programme.

This led onto **Stage B (Evidence Base)**, which undertook an in-depth review of the current and future issues and opportunities in Kent, Medway and East Sussex. This covered a wide range of economic, social and environmental issues and opportunities.

Stage B also identified corridor specific transport issues and defined the study’s Vision, Objectives, and Problem Statements. The findings of Stage B have been published on the TfSE website alongside this report.

An **Options Assessment Report (OAR)** was then prepared, which describes how a Long List of intervention options was prioritised to develop Packages of Interventions for the Kent, Medway and East Sussex area.

This SPOC is a key deliverable of **Stage D**, which will also deliver a **Delivery Plan**.

Stage E (Integrated Sustainability Appraisal), which runs concurrently with all stages, will seek to ensure objectives, problem statements and interventions can be achieved through sustainable measures.

Figure 1.3 overleaf shows the relationship between the SPOC and its partners SPOCs for different geographies, as well as their relationship to the underpinning evidence bases and Options and Assessment Reports, and how the feed into the Strategic Investment Plan.

Figure 1.2: Overview of the Kent, Medway and East Sussex Technical Programme

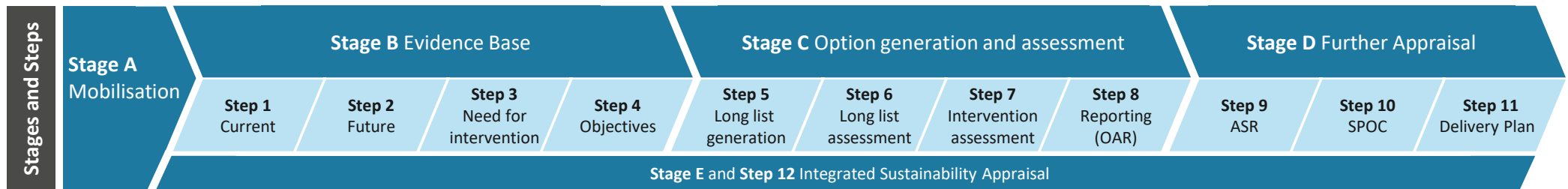
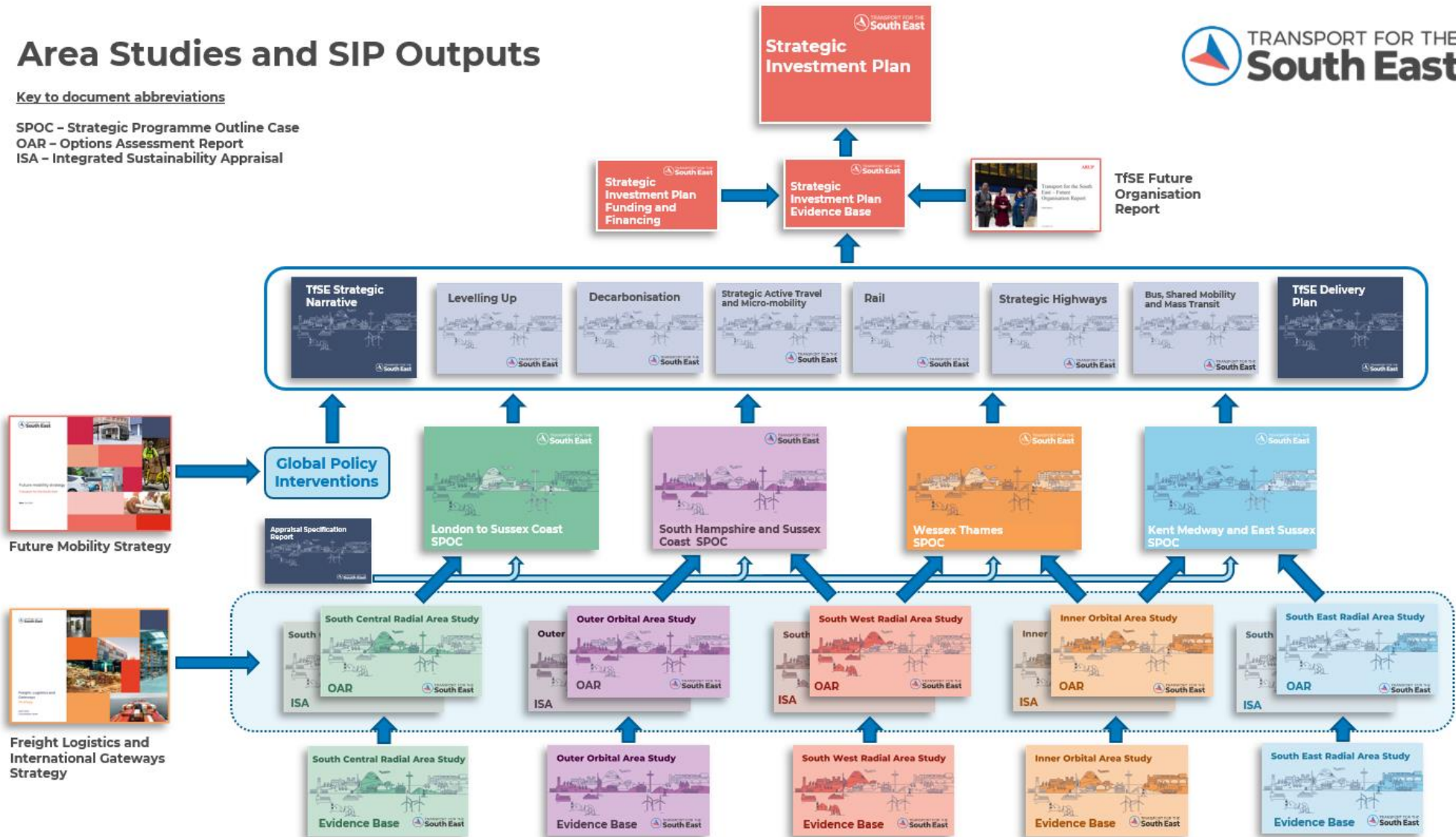


Figure 1.3: shows the relationship between the SPOC and its partners SPOCs for different geographies, as well as their relationship to the underpinning evidence bases and Options and Assessment Reports, and how the feed into the Strategic Investment Plan

Area Studies and SIP Outputs

Key to document abbreviations

SPOC – Strategic Programme Outline Case
 OAR – Options Assessment Report
 ISA – Integrated Sustainability Appraisal



Key Actors in this Study

Project Team

The Kent, Medway and East Sussex technical programme is led by a TfSE Project Management Office and is supported by a Technical Advisor Team.

The Technical Advisor Team is led by **Steer**, who led the development of the Evidence Base (Stage B of this project).

Steer is supported by:

- **Atkins**, who led the Options Stages of the project (Stage C); and
- **WSP**, who provide significant support to the Delivery (Stage D) and Integrated Sustainability Appraisal (Stage E) stages.

Most of the technical work and content delivered for the SPOC was developed by WSP and Steer. Atkins has supported this work through developing the Multi Criteria Assessment Framework (MCAF) that was used to qualitatively assess proposed interventions.

For the purposes of this report, TfSE's Project Management Office and the Steer/Atkins/WSP Technical Advisor Team are referred to as the 'Project Team'.

Stakeholders

On the mobilisation of this study, TfSE and the Technical Advisor team undertook a stakeholder mapping exercise for Kent, Medway and East Sussex to categorise key organisations and individuals according to their interest and influence.

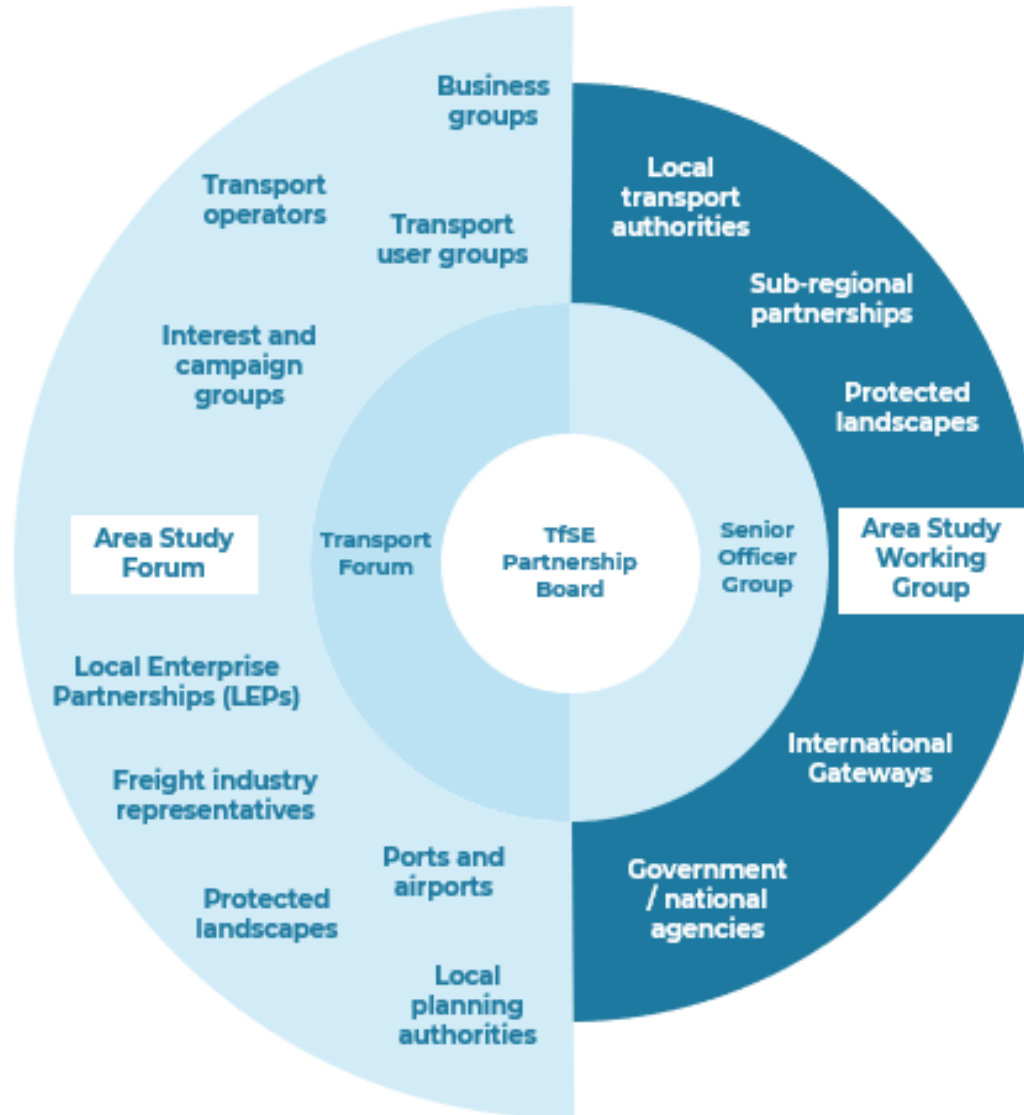
- **Tier 1 Stakeholders** have a direct interest and involvement in leading and supporting investment in Kent, Medway and East Sussex. These stakeholders include Local Transport Authorities (County Councils and Unitary Authorities), National Highways, Network Rail, a representative from a Local Enterprise Partnership, and the South Downs National Park.
- **Tier 2 Stakeholders** potentially have a direct influence over the success of the Area Studies via their development process or contents of the studies. This group includes Local Planning Authorities (Districts and Boroughs) operators, International Gateways, other statutory bodies (e.g. Homes England and Environmental/Heritage bodies), and special interest groups such as environmental groups.
- **Tier 3 Stakeholders** are those parties that may influence Tier 1 and 2 Stakeholders through their activities, including through the media/social media and public affairs. These include Town and Parish Councils, residents' groups, education and health providers, and representatives from youth councils.
- **Tier 4 Stakeholders** are any other stakeholders who have limited interest and/or influence in this work and will therefore not be directly engaged in the Area Study programme.

Most Tier 1 stakeholders at an "officer-level" have been engaged, among other channels, through an **Area Study Working Group** to help steer the direction and content of each study. The membership of this group is shown in **Figure 1.4** overleaf.

Most Tier 2 stakeholders at an "officer-level" have been engaged, among other channels, through an **Area Study Forum**, to provide input and "check and challenge". The membership of the forum is shown in **Figure 1.5** overleaf.

Stakeholder Engagement

Figure 1.4: Kent, Medway and East Sussex - Area Study Working Group membership



The role of the Working Group is to provide technical leadership to the Area Study, to drive the area study and make key decisions to allow the study to progress to schedule.

The group will provide professional, technical and strategic insight to TfSE and the consultants commissioned to develop the study.

Area Study Working Group

Local transport authorities

Kent County Council
Medway Council
East Sussex County Council

Protected landscapes

South Downs National Park Authority

International Gateways

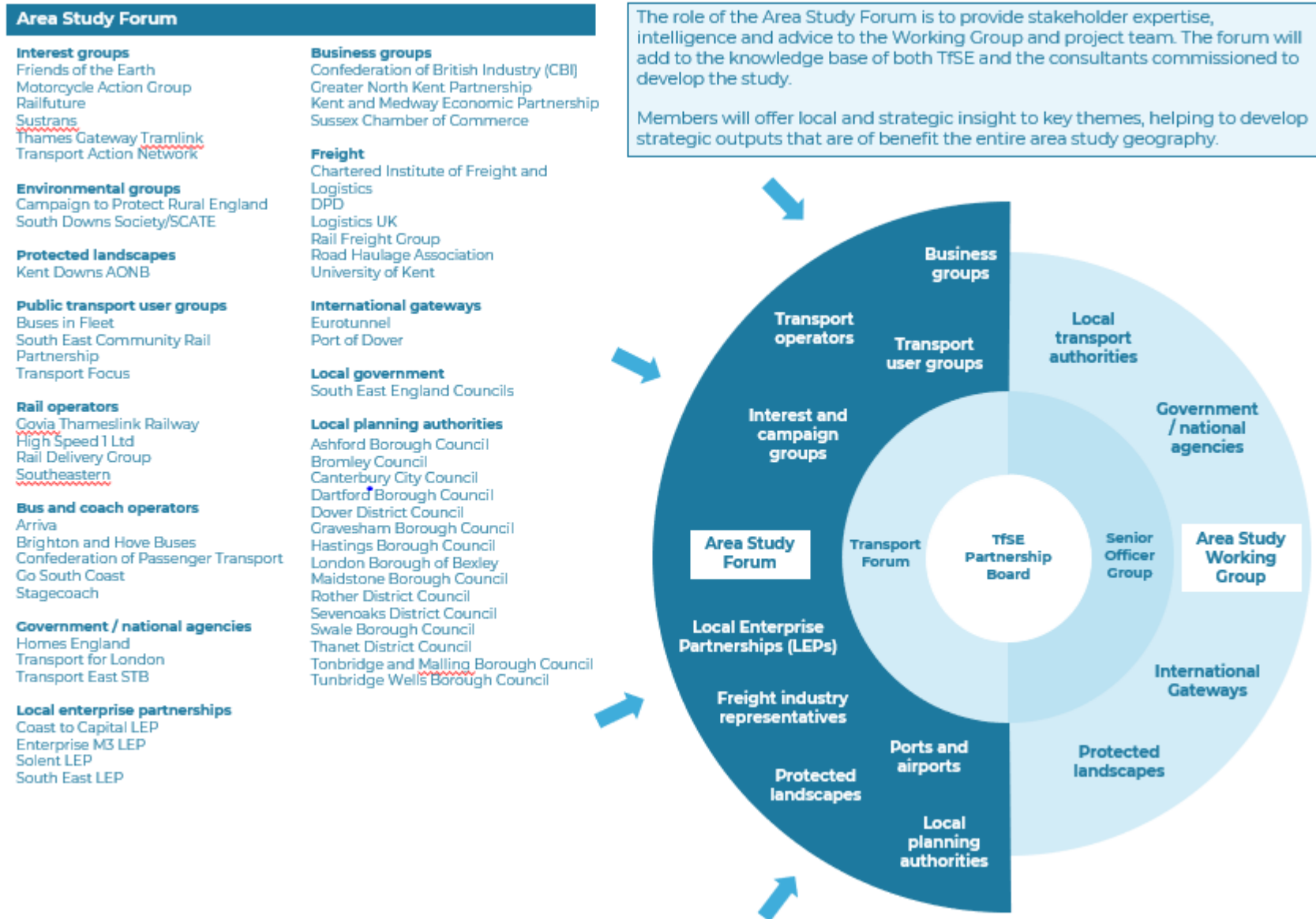
Port of Dover

Government / national agencies

Department for Transport
Network Rail
National Highways

Stakeholder Engagement

Figure 1.5: Kent, Medway and East Sussex - Area Study Forum membership



Stakeholder Engagement

Tier 1 Stakeholders

Most Tier 1 Stakeholders were invited to join this study's Area Study Working Group (see Figure 1.4) and play a direct role in leading and shaping the study.

These stakeholders have helped TfSE develop the Vision, Objectives, and Problem Statements for the study.

These stakeholders provided significant input into the development of the long list of interventions that were assessed using the MCAF and have moderated the initial results from the MCAF long list assessment.

They also supported the strategic assessment of each intervention and advised on the extent to which each long listed intervention aligns with their organisation's priorities.

Tier 2 Stakeholders

Further (remaining) Tier 1 Stakeholders and all Tier 2 Stakeholders were invited to join a Stakeholder Forum (see Figure 1.5).

This Forum has met three times:

The first workshop focussed on identifying stakeholder aspirations for the studies and understanding their perceptions of the strengths, weaknesses, opportunities, and challenges of the area.

The second workshop focussed on validating/amending the Vision, Objectives, and Problem statements developed by the Area Study Working Group. It also provided these stakeholders with an opportunity to contribute to the long list of interventions.

A third workshop focussed on validating packages and delivery.

Members of Parliament (MPs)

MPs have been further engaged through a bespoke process led by TfSE.

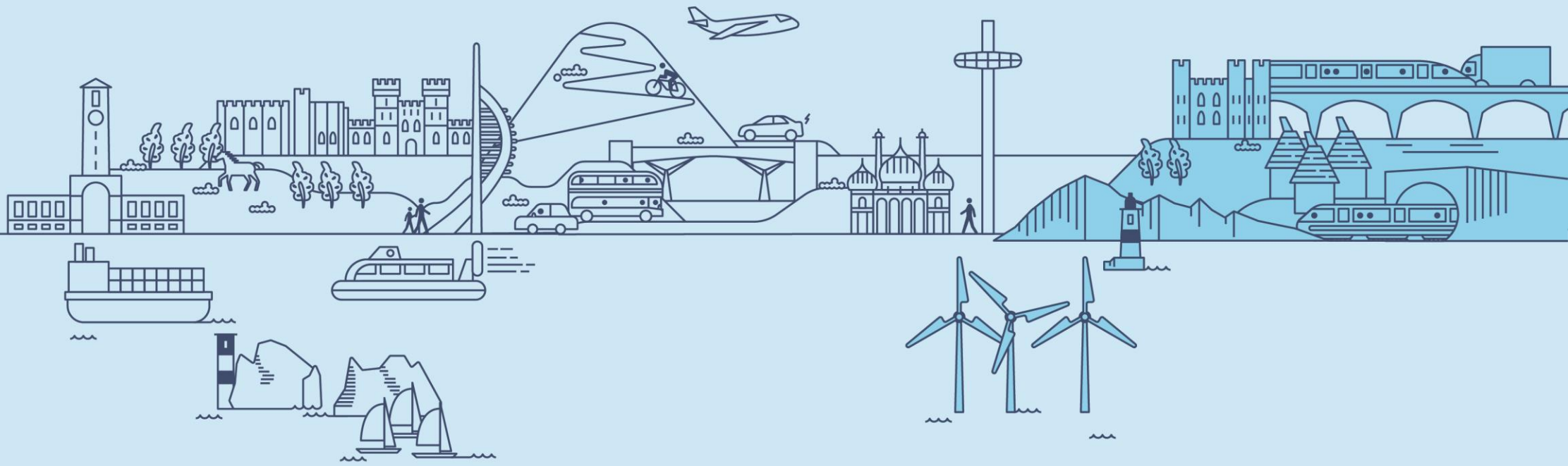
This process has engaged MPs on the Area Studies at two stages. Firstly, a questionnaire was sent to all MPs within the TfSE Area where they had the chance to identify issues, opportunities and key schemes. Any insights drawn from these discussions (e.g. whether an MP supports or does not support a particular intervention) was incorporated into the policy alignment scores.

In the latter stages of the project MPs have been invited to briefing sessions for each of the SPOC areas, where packages of interventions have been presented and feedback has been invited.

Other Stakeholders

Any other stakeholders were not directly engaged in this part of the study.

Any organisation that subscribes to TfSE's newsletter has received regular updates about study progress. These stakeholders will have had an opportunity to engage with TfSE when the Draft Strategic Investment Plan was published for consultation.



Part 2

Strategic Dimension

Introduction

Overview of the Strategic Case

The Strategic Case makes the case for change in the Kent, Medway and East Sussex Area.

The Strategic Case includes:

- An overview of the SPOC's context and key challenges and opportunities for the SPOC area;
- The Vision, Objectives, and Problem Statements to be addressed by the SPOC;
- Articulation of the case/need for intervention;
- A description of the Interventions developed for the SPOC;
- Commentary on how the Packages were developed and sifted;
- Commentary on how the Packages align with the Vision, Objectives, Problem Statements, and National/Local/Policy alignment; and
- Evidence of local support for each Package of Interventions.

Contents

Part 2b describes the key challenges and opportunities identified for this study.

These include (but are not limited to):

- relatively weak **socioeconomic outcomes** in Kent, Medway and East Sussex Area;
- the 2050 transport **decarbonisation/net-zero challenge**;
- the impact of the **changing trading relationship** between the UK and EU;
- **economic underperformance** in terms of income and unemployment;
- **connectivity challenges** and opportunities; and
- **growth and regeneration** opportunities.

Part 2c outlines Problem Statements this study aims to address:

- **Problem Statements** are also important as they describe the challenges the area faces today that key stakeholders wish to see addressed.

Part 2d describes the impact of doing nothing and the “baseline” for this study.

Part 2e describes the Strategic Vision and Objectives for this study.

Part 2f describes the Packages this study proposes for Kent, Medway and East Sussex.

This includes:

- a description of the **Packages** of Interventions that have been developed for the Kent, Medway and East Sussex Area.

Part 2g shows how the interventions outlined in Part 2f deliver the vision and objectives of the Kent, Medway and East Sussex SPOC.

This includes:

- a description of the inputs, outputs, outcomes, and impacts of the packages - in line with the Theory of Change Framework; and
- commentary showing how the Packages, when combined, deliver the Vision and Objectives of this study, and address the study's Problem Statements.

Alignment with Department for Transport Business Case Guidance

The table below sets out the DfT's requirements for the Strategic Dimension and the level of detail expected at Strategic Outline Case stage. The final column of the table shows where the Strategic Dimension addresses each requirement

TAG Issue	TAG Requirement	Progress at SPOC	Reference
Organisation overview	An outline of the strategic priorities and responsibilities of the organisation(s) responsible for the proposal (for example DfT, Highways England, or the Local Authority)	Complete	Introduction (Background)
Business strategy and wider strategies	Determine the strategic fit of the proposal to the priorities of relevant organisations, the government (for example, the ambition to achieve net zero greenhouse gas emissions by 2050) and the regional, combined and local authorities in scope	Complete	Introduction (Policy Context)
Interdependencies	Set out the strategic portfolios, programmes and projects that the investment may interact with or link to: do they contribute towards achieving the same outcomes? Where does the intervention sit within this hierarchy?	Complete	Part 2a, Part 2b
Existing arrangements and the impact of not changing	Provide a clear picture of the current service model that serves as the baseline from which to measure future improvements. If applicable, set out the geographical scope of the investment and the economic, social and environmental context of the area: what is the impact of not intervening?	Complete	Part 2a, Part 2b
Business needs and service gaps	Determine the organisation's business needs: these are internal and external factors that are needed for the transport intervention to fulfil its objectives	Complete	Part 2a, Part 2b
Problem identification	Describe the problem(s) identified to determine the rationale: what is the evidence base underpinning the problem? Does it justify the need for a transport intervention?	Complete	Part 2a and 2b
SMART spending objectives	Establish SMART objectives for what the investment sets out to achieve: these should be specific, measurable, achievable, relevant and time-constrained. SMART objectives should align to the strategic priorities identified and provide clear measures of success	Complete	Part 2d
Scope	Explain the scope of the intervention: what will it deliver? What is out-of-scope?	Complete	Part 2e
Measures of success and planning for delivery	Set out what constitutes a successful delivery of the SMART spending objectives and determine the delivery arrangements. This can be conducted via workshops as per the HM Treasury business case guidance	Outline	Part 2f
Strategic assessment of investment options	Evaluate the longlist and shortlist of options against the SMART objectives and assess their impact on wider strategic priorities: options that do not contribute to achieving these priorities should be discounted	Outline	OAR
Strategic benefits	Describe, using evidence, the strategic benefits this proposal will provide through achieving the SMART spending objectives. Identify a clear theory of change that provides a comprehensive description of how the transport investment will result in those outcomes and impacts	Outline	Part 2d and 2e
Risks and constraints	Specify the main risks to achieving the SMART objectives: how will risks be mitigated and managed? Outline the constraints that could impact the successful delivery of the proposal including any relevant legislation and legal obligations that the investment engages with	Outline	Financial and management cases
Stakeholders' views and requirements	Outline the main stakeholder groups and their contribution to the development of the proposal, including their views and any conflicts between groups	Outline	Introduction (Stakeholders) Views sought through public consultation Summer 2022

Kent, Medway and East Sussex

Kent, Medway and East Sussex provide England's gateways to Mainland Europe, and Europe's Gateway to the British Isles. It is home to one of the largest and most populous counties in England (Kent) and one of the largest conurbations in the South East (Medway). It has hosted some of the key historical moments in the UK's past – the Battle of Hastings and Battle of Britain. It is well placed to leverage significant opportunities for growth and regeneration in the future.

Profile

The Kent, Medway and East Sussex Area is a diverse and dynamic part of South East England. Its transport network performs a key link between some of the UK's busiest international gateways and the rest of the country. It is home to some of the fastest growing communities in the UK, and some of its most historic towns.

However, there is a risk that some are being left behind as the area's transport network comes under increasing strain, and housing remains unaffordable in places.

Transport Networks

At first glance, the Kent, Medway and East Sussex Area is served by good transport networks.

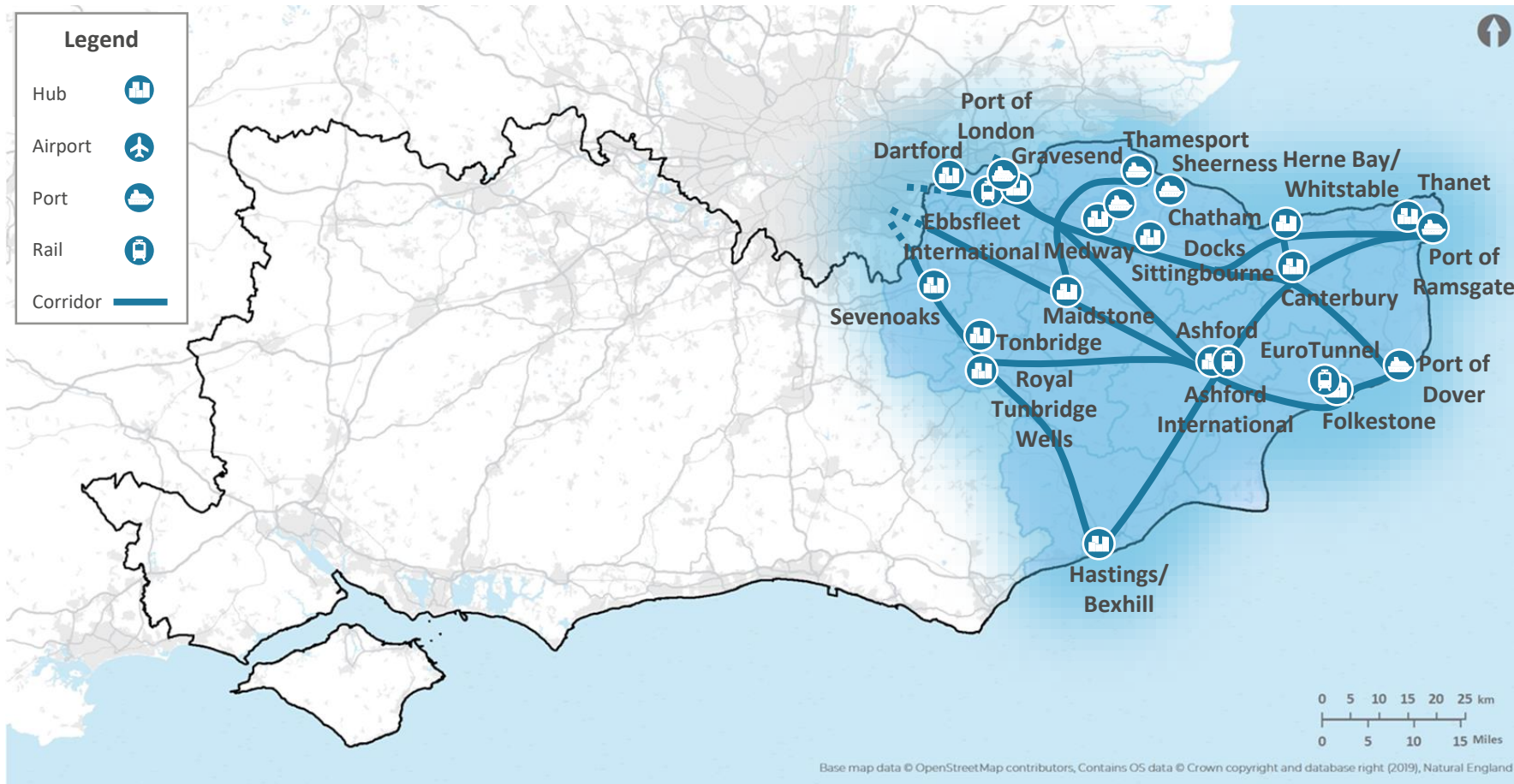
The area is home to the UK's (currently) only High Speed Railway – HS1. It is also served by the South Eastern Main Line, Chatham Main Line, and several secondary and branch railways.

The area is served by two motorway corridors – the M2/A2 and M20/A20 – which both connect the Channel Ports to the M25. These two key corridors are joined together by several Strategic and Major roads. West Kent and East Sussex are also served by the A21 Strategic road.

The Kent, Medway and East Sussex Area is home to several International Gateways. These include the port of Dover, one of the world's busiest maritime passenger ports, the Channel Tunnel terminal at Folkestone, and several ports in North Kent and Medway.

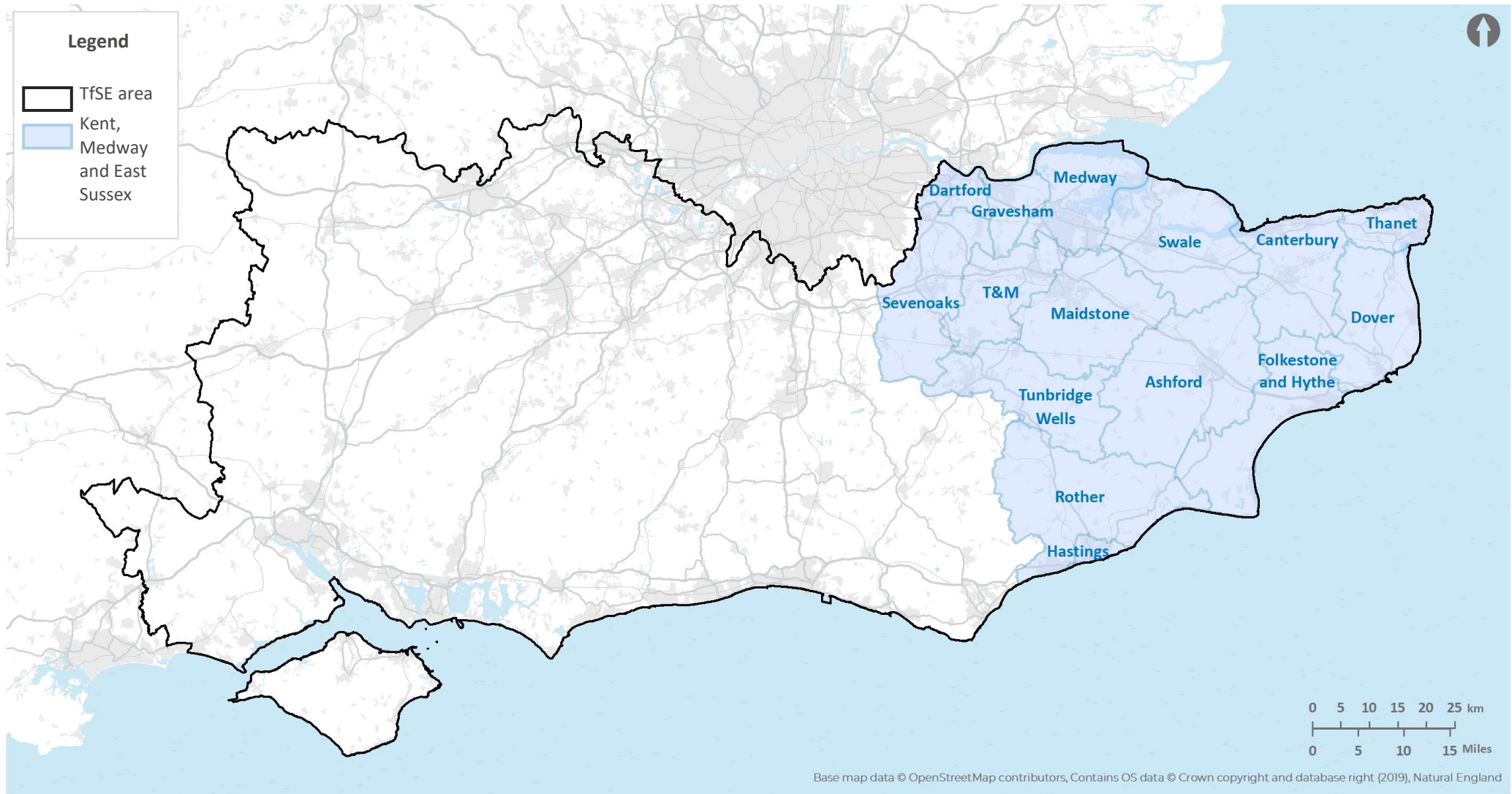
Kent, Medway and East Sussex – Corridors, Major Economic Hubs and International Gateways

The Kent, Medway and East Sussex Area encompasses the strategic corridors between London, Hastings, and the South East Coast. The Major Economic Hubs include the Medway (which is the third largest conurbation in the TfSE Area). Other Major Economic Hubs include Dartford, Gravesend, Sittingbourne, Herne Bay / Whitstable, Thanet, Sevebnoaks, Maidstone, Tonbridge, Royal tunbridge Wells, Ashford, Folkestone, and Hastings / Bexhill. The area includes some of the busiest global gateways in the UK – notably Port of Dover and the Channel Tunnel, including the EuroTunnel station at Folkestone and Ashford International and Ebbsfleet International stations – served by HS1 and the M20. Other major ports include Port of London (Gravesend), Chatham Docks, Sheerness, Thamesport, and Port of Ramsgate.



Kent, Medway and East Sussex – Local Authorities

The Kent, Medway and East Sussex Area encompasses the strategic radial corridors between South London and the Kent and East Sussex coasts. The Local Transport Authorities in this area include Kent, Medway, and parts of East Sussex. The Local Planning Authorities are Medway, all Districts and Boroughs in Kent, and Hastings and Rother in East Sussex. The area is served by the South East Local Enterprise Partnership.



National and International Policy Context

A policy review was conducted to determine the **strategic fit of the proposal** to the priorities of relevant organisations. Firstly, national and international policies, which set a framework for the future of planning, climate change and digital technology. They aspire to deliver transport networks that work better for the people, the economy, and the environment.

Climate Change/Decarbonisation Policies

The declaration of a UK climate emergency and associated legally binding net zero carbon targets (by 2050) has led to an increased focus on the importance of decarbonisation across all sectors, but particularly in transport.

Decarbonising Transport, A Better, Greener Britain (2021), sets out the political agenda for decarbonising all forms of transport and the UK's path to net zero transport. It comes in the wake of several other critical national (e.g. the **Clean Growth Strategy**). Highways England have set out their **Road Map to Net Zero (2050)** with Network Rail setting out its goal for Net Zero by 2050 in their **Environmental Sustainability Strategy**.

Understanding of how these changes will be delivered is provided in policies such as **Gear Change**, which aims to deliver significant improvements to cycling infrastructure, and **Bus Back Better**, which sets out the government's vision for bus services. We also expect to see wider adoption of placemaking policies such as "15-minute neighbourhoods" as a response to the climate change challenge.

Levelling-up and Planning Reform

In 2022, the Department for Levelling-up, Housing and Communities launched its long-awaited **Levelling-up White Paper**. Identifying 12 priorities of "Missions" for the UK to raise socio-economic outcomes of left behind communities, transport is one of the priorities and has a key role in supporting a further 10 Missions.

Planning in England is governed at a national level by a **National Planning Policy Framework**, which promotes sustainable development and has several environmental themes. This framework guides development of **Local Plans** and sets policy for the development of national and international transport networks.

The government has indicated an ambition to reform the planning system, laid out in the White Paper: **Planning for the Future (2020)**. Planning reforms are expected to focus on simplifying the planning system and making better use of data and digitalisation to help make the planning system work better.

Planning policy is increasingly emphasising the importance of building more new homes and making them more affordable and readily available to those living across the country. This closely follows the policy outlined in the **Housing White Paper 2017**.

Emerging Technology Policies

Technology will be critical for helping the transport network to continue developing over forthcoming years. Many believe recent trends in the adoption and penetration of emerging technologies have been accelerated by the advent of COVID-19.

Government policy is also evolving fast. In **Road to Growth** and the latest **Road Investment Strategy**, Highways England have emphasised the importance of using new technology across our highway network.

The DfT's policy document **Future of Mobility: Urban Strategy** (released in 2019) focuses how artificial intelligence and electrification will shape the transport network and deliver widespread benefits.

It is anticipated that the **Future of Mobility: Rural Strategy**, which is expected to be released imminently, and the encompassing **Net Zero Strategy**, due later this year, will further encourage greater uptake of low-emissions vehicles, in line with the long-term Transport Decarbonisation plan of banning the sale of petrol and diesel vehicles by 2030.

Regional and Local Policy Context

Regional and local policies recognise the strength of the South East’s natural assets and understand the importance of balancing future growth with social and environmental needs. The recently adopted Transport Strategy for the South East provides a framework for the implementation of national and regional priorities at a local level.

Economic Strengths

The region’s economic strengths are a key theme which run through several documents, for example, the **Economic Connectivity Review** showed that the area had the highest economic productivity outside London.

The importance of international gateways is noted in several policy documents, for example, the Highways England **Route Strategies**, and the several **Local Transport Plans** in the area.

The region’s proximity to London is also a key driver of economic growth. However, the area’s reliance on London is seen as a risk in documents such as the **London South East Market** network rail study.

Many stakeholders in the South East wish to see its own major economic hubs, which include some of the largest conurbations in England, establish themselves as self-contained, high-performing, cities. This can be supported by improving connectivity within and between these conurbations to enable them to function (i.e. agglomerate) cohesively and efficiently.

Planning for People and Places

At a local level, the importance of places and placemaking is emphasised in several policy documents. While this is cited in all Local Transport Plans and many Local Plans in the area, it is a particular focus for the urban authorities in the Outer Orbital area.

This is a key theme of the recently developed **TfSE Transport Strategy for the South East**, which aims to shift transport planning away from “planning for vehicles” towards “planning for people” and “planning for places”, and net-zero carbon emissions by 2050 at the latest.

Planning for vehicles acknowledges that some local highways schemes may be needed to support immediate housing needs and congestion hotspots in the Outer Orbital area.

However, the focus also needs to consider **planning for people** (as a means of considering all modes of transport, especially healthy and public transport) and **planning for places** (which required much better integrated special, transport, services, and other infrastructure planning at a regional and local level.

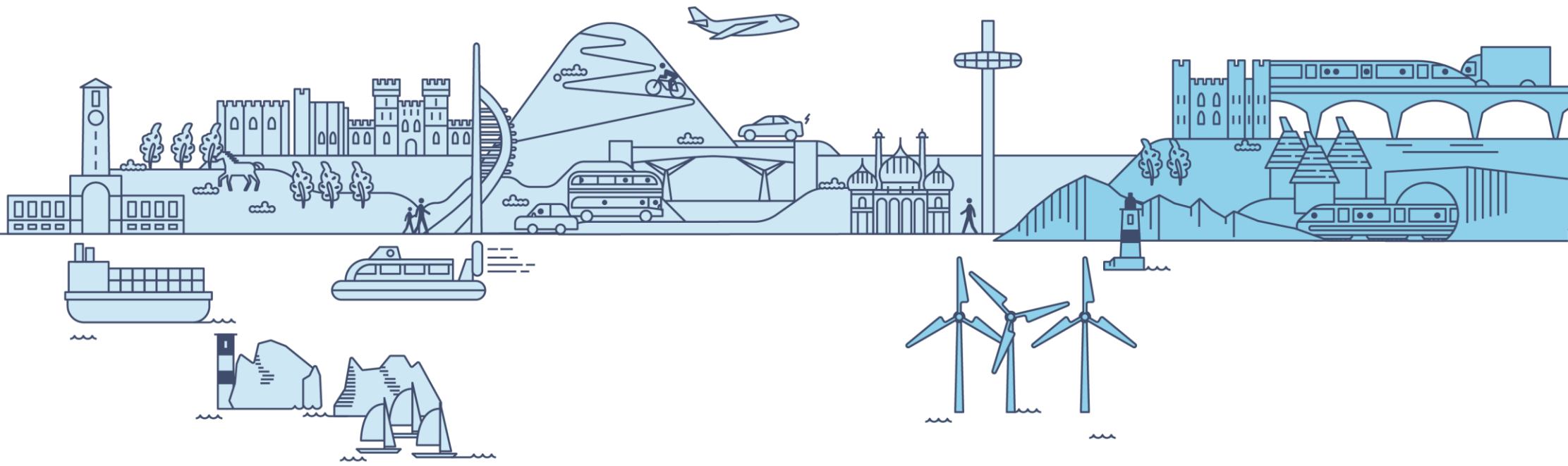
Local Response to COVID-19

The COVID-19 pandemic has clearly caused a significant rise in uncertainty around local planning. Local budgets are coming under increased pressure, and behavioral changes mean that traditional planning approaches have rapidly become obsolete.

In several areas, Local Industrial Strategies have been delayed as a result of the pandemic, and increased levels of uncertainty.

Several Local Enterprise Partnerships have released COVID-19 statements on their websites, and the South East LEP has released a formal **COVID-19 Statement** document. It explains SELEPs overall approach to the crisis and outlines how the LEP plans to help the region bounce back quickly.

Overall, however, it must be recognised that many local planning documents may quickly become obsolete as a result of the COVID-19 pandemic and the consequent economic outfall.



Part 2a

Challenges and Opportunities

Challenges

Socioeconomic Outcomes

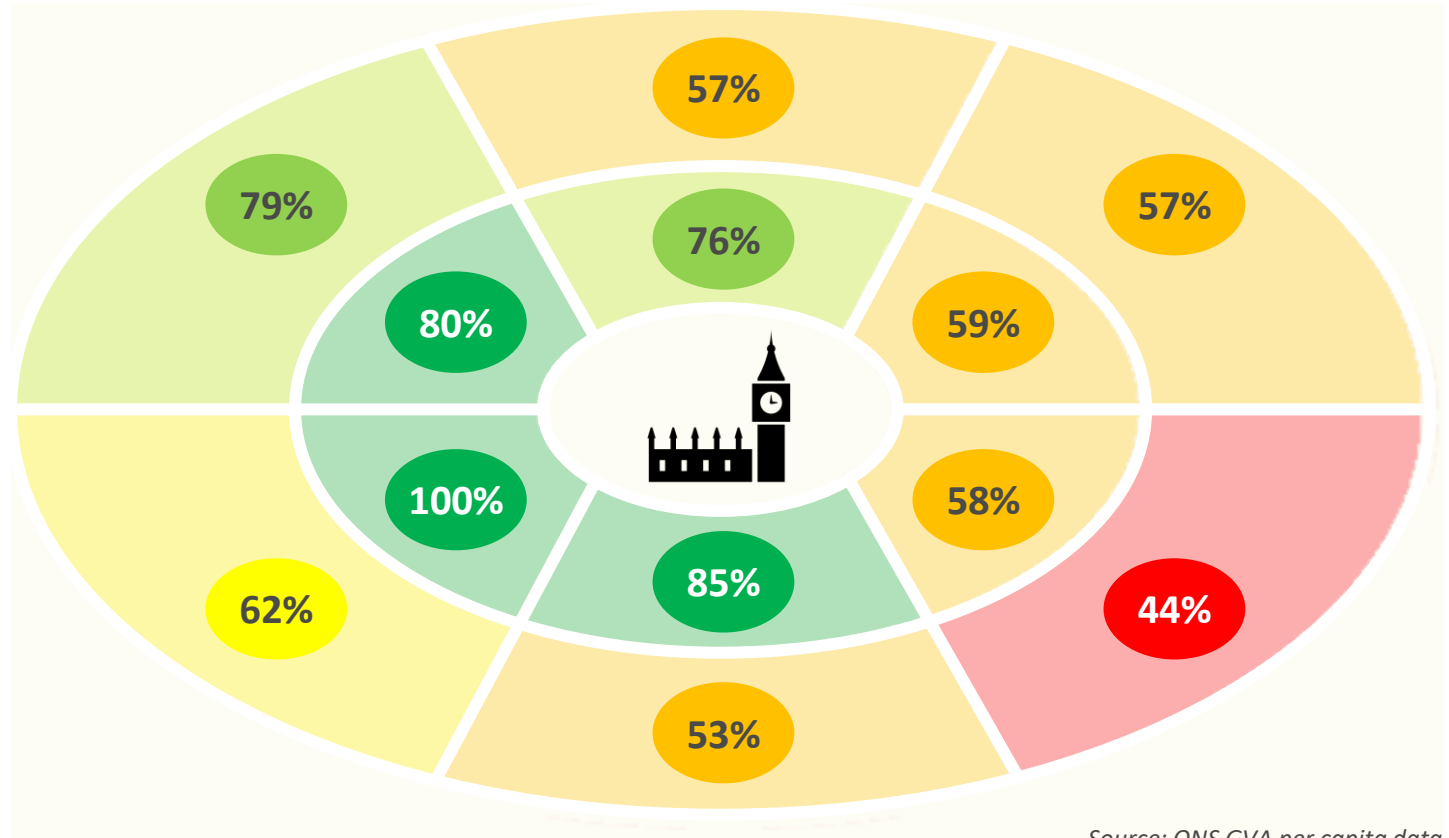
The Kent, Medway and East Sussex Area has poorer socioeconomic outcomes than any other part of South East England.

Figure 2.1 to the right 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 TfSE area study programme.

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 in the Kent, Medway and East Sussex Area need to ‘work harder’ to compete with other areas.

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.

Figure 2.1: Average GVA per capita around the South East, where South West/Inner = 100



Source: ONS GVA per capita data
South West / Inner Orbital zone = 100%
Icon Credit: Pham Duy Phuong Hung

Tables listing the data underpinning this analysis is provided in the Evidence Base Report.

A key goal of this study to help lift the economic performance of coastal areas.

Challenges

Current Carbon Emissions

In 2018, the Kent, Medway and East Sussex Area’s transport network emitted less carbon per capita than the South East overall.

3,746kTCO₂ were emitted by transport in 2018 in the Kent, Medway and East Sussex Area, making up 45% of total carbon emissions. This is in line with other sub-regions in the South East. **Figure 2.2** provides a breakdown of transport carbon emissions per capita for each area of the South East.

35% of transport emissions are classed as minor road carbon emissions. This is higher than the South East average (28%), indicating lower coverage of major roads across the corridor, and different levels of transport demand along these roads.

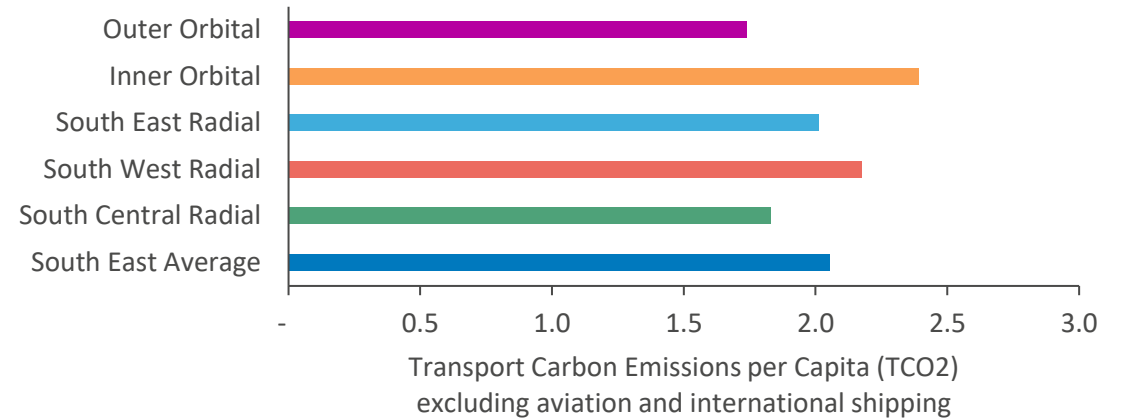
Current Carbon Trajectory

As **Figure 2.3** shows, reaching a net zero carbon transport network by 2050 (yet alone 2030) will be very challenging.

Carbon emissions from transport in the TfSE area declining, but not at a rate fast enough to reach net zero by 2050 or 2030.

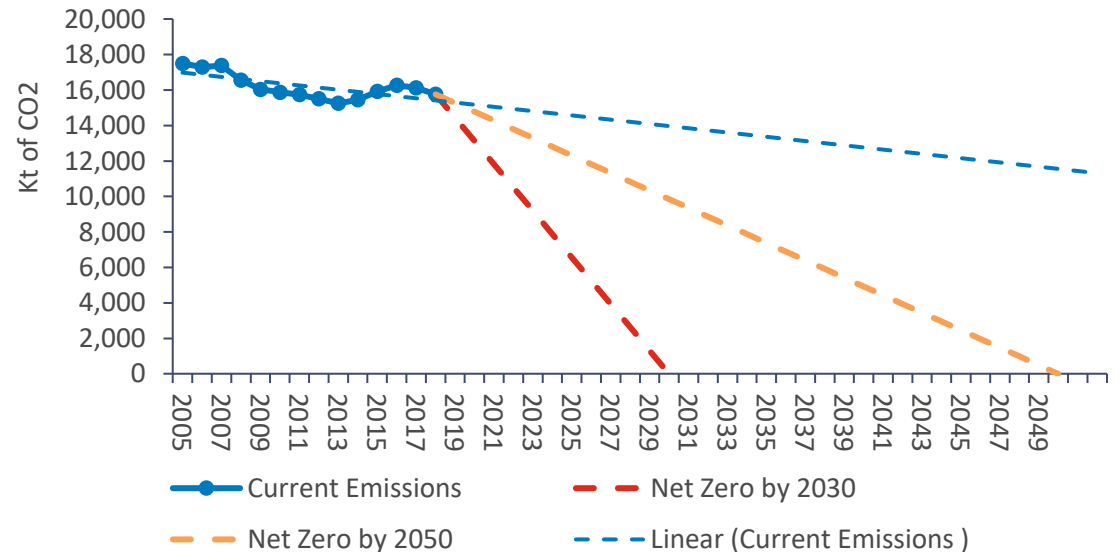
At the time of writing in March 2021, 17 of the 20 local authorities (upper and lower tier) in the Kent, Medway and East Sussex Area have declared Climate Emergencies and set targets to reach net-zero carbon emissions by 2050 (in some cases, much earlier).

Figure 2.2: Transport Carbon Emissions TfSE area



Source: BEIS (2018)

Figure 2.3: Carbon Emissions Trajectory for the TfSE area



Source: BEIS/DEFRA (2019)

Challenges

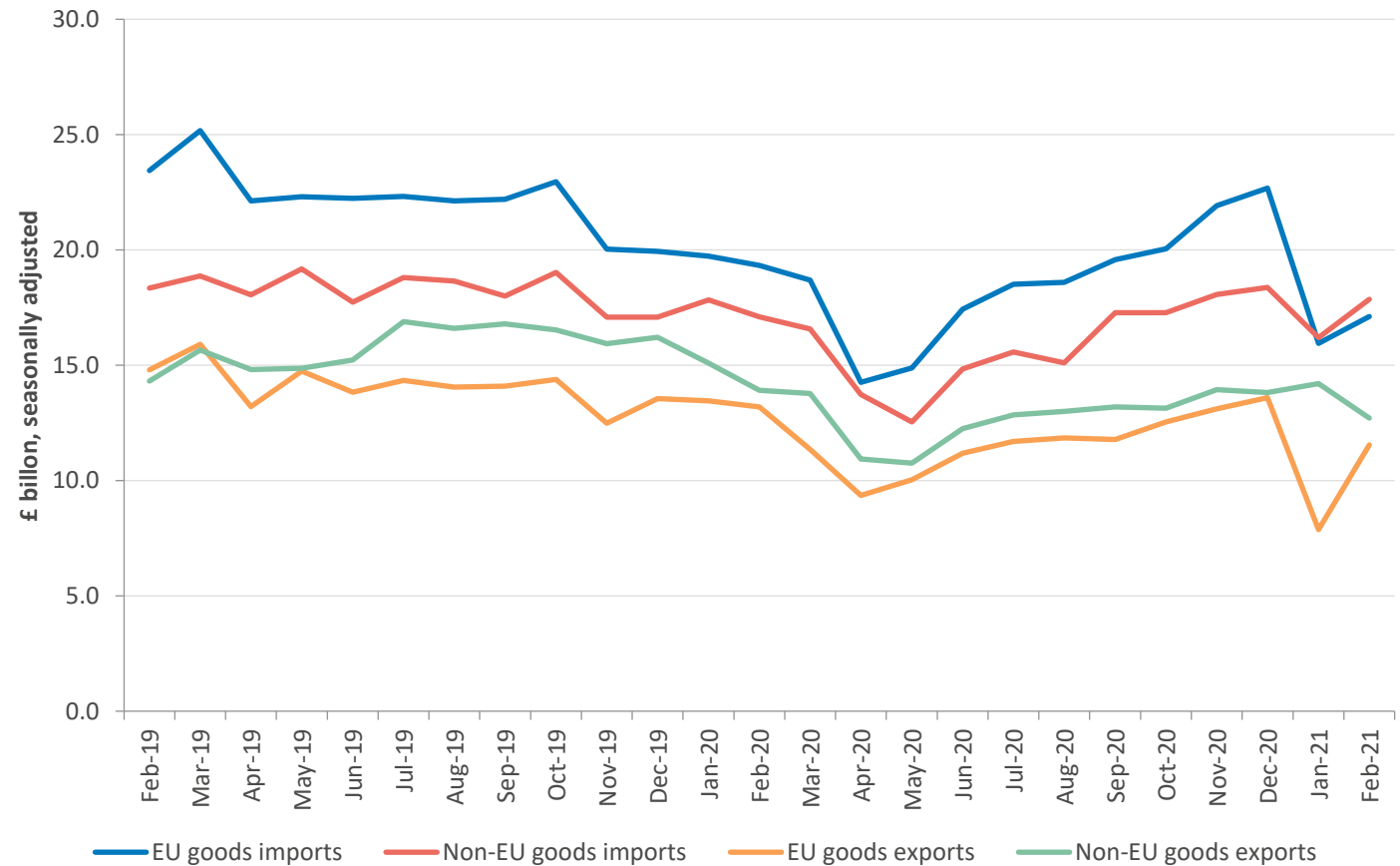
UK / EU Relationship

As the major international gateway for freight traffic to/from Europe, the strategic road and rail network in the Kent, Medway and East Sussex Area will be greatly impacted by the new UK/EU trade agreement.

It is too early to objectively assess the full impact of the new EU-UK Trade and Co-operation Agreement. The latest trade data (Figure 2.4) shows significant changes, but some of this may also be due to the COVID-19 pandemic. As seen in Figure 3.2, trade between September 2019 and September 2020 is down 12% and 16% for EU goods imports and exports, and down 4% and 21% for the equivalent non-EU trade flows. The figure also shows a significant dip from April 2020 compared to the relative stability of 2019, with gradual recovery towards the end of 2020.

The Kent Access Permit scheme was put in place to reduce congestion at the port of Dover after the Brexit Transition Period ended on 1st January 2021. As of late April 2021, HGVs are no longer required to obtain a Kent Access Permit.

Figure 2.4: EU and non-EU imports and exports, 2019-21



While it is hard to say with certainty what might happen with EU-UK trade in the future, we can confidently say that the transport network serving the Channel Ports were already under pressure prior to January 2021 and needed regular interventions to manage disruption from non-Brexit related events.

With high levels of future housing growth forecast for the area, the added pressure of Brexit makes it all the more critical that more capacity, and better resilience, are planned for this part of the transportation network.

Challenges

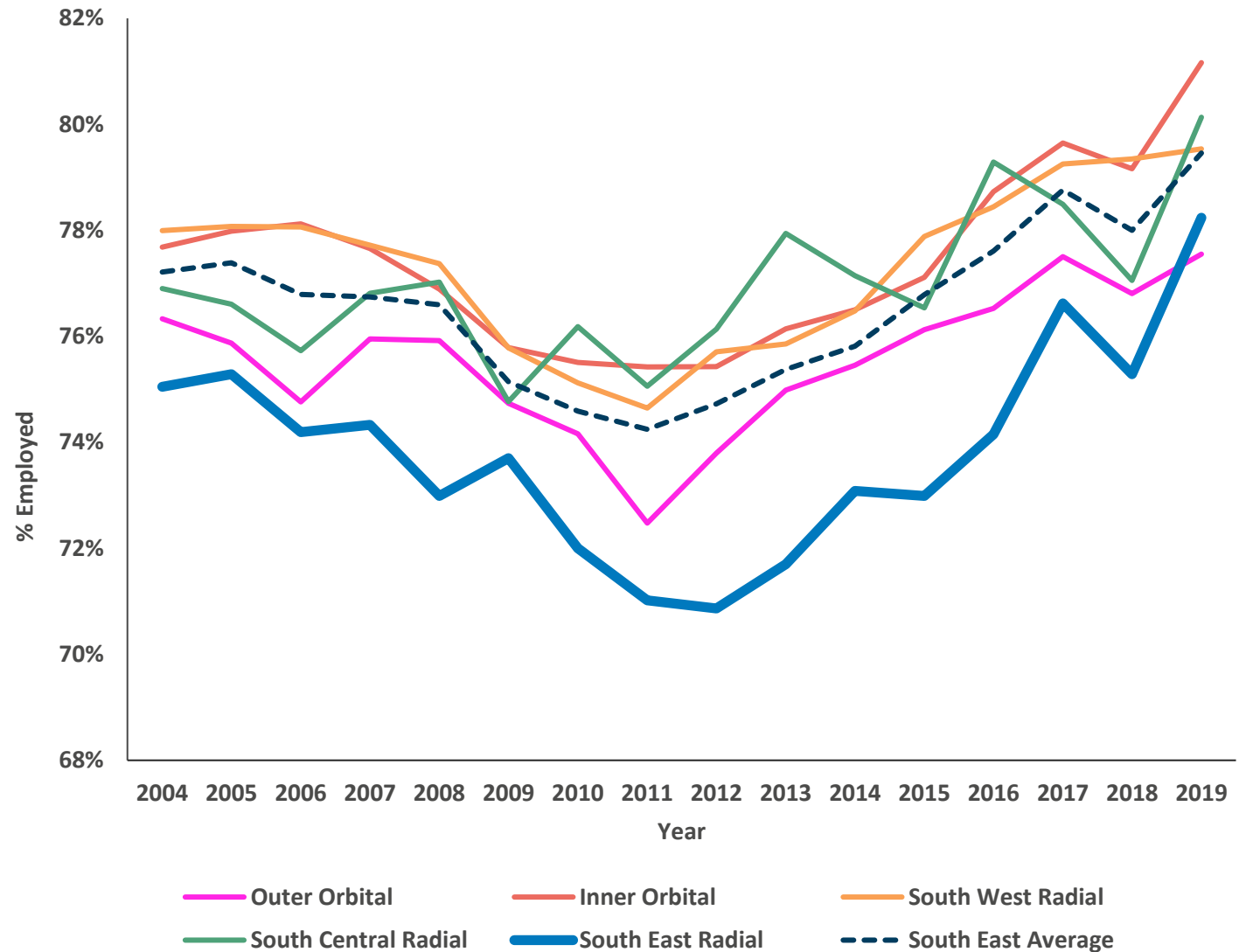
Employment

In 2019, 78% of the eligible workforce in the Kent, Medway and East Sussex Area was in employment. This is now in line with the South East (79%) and above the national average (76%).

Figure 2.5 shows employment trends for each of the five areas. In 2017, 758,319 jobs were available in the Kent, Medway and East Sussex Area, 23% of all jobs in the wider South East. Historically, the employment rate in the Kent, Medway and East Sussex Area has been lower than the rest of the South East. Despite this, the area has closed the gap in recent years and is now in line with other areas in the South East.

In 2019, 89% of the eligible workforce was employed in Dartford. In contrast, areas along the coast such as Thanet and Swale only have 74% of those eligible in employment. Dartford has also experienced the largest increase in the number of persons employed in the past decade, with this rising by 32%, twice as high as the increase in overall population. Maidstone and Medway have also experienced a 23% increase in the number of persons employed in the same period.

Figure 2.5: Percentage of the eligible working population employed in the South East



Source: NOMIS Official Labour Market Statistics, Employed Workforce (2019)

Challenges

Earnings

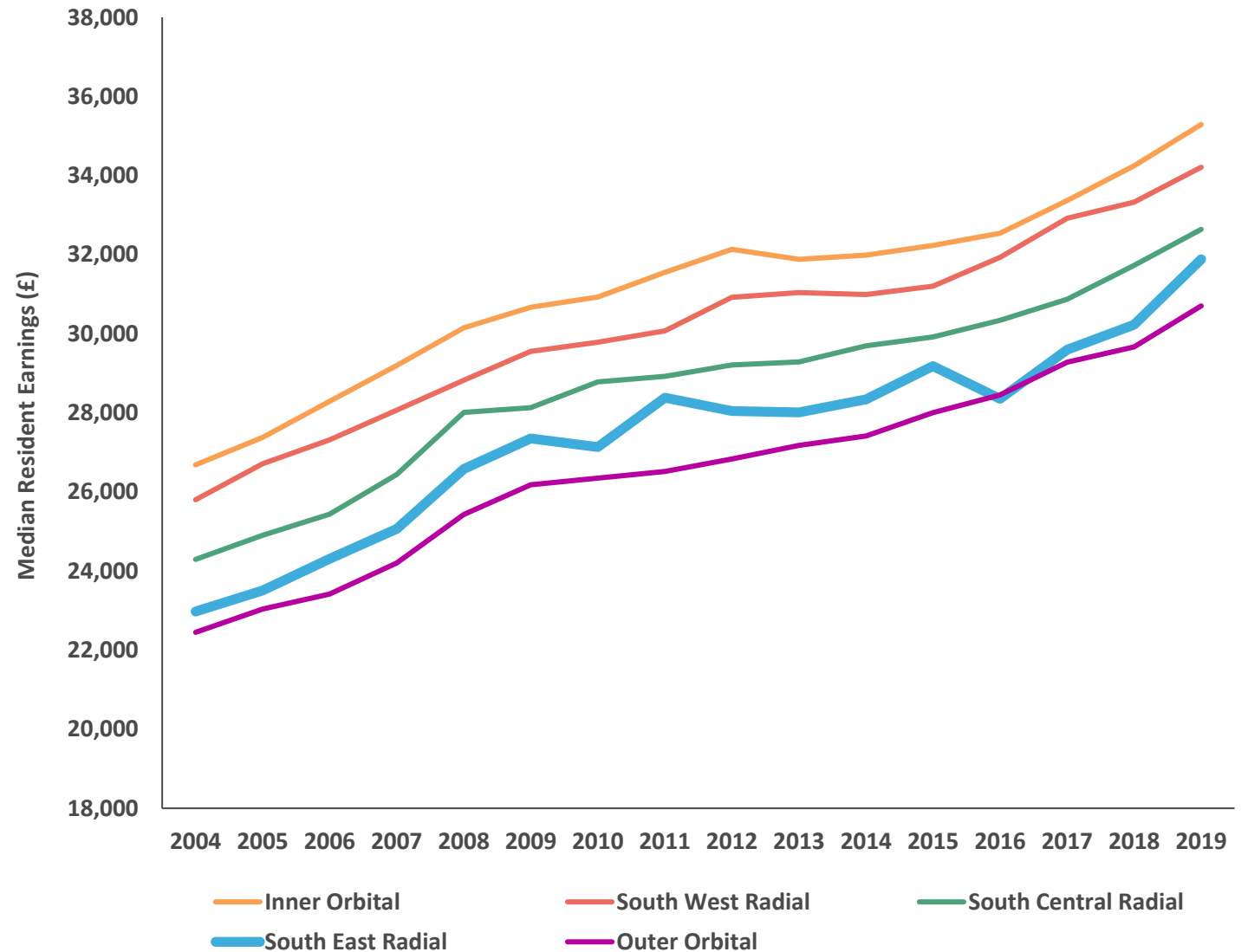
In 2019, the average resident in the Kent, Medway and East Sussex Area earned £31,879.

This is lower than the South East average, where the typical resident earns £33,110, however is still above the UK average.

Figure 2.6 shows the average earnings for residents from 2004 to 2019. Earnings growth in the Kent, Medway and East Sussex Area grew in line with the other areas in the TfSE area. However, there are significant variations in earnings and earnings growth between the local authorities in the Kent, Medway and East Sussex Area .

The Sevenoaks, Tonbridge, Tunbridge Wells corridor is home to the highest earners in this area, with the average resident earning in excess of £36,000. In contrast, this area is also home to some of the lowest earners in the South East, with the average resident in Thanet earning under £26,000 and in Hastings earning under £25,000.

Figure 2.6: Average resident earnings over time in the South East Region



Source: NOMIS Official Labour Market Statistics, Resident Earnings (2019)

Challenges

Rail Connectivity

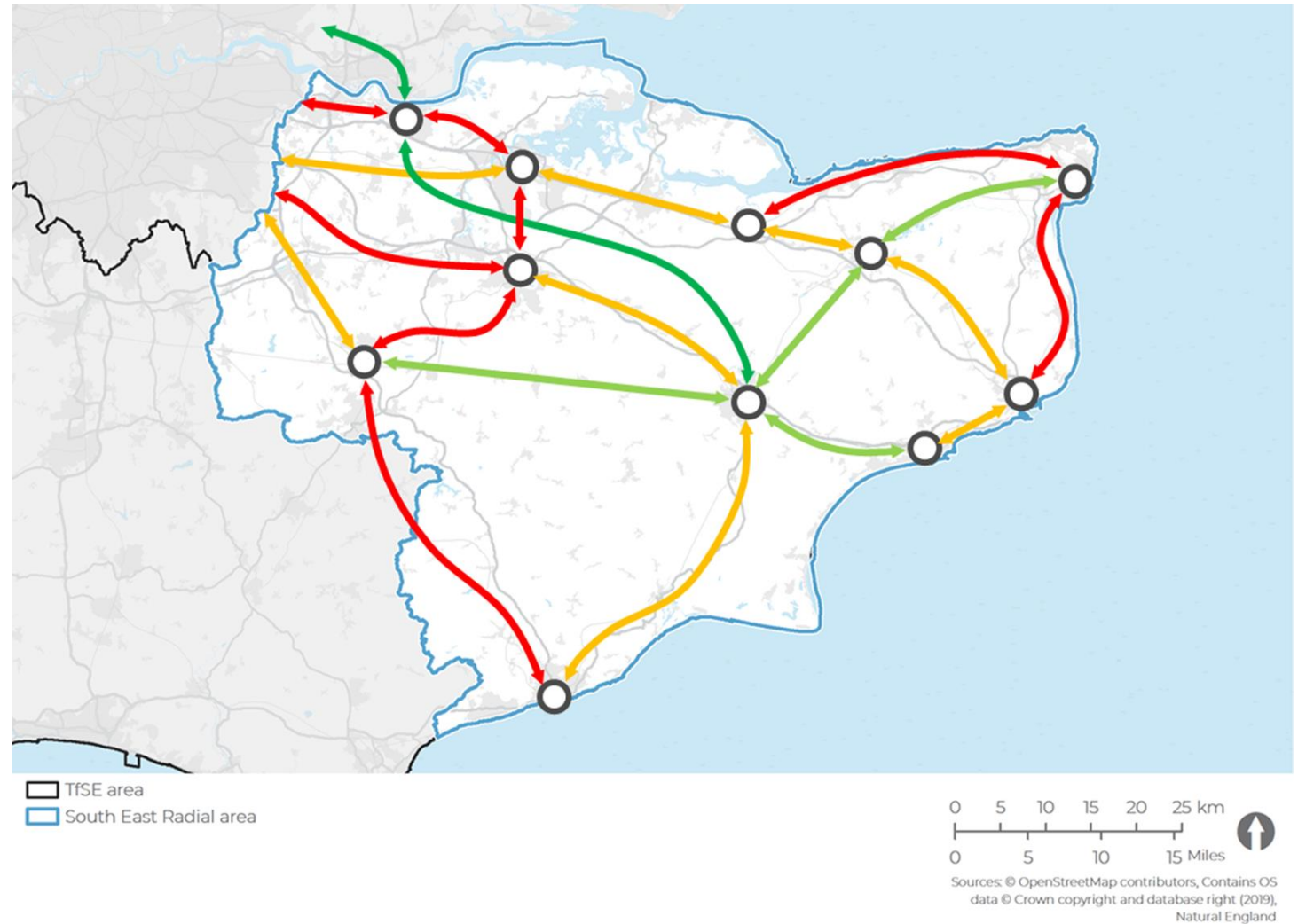
The level of service provided on High Speed 1 is excellent, however, connectivity is poorer on several other railways in the area.

The average speed of passenger rail services on most of the “Classic” rail network in the South East is relatively slow, especially in North East Kent, East Sussex, and along the Medway Valley. In contrast, Ashford, Folkestone, and Canterbury are served by much faster passenger rail services.

Figure 2.7 presents the average speed of rail journeys along rail corridors in the Kent, Medway and East Sussex Area and highlights the disparity in connectivity between High Speed 1 and railways serving North Kent.

This disparity means some coastal communities need to “work harder” to secure investment and prosperity.

Figure 2.7: Rail connectivity in the Kent, Medway and East Sussex Area



Source: ONS House Price Existing Dwellings to Residence Based Earnings Ratio (2019)

Challenges

Bus Patronage

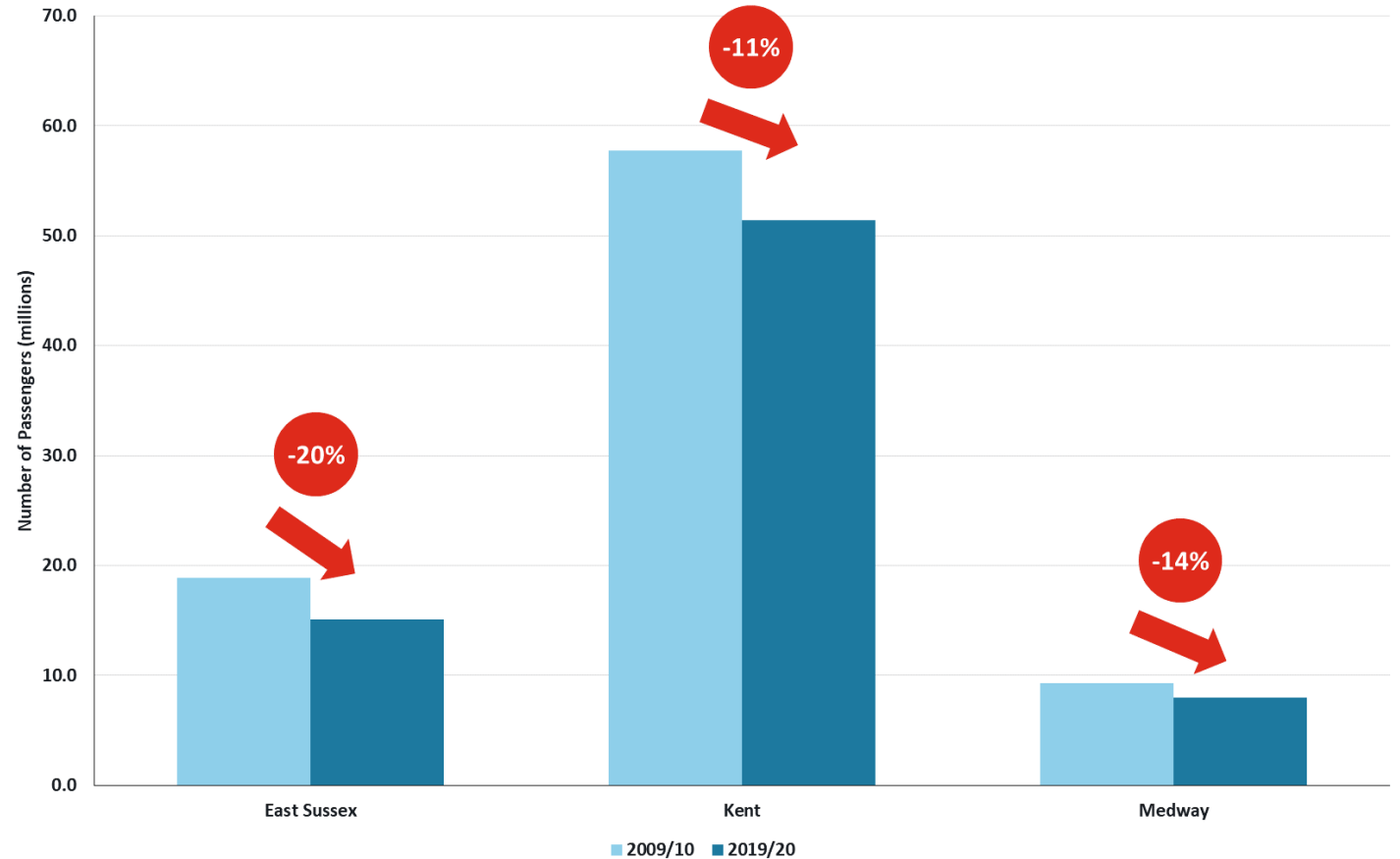
Bus use in the Kent, Medway and East Sussex Area has fallen in recent years – in some parts by a significant margin.

Figure 2.8 shows that bus use has declined in all three Local Transport Authorities in the area – particularly in East Sussex.

The drivers behind this decline are complex and are likely to be related to declining financial support, higher congestion, and competition from other modes of transport (including rail, which has grown over the same period)

A declining bus service makes it harder to make the case for investing in one of the more sustainable modes of transport.

Figure 2.8: Rail connectivity in the South Central Radial Area



Source: ONS House Price Existing Dwellings to Residence Based Earnings Ratio (2019)

Challenges

Housing and Employment Growth

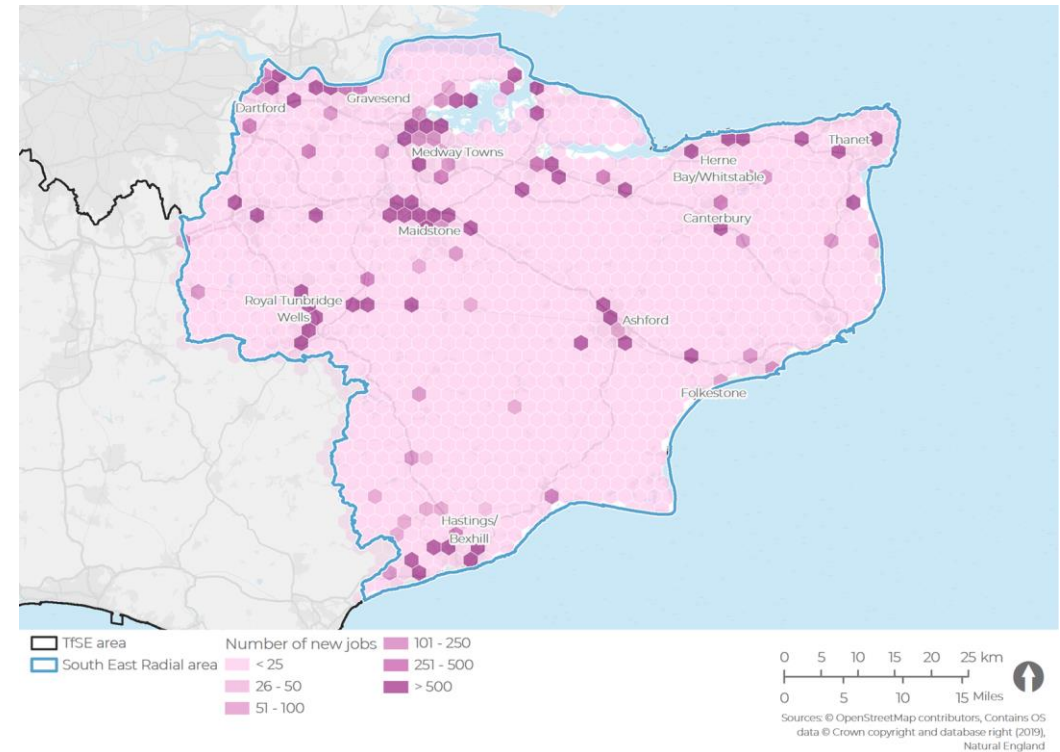
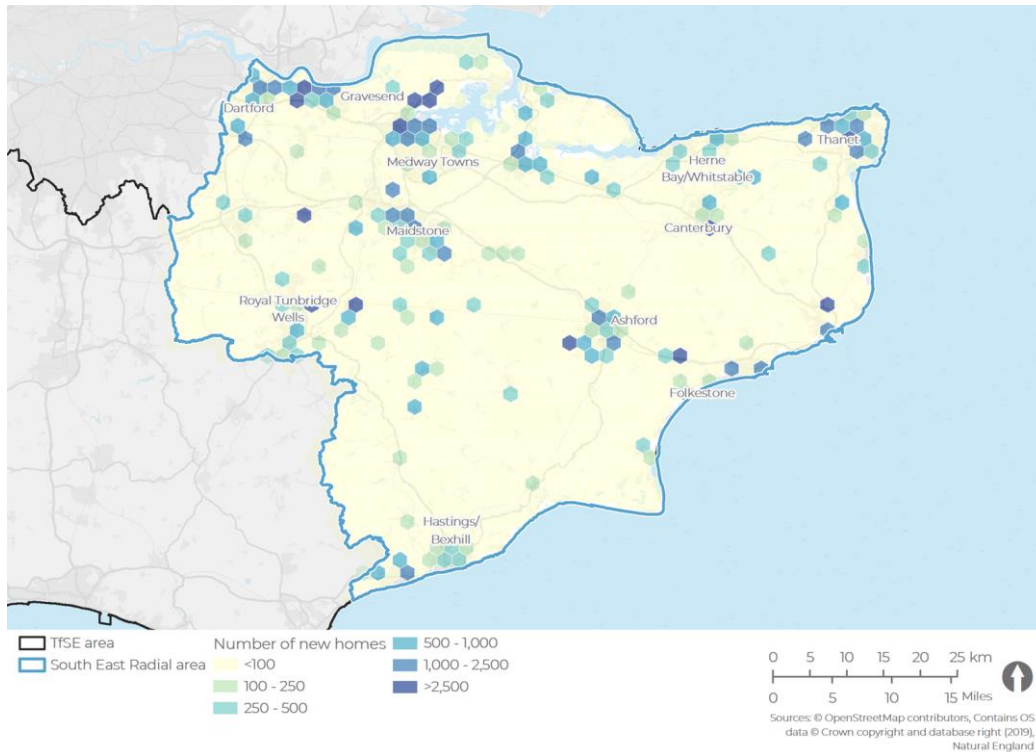
There is a risk that future development patterns will generate significant imbalance in housing and employment growth in the Kent, Medway and East Sussex Area.

Figure 2.9 below shows the housing and employment growth planned for this area.

The area is expected to accommodate significant housing growth, particularly in North West Kent, Ashford, Thanet, and the Hastings area. The pattern of development and the apparent imbalance of housing growth versus job growth (the latter is expected to be more concentrated in Mid and North Kent).

This is likely to drive higher demand for highway capacity. This in turn is expected to place pressure on parts of the highway network that already experience regular congestion. There is a risk that many of the congestion, safety, and air quality issues previously could worsen if not action is not taken to mitigate these impacts.

Figure 2.9: Housing allocations and employment growth forecasts in the Kent, Medway and East Sussex Area



Opportunities

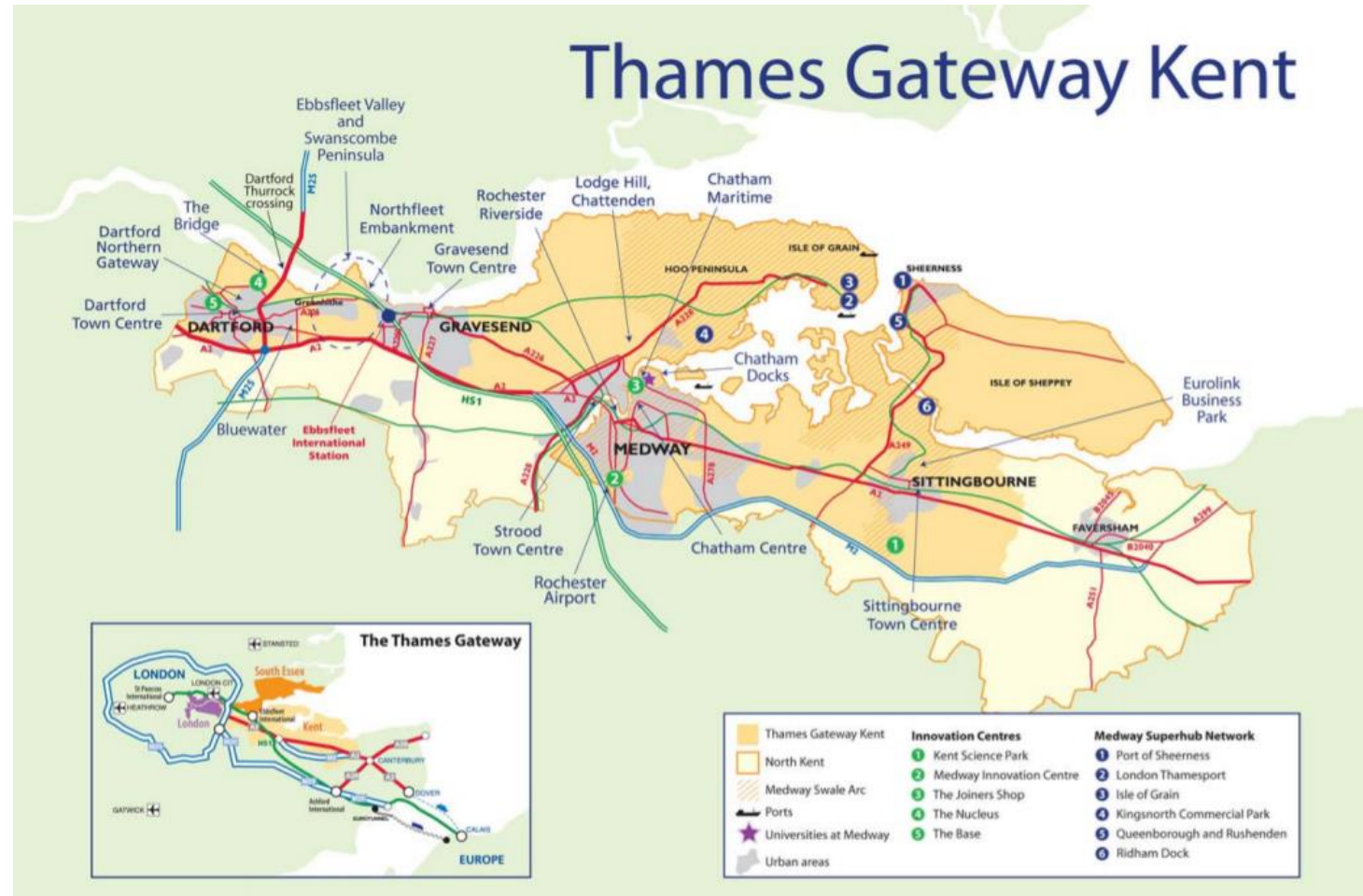
Thames Gateway

The Kent, Medway and East Sussex Area includes the part of the Thames Gateway that has been identified as an ideal location for high growth, investment, and regeneration.

The Thames Gateway Kent Partnership – which includes authorities representing the areas shown in **Figure 2.10** – identified several locations in North Kent and Medway that can accommodate high growth in employment and housing. This investment will need to be supported by sustainable, multi-modal transport infrastructure.

The Thames Gateway programme has helped to deliver significant investment in infrastructure in the area to date. Looking further ahead, local partners are supportive of extending Crossrail to North Kent and delivering the Lower Thames Crossing.

Figure 2.10: Thames Gateway Growth Opportunities



Source: Thames Gateway Kent Partnership

<http://www.tgkp.org/content/documents/TGKP%20Growth%20Plan%20May%20202014%20Final.pdf>

Opportunities

The London Resort

The London Resort (Figure 2.11) is a major development proposed at a brownfield site close to the town of Swanscombe, on the southern bank of the Thames Estuary.

Thanks to its proximity to Ebbsfleet International rail station, the resort will be just 17 minutes from London by train and will be accessible from mainland Europe.

The development will include 3,500 hotel rooms, which will be close (and easily accessed from) ferry terminals on either side of the River Thames. It is anticipated by the lead architects that the resort will generate £50bn gross economic activity in the 25-year period following its planned opening in 2024.

This development represents a significant employment opportunity for the whole Kent, Medway and East Sussex Area, particularly nearby fast growing communities in Dartford, Gravesham and Medway. While the development enjoys support from many key stakeholders in the area, it faces challenges from groups concerned about the development's potential impact on the natural environment.

London Resort Company Holdings (LRCH) withdrew the DCO application on 28th March 2022, the decision was driven by two key reasons. The first is the need to revise the transport strategy to relocate the proposed ferry terminal from Tilbury to Grays. Thurrock Council are working with LRCH to develop a direct ferry link between Grays and The London Resort. The second is the designation of the areas as a Site of Special Scientific Interest (SSSI), this was notified by Natural England in March 2021 and confirmed in November 2021. As this was subsequent to the submission of the application at the end of 2020, the additional environmental implications this presented were not fully addressed by what had been submitted. Despite local opposition continuing to build, LRCH maintain that they are committed to the project, intending to resubmit the application before the end of 2022.

Figure 2.11: An artist's impression of the London Resort



Source: Kent Online (December 2020) 'Plans for multi-billion pound London resort theme park dubbed the UK's answer to Disneyland submitted for review'
<https://www.kentonline.co.uk/dartford/news/5bn-london-resort-park-plans-submitted-240027/>

Opportunities

Tourism

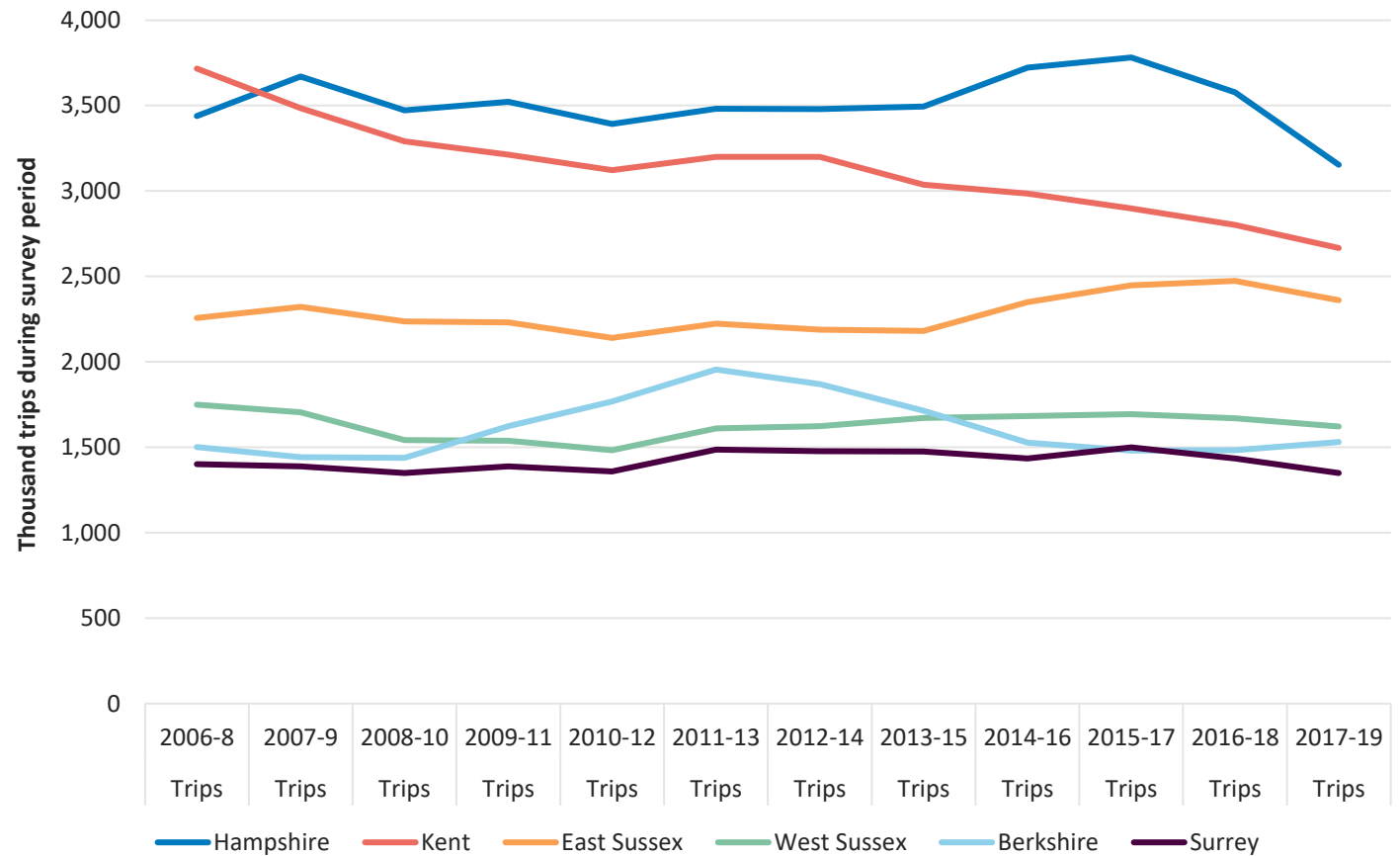
Kent (and Medway) used to be the most popular tourism destinations in the South East – but these areas have seen a gradual decline.

Survey data from Visit Britain (see **Figure 2.12**) suggests that Kent (which, for the purposes of this survey, also includes Medway) has experienced a decline of around 28% in domestic tourism trips over the last decade. East Sussex, on the other hand, has seen a modest growth in trips over the same period (5%).

The Kent, Medway and East Sussex Area boasts many tourism attractions including the Downs and Weald AONB, several historic cities, some of the UK’s largest retail destinations, and multiple other visitor attractions (e.g. Port Lympne, Diggerland, Turner Contemporary, 1066 Battle of Hastings site, etc.).

The COVID-19 pandemic has generated a boom in domestic tourism – could Kent, Medway and East Sussex benefit from this opportunity and grow a more sustainable tourism offer for domestic and international visitors?

Figure 2.12: Total domestic tourism trips by ceremonial county



Source: Visit Britain <https://www.visitbritain.org/destination-specific-research>

Future Challenges and Opportunities

Housing

The Kent, Medway and East Sussex Area is expecting significant housing growth as identified in Local Plans (typically up to the mid 2030s).

Future housing growth is expected to be concentrated around Kent Thameside, Medway, East Kent, and Hastings / Bexhill. 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. This will ensure that individuals can travel sustainably to their places of work and residence without relying on private transport.

Employment

Employment growth within the area is expected to be more concentrated on the area's Major Economic Hubs, focussing on Kent Thameside, Medway, Maidstone, and Canterbury.

Many of the higher growth industrial sectors (e.g. low carbon technology and transport and logistics) are likely to be based within the city centres, as these industries favour urban environments.

Risk of Imbalance

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

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

COVID-19

COVID-19 has significantly altered established working patterns – but the long-term impact is not yet clear.

The pandemic has highlighted the impact that new ways of working could have on travel demand. This may influence how established employment space is use, where people choose to live, and what this means for the development of transport services. Public transport will also need to adjust to lower revenues – at least in the short term.

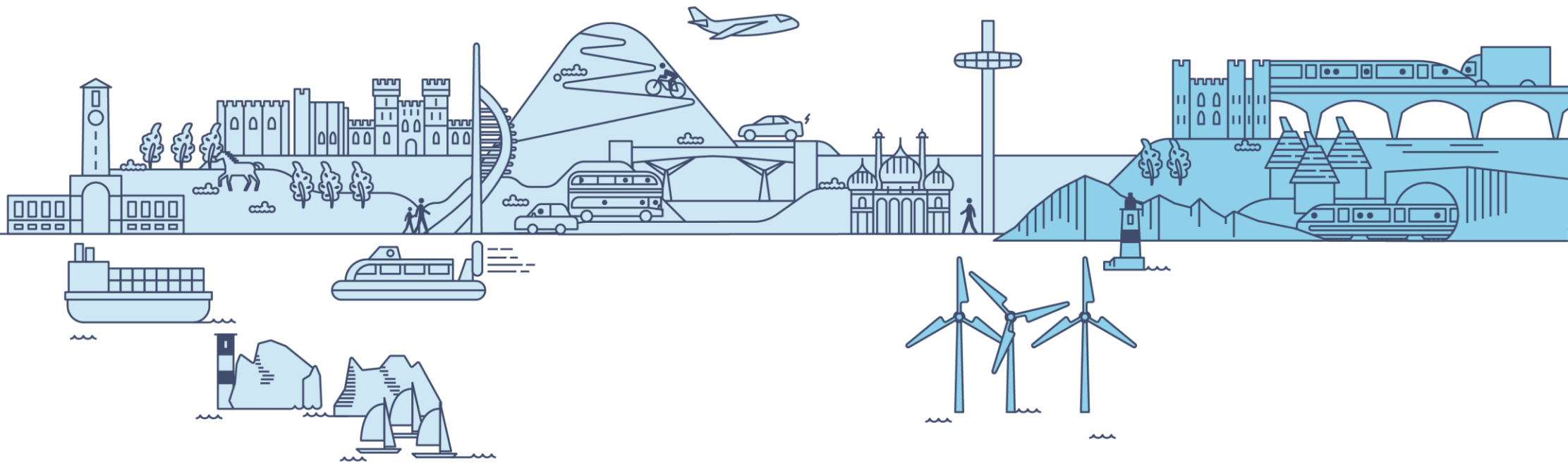
Need for Intervention

If no plans are made to address the issues in Kent, Medway and East Sussex, then many socioeconomic challenges will likely persist.

The current pipeline of highway and rail schemes being delivered through the Road Investment Scheme (RIS) and rail investment programmes should help address short-term capacity and connectivity charges.

However, in the longer term, the focus should shift away from adding highway capacity ('planning for vehicles') and instead focus on investing in public transport services ('planning for people') and promoting policies such as integrated land use and transport planning ('planning for places').

This SPOC aims to provide a framework for managing the future challenges and leveraging the future opportunities summarised here. The following four pages present the Vision, Objectives, and Problem Statements for the Kent, Medway and East Sussex Area.



Part 2b

Problem Statements

Problem Statements

Global Issues

1. Transport is not de-carbonising fast enough.
2. Climate change threatens the resilience of the transport network.
3. Freight is heavily reliant on the highway network, especially for first-mile-last-mile deliveries.
4. There is a recognised need for housing and communities – but it needs to be sustainable.
5. The mobility benefits of new technologies are not accessible to everybody.

Economy and Society

6. The area is “cut off” from the rest of the UK by London and the River Thames.
7. The economic influence of London dominates the area.
8. Industry is relatively weak and economic productivity is below average.
9. Poor connectivity is holding back coastal and island communities.
10. Rural communities are being left behind in digital, active, and public transport connectivity.

International Gateways and Highways

11. Dover is highly constrained by its small footprint and access.
12. The Channel Ports (Dover/Folkestone) are too reliant on one highway corridor.
13. Too many disruptive events at ports result in widespread disruption on the highway network.

Placemaking

14. There are significant highway congestion, safety, and air quality issues in multiple places.

Railways

15. Too many rail services are too slow.
16. There are significant resilience challenges on parts of the rail network.
17. There are capability and capacity challenges on parts of the rail network.

Public Transport

18. The quality of mass transit services is variable and bus patronage is relatively low.
19. Public transport integration is weak – both physically and in terms of the ‘customer journey’.
20. For many people, public transport fares are too high and too complicated.
21. Too many public transport services and networks are not accessible to all users.

Active Travel

22. Cycle participation is relatively low, particularly in North Kent
23. Cycling infrastructure is variable and generally poorer than other parts of the South East.

1 Transport is not de-carbonising fast enough

While many stakeholders in the Kent, Medway and East Sussex Area recognise the need to decarbonise, this is not happening fast enough.

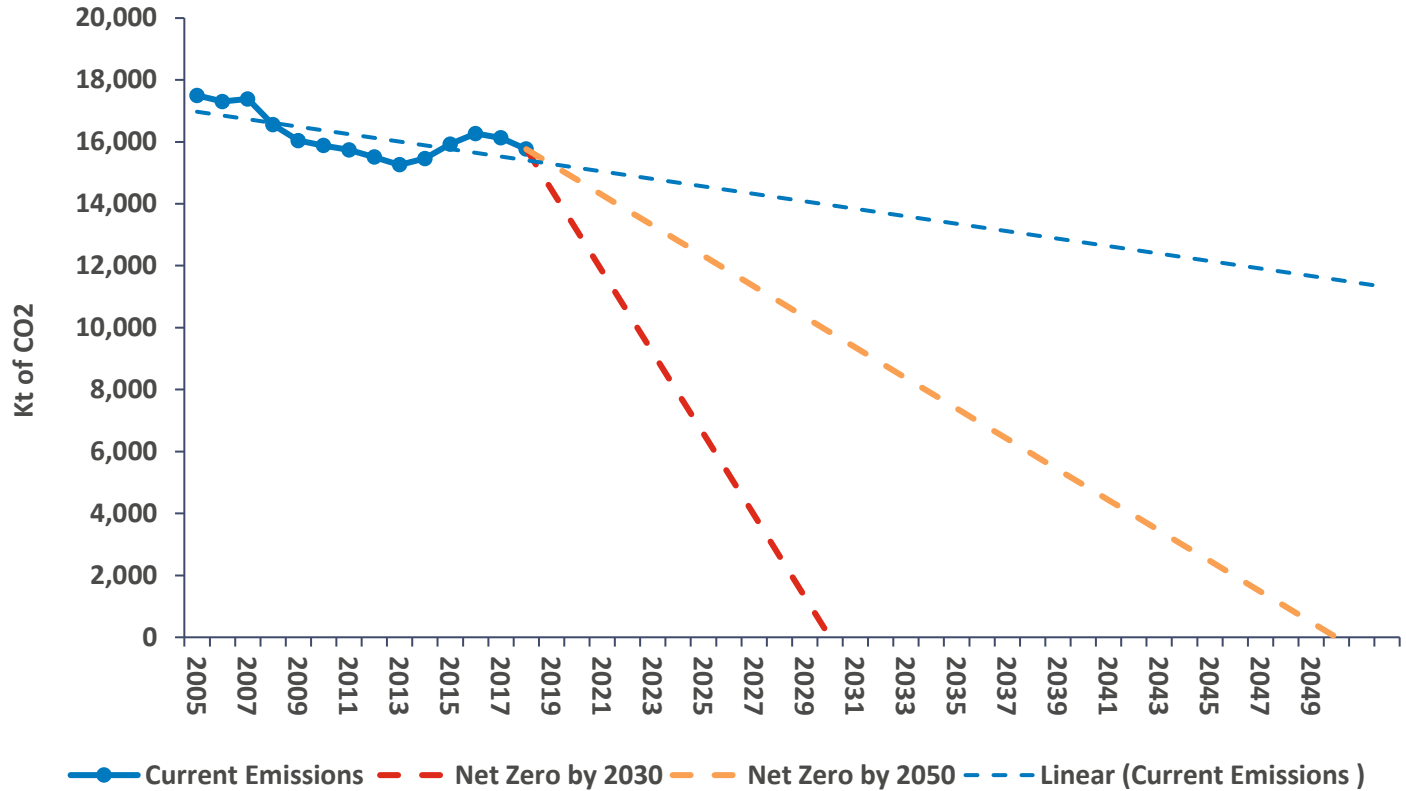
The trajectory shown in **Figure 2.13**, the South East will not reach a position of net-zero carbon emissions by transport by 2050 – which is now a legal requirement supported by domestic legislation and international agreements (e.g. The Paris Agreement).

All three Local Transport Authorities in the Kent, Medway and East Sussex Area have declared Climate Emergencies and committed to ‘net-zero’ carbon emissions by 2050.

Electric vehicle take-up is low and there are some areas with very poor access to charging points. A step change in the electrification of highway transport and modal shift away from fossil fuel transport to electric/healthy transport is needed if the area is to reach its climate commitments.

The South East’s rail network, while almost entirely electrified, includes one section of diesel operations between Ashford and Hastings, which contributes to this problem.

Figure 2.13: Transport Carbon Emissions Trajectory for the TfSEarea



Source: Steer analysis of BEIS data

“We recognise the UK environment and climate emergency and will continue to commit resources and align its policies to address this. Through the framework of the Energy and Low Emissions Strategy, we will facilitate the setting and agreement of a target of net zero emissions by 2050 for Kent and Medway ... We will reduce greenhouse gas emissions from our own estate and activities to net zero by 2030. We are also committed to reducing greenhouse gas emissions from the whole county to net zero by 2050.” (KCC, 2019).

The transport networks serving the Kent, Medway and East Sussex Area are vulnerable to the effects of climate change and in many areas are showing signs of poor resilience.

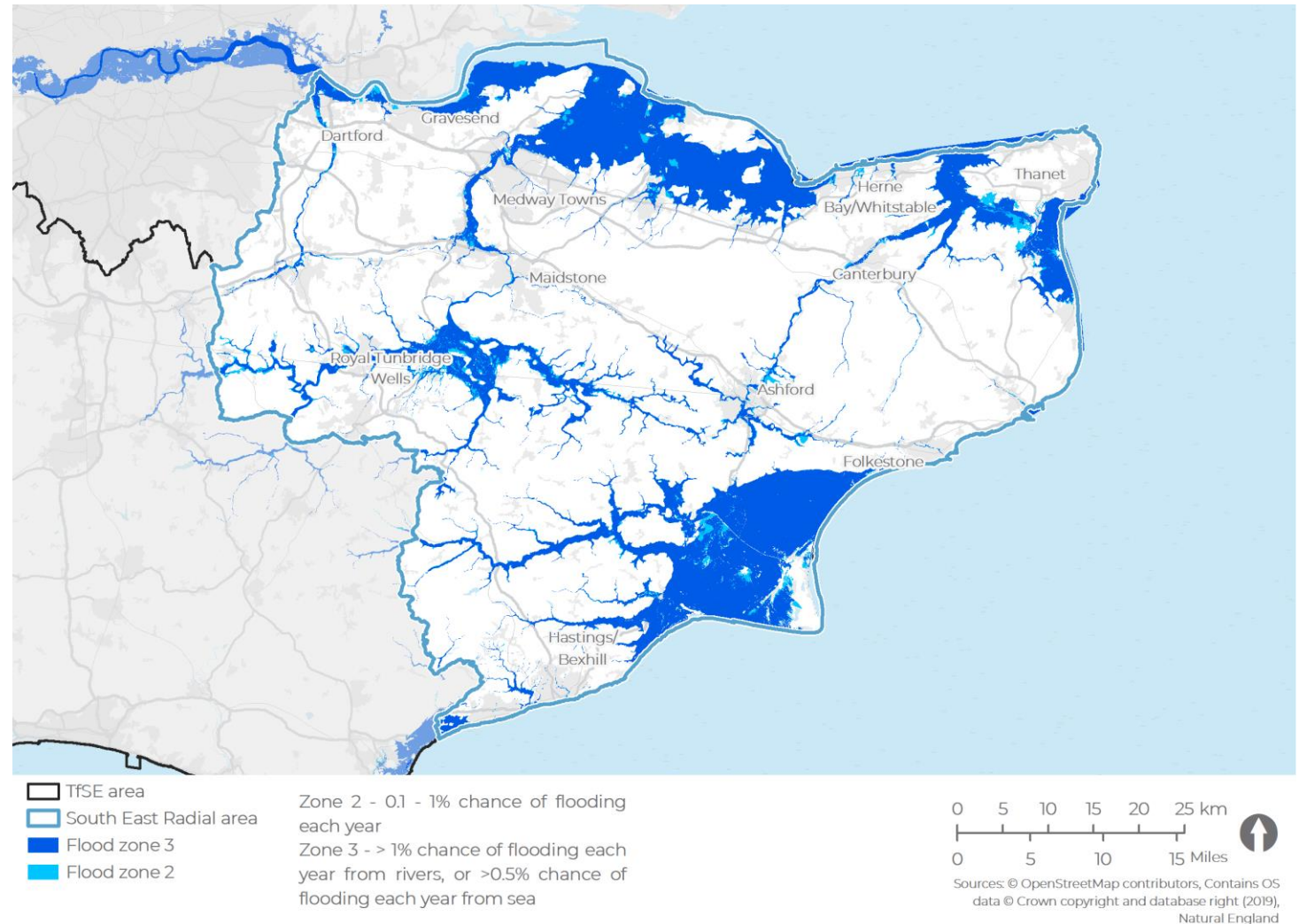
The area's transport networks cut across several areas that are already vulnerable to flooding and temperature extremes (see **Figure 2.14**). Until recently, Faversham held the record as having recorded the highest temperature in the UK – a heat that can disrupt railways and highways.

The railway network is relatively old and features numerous tunnels and cuttings. Some sections, such as Folkestone Warren (see right), are particularly vulnerable to storms and long periods of wet weather.

Climate change is likely to increase the frequency and strength of weather events (and extreme heat in summer). There is also a risk of sea level rise in the longer term, threatening low lying infrastructure and communities.

The outcome of this problem is increased operations, maintenance and renewal costs, which will be borne by transport users and wider society.

Figure 2.14: Flood Risk in the Kent, Medway and East Sussex Area



3 Freight is highly reliant on highways, especially for first-mile-last-mile deliveries

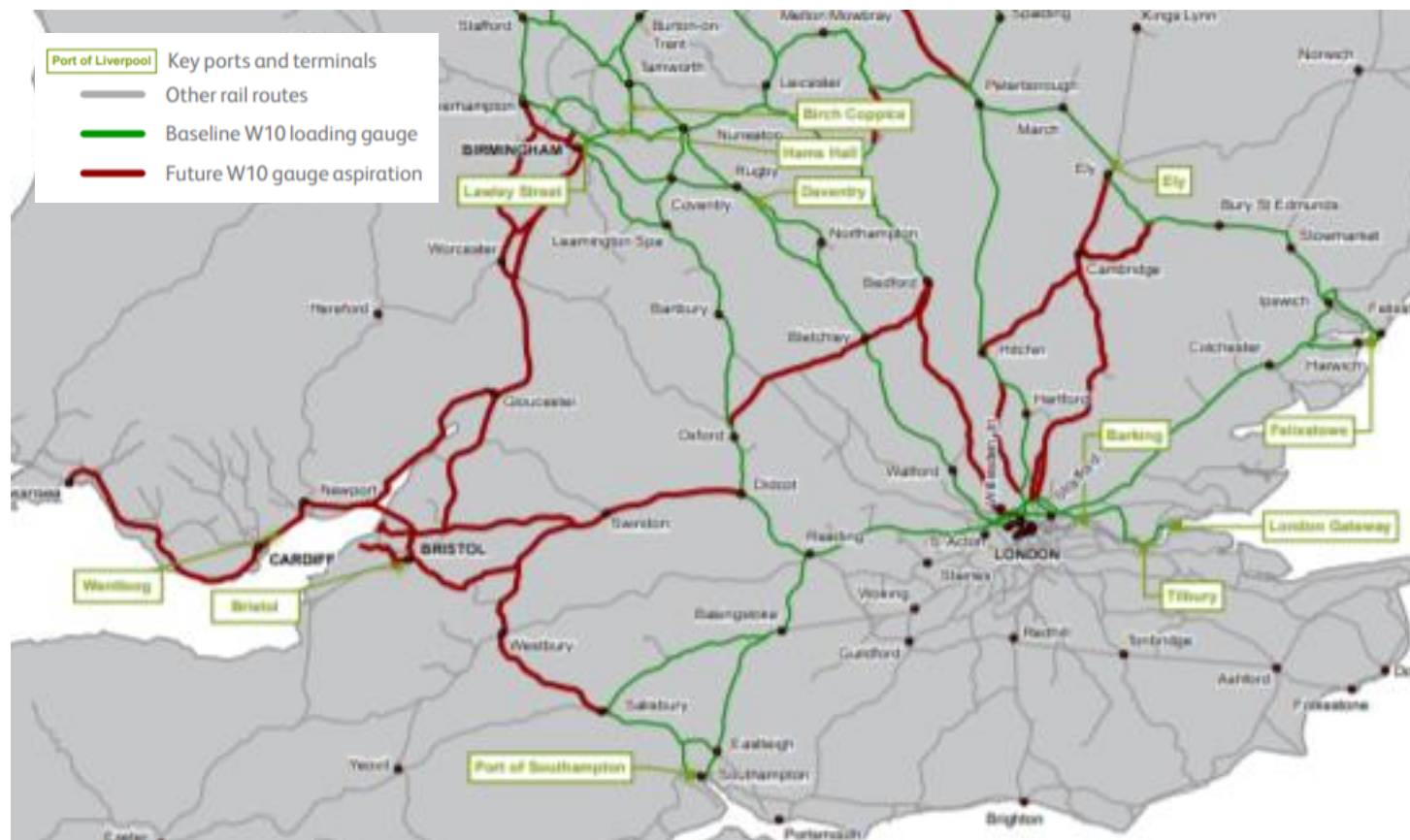
Freight is very reliant on highways.

Rail freight mode share is low nationally (around 5%, based on tonnage) and, according to the ORR, data, has declined in terms of freight train movements on the national network. There is, however, some promising signs of recovery as rail freight grew in 2020. An electric rail freight sector should be well placed to provide a low carbon alternative – although it is recognised freight is in competition with passenger rail for paths. Inland waterways could also play a role.

It should be possible to achieve higher mode shares. However, there are significant barriers to rail freight in the South East, particularly for routes to/from the Channel Ports. These barriers include a lack of freight terminals and strategic rail freight interchanges, poor access across London, high access charges on High Speed 1 and the Channel Tunnel. Inadequate gauge clearance also affects rail routes serving Dover (see **Figure 2.15**).

First-mile-last-mile-deliveries, which include (fast growing) home deliveries, are almost entirely reliant on highways.

Figure 2.15: Rail network Gauges

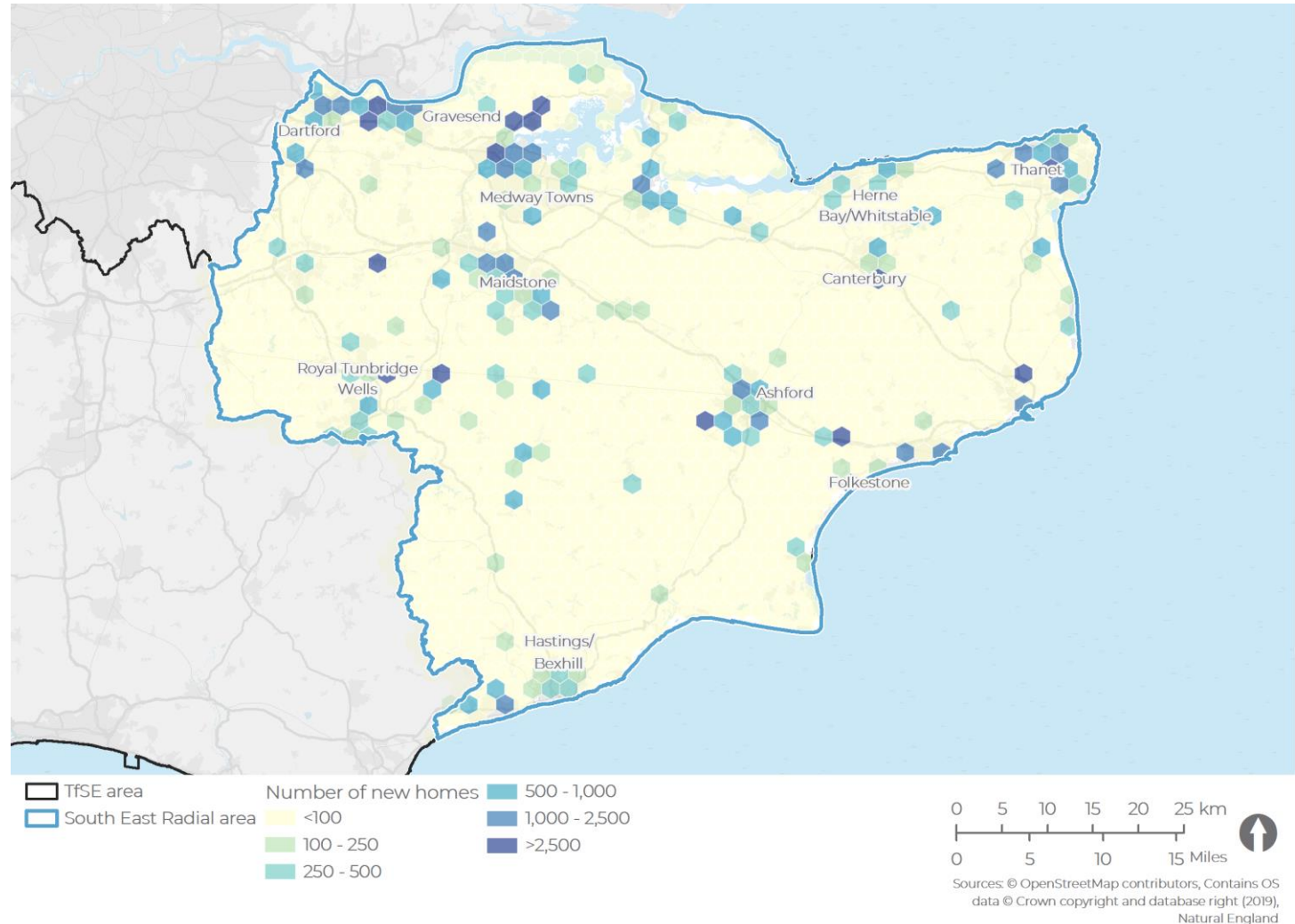


Map source: Network Rail, freight Network Study, <https://www.networkrail.co.uk/wp-content/uploads/2017/04/Freight-Network-Study-April-2017.pdf>
Freight statistics source: <https://dataportal.orr.gov.uk/media/1738/freight-rail-usage-performance-2019-20-q4.pdf>

There is a recognised need for housing in the Kent, Medway and East Sussex Area – but in the right places, supported by the right infrastructure, and planned to deliver sustainable travel outcomes.

The fragmented nature of the planning system and lack of effective strategic planning makes it difficult to integrate spatial, transport, and economic planning. The area is also heavily constrained by the landscape and layout of urban areas. To accommodate over 185,000 new homes by 2050 (see **Figure 2.16**), there will be a need for additional housing and employment. Recent discussions with government suggest this figure may grow, albeit with more of a focus on delivery in urban areas. There is risk that housing growth will result in unsustainable transport patterns as many housing developments are being delivered some distance away from shops, town/city centres, commercial services, public services, and transport hubs. There is also a risk of imbalance in employment and housing growth (see **Figure 2.9** in Part 2b).

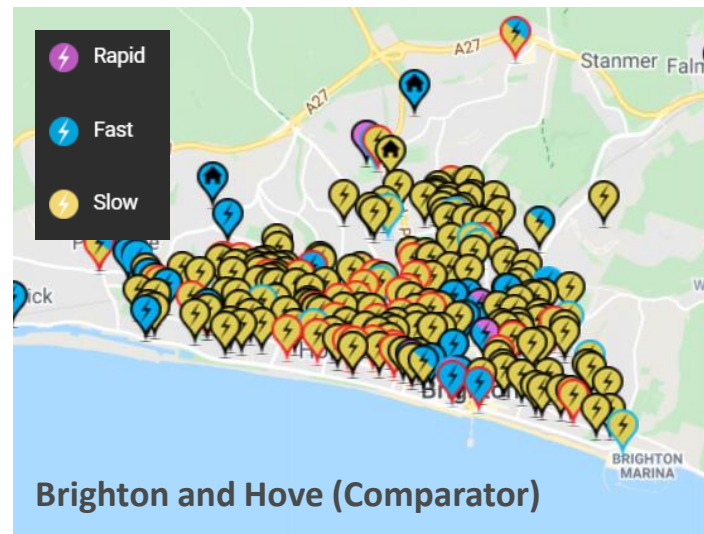
Figure 2.16: Local Plan Projections for Housing Growth



There are significant gaps in infrastructure to support future technologies – notably electric vehicle charging infrastructure.

Evidence from Zap Map (see **Figure 2.17**) shows there is a significantly higher provision of electric vehicle charging point in urban areas such as Brighton and, to a lesser extent, Maidstone than there are in less densely populated (but still semi-urban) areas such as Deal and Bexhill. While it is acknowledged this reflects higher levels of on street parking in areas like Brighton City Centre, it appears that more deprived areas (such as Bexhill) are less well served than more prosperous suburban areas, such as Canterbury. This problem underlines the risk of technology contributing to – rather than helping address – rural and socioeconomic. There are other barriers to electric vehicle uptake – notably the price of Electric Vehicles and range anxiety associated with their performance – that will need to be addressed if we want the road fleet to fully decarbonise by 2050.

Figure 2.17: Zap Map locations of Electric Vehicle Chargers (all at the same scale)



Source: Zap Map <https://www.zap-map.com/live/>

Figure 2.18: Google Earth view of the Kent, Medway and East Sussex Area from above



The ceremonial country of Kent borders the Thames Estuary and the North Sea to the north, and the Straits of Dover and the English Channel to the south (see **Figure 2.18**). Lille is closer to Maidstone than Leicester. Most of the UK can only be accessed by crossing the River Thames at Dartford, driving through Greater London, or via the M25 through Surrey. Rother and Hastings are similarly remote and have limited transport connectivity thanks, in part, to the Weald. This means the Kent, Medway and East Sussex Area shares many characteristics of peninsulas such as the South West Peninsula, which suffer similar challenges with connectivity and (especially in Cornwall's case) productivity.

While the whole TfSE area has strong economic ties to London, the economic influence of the Capital is particularly strong in this area.

London's pre-pandemic population was 3 – 4 times larger than the population of the Kent, Medway and East Sussex Area . However, it's economy is estimated to be 8 times larger than Kent, Medway and East Sussex (See **Figures 2.19** and **2.20**).

London's overwhelming economic influence is compounded by:

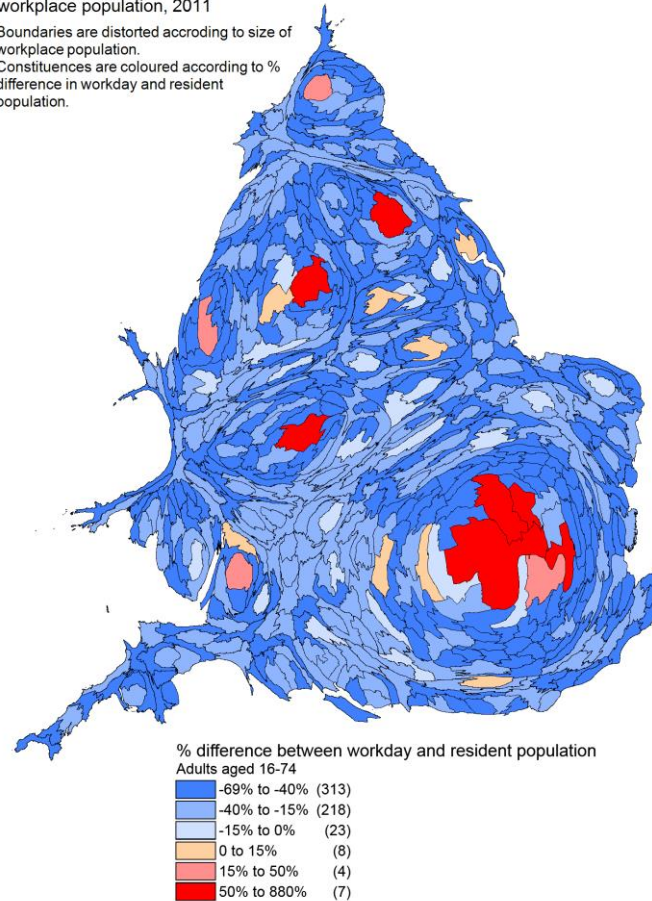
- the Kent, Medway and East Sussex Area's relative isolation compared to other parts of the South East (Problem Statement 8);
- the absence of a large cities such as Southampton or Brighton;
- the absence of a large employment cluster, such as Gatwick Airport; and
- high quality transport/access to London.

Having access to an international city represents a significant strength for the South East. However, many stakeholders would like to see less reliance on the Capital to promote a more resilient economy.

Figure 2.19: Work/resident popⁿ (HoC, 2011)

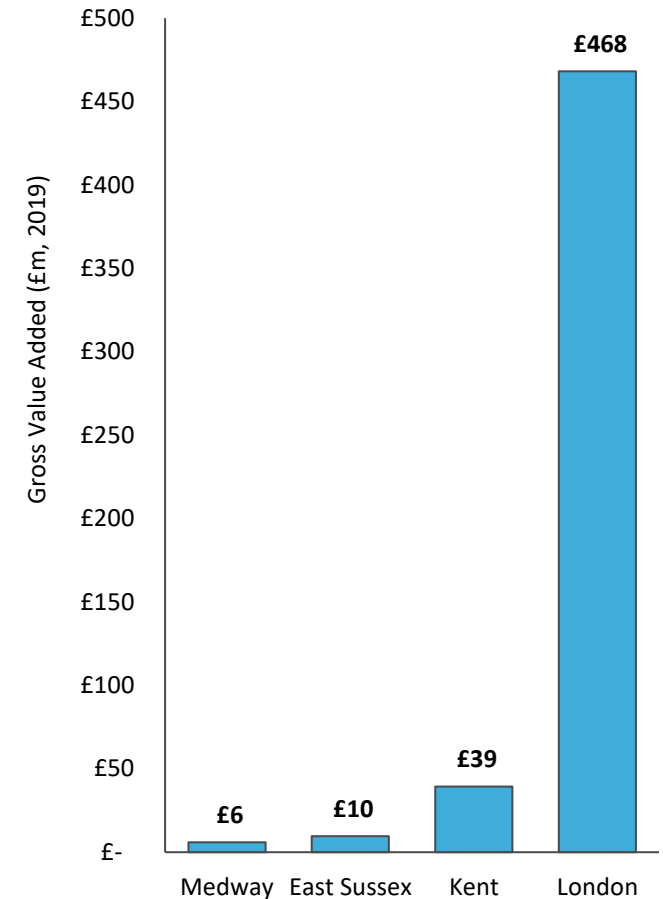
Where do people work?
Parliamentary constituencies in England and Wales scaled by the size of the workplace population, 2011

Boundaries are distorted according to size of workplace population.
Constituencies are coloured according to % difference in workday and resident population.



© Crown copyright. All rights reserved. House of Commons Library (OS) 100040654 and (OSNI) 2085 (2014)

Figure 2.20: GVA (£m, ONS, 2019)

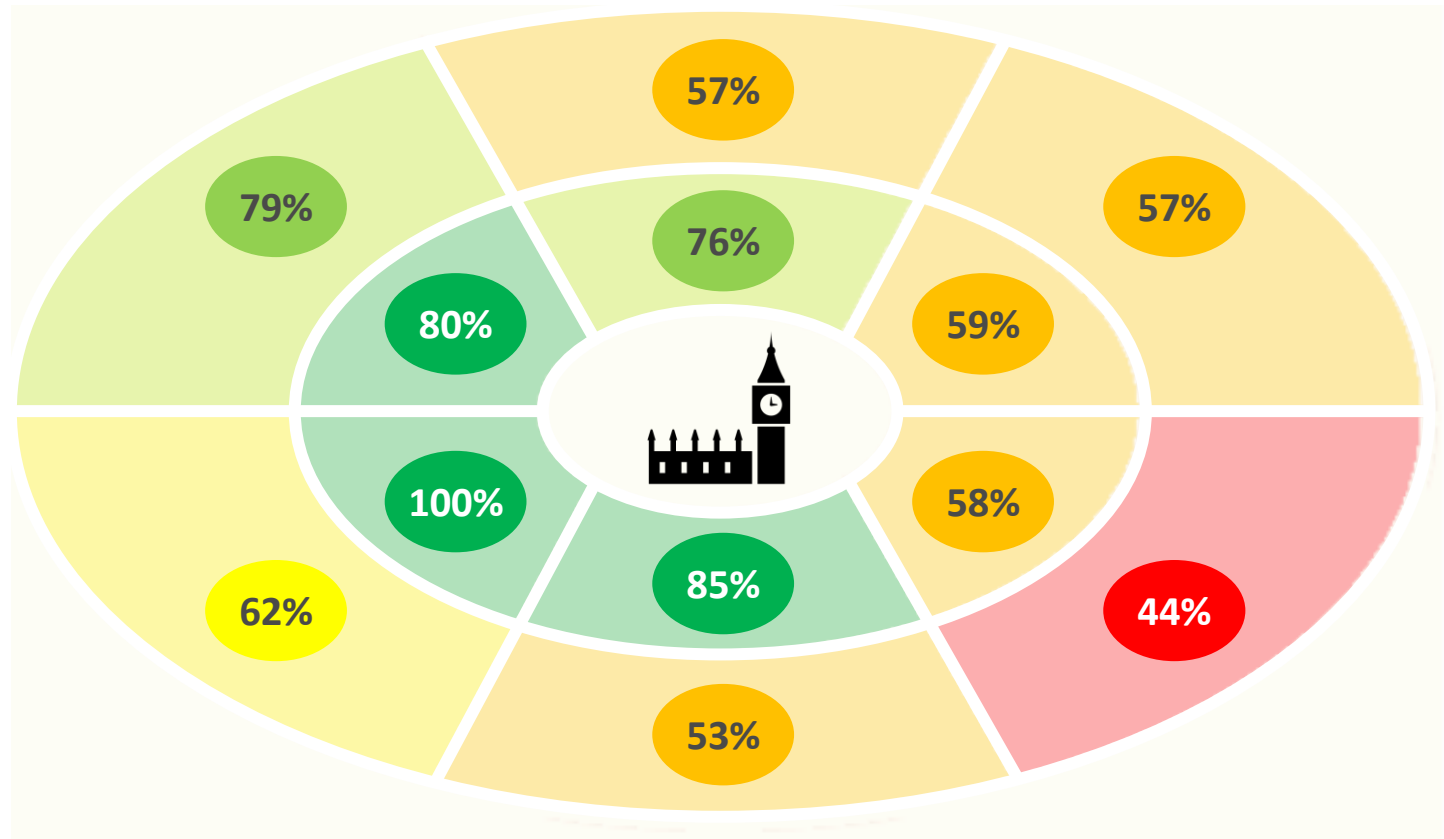


Sources: <https://commonslibrary.parliament.uk/who-works-in-your-constituency-a-new-interactive-tool-for-exploring-workplace-populations/> and <https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/revisionstrianglesregionalgrossvalueaddedbalancedincurrentbasicprices>

The Kent, Medway and East Sussex Area has weak socioeconomic outcomes compared to other parts of South East England.

Socioeconomic indicators such as GVA per capita (see **Figure 2.21**), education, deprivation, and unemployment are relatively low in this area. Districts and boroughs furthest east and further away from London generally have weaker socioeconomic outcomes than those located further west and closer to the Capital. There are pockets of high deprivation closer to London (e.g. North East Kent) and vice versa (e.g. Wye), but the broad trend is clear. TfSE's Economic Connectivity Review identified several clusters of high-value/high-growth industrial sectors in the South East, which offer a route to greater prosperity. However, very few of these clusters were identified in Kent, Medway, and Coastal East Sussex. The reasons behind the area's current performance are complex and transport is just one of many factors. That said, many stakeholders believe improving transport connectivity is needed to enable the most deprived areas to develop.

Figure 2.21: Average GVA per capita around the South East, where South West/Inner = 100



Source: Steer, ONS GVA per capita data
 South West / Inner Orbital zone = 100%
 Icon Credit: Pham Duy Phuong Hung

10 Rural communities are being left behind in digital, active, and public transport connectivity

Rural communities in the Kent, Medway and East Sussex Area have significantly poorer access to public transport, Mobility as a Service providers, and high-speed broadband compared to urban areas (See Figure 2.23).

This means it will be harder for rural communities to:

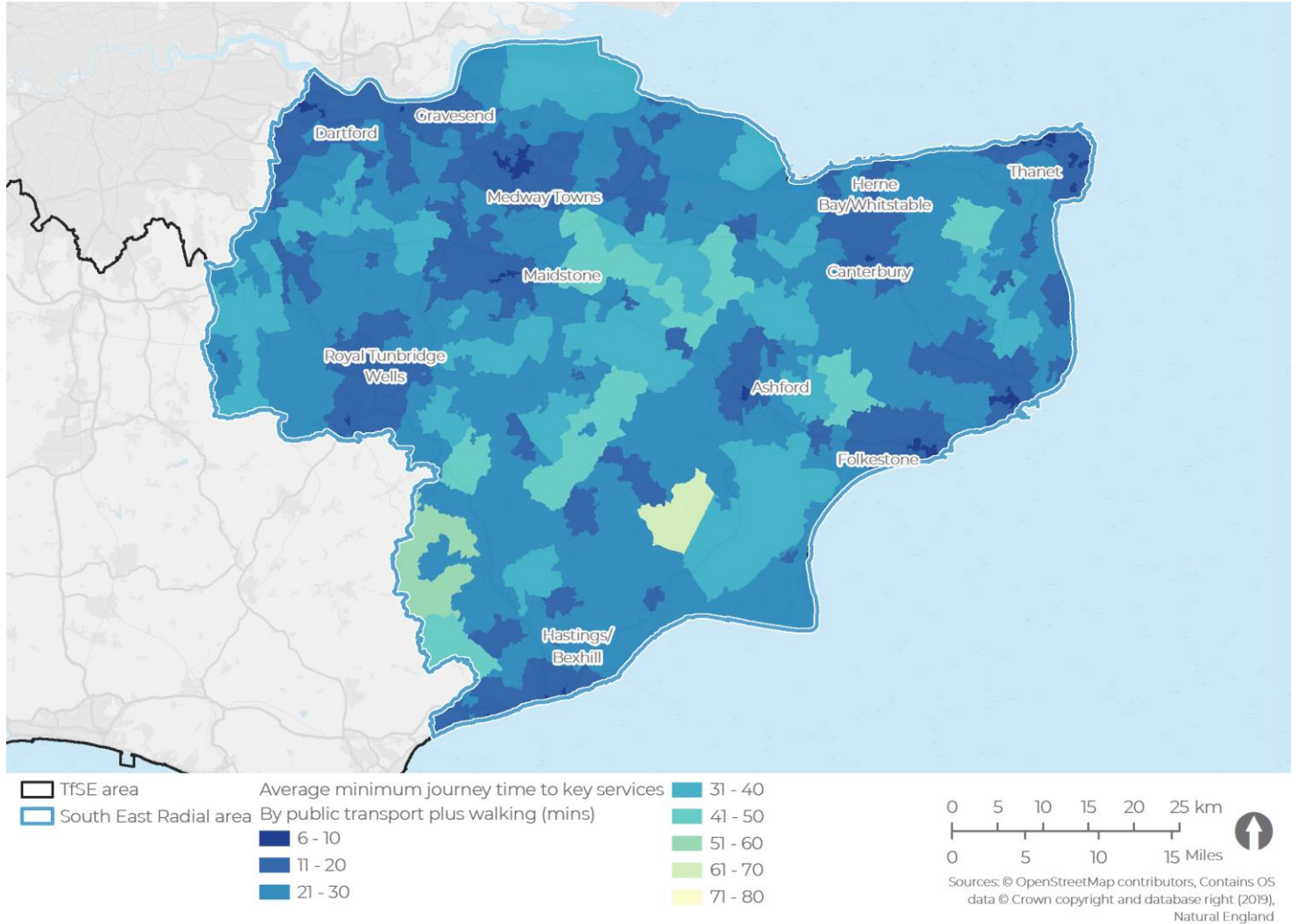
- work remotely;
- access future mobility technologies;
- access emerging Mobility as a Service services;
- access public transport networks; and
- attract businesses that rely on technology and/or public transport.

This promotes a high reliance on private motoring in rural communities.

While many rural areas are prosperous, there are pockets of high levels of deprivation in rural parts of the Kent, Medway and East Sussex Area.

There is also a risk that inequality in access to broadband will result in wider inequality in socioeconomic outcomes.

Figure 2.23: Public Transport connectivity



11 Dover is highly constrained by its small footprint and access

The Port of Dover is (or, at least pre-COVID-19, was) the busiest Roll-On Roll-Off port in the world and the busiest passenger port in Europe. However, it is constrained by its relatively small footprint.

Figure 2.24 illustrates the constraints in available land for Dover to 1) provide adequate highway and railway access/interchange and 2) expand port operations. The Port of Calais, on the other hand, benefits from more space that can be used for transport access and expansion. For example, highway access to the Port of Calais is provided by a grade separated, motorway standard expressway that entirely avoids the town.

Clearly, the geographic context of Dover is very different to Calais. However, it must be acknowledged that Dover faces constraints that present challenges for the future of the South East's transport network and economy.

Figure 2.24: Footprint of Ports of Dover and Calais (same scale)



Image sources: <https://www.openstreetmap.com>, TfSE (Dover), <https://www.portboulognecalais.fr/en/who-we-are>

12 The Channel Ports (Dover/Folkestone) are too reliant on one highway corridor

At present, there is only one motorway for the full route 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 (as shown in **Figure 2.25**).

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, including:

- single carriageway sections between Dover and Canterbury;
- constraints at junctions such as Brenley Corner and Blue Bell Hill; and
- the Dartford Crossing

Kent and Highways England wish to see a bifurcation strategy implemented that would deliver two high quality corridors to the Channel Ports. This would significantly strengthen resilience and connectivity.

Figure 2.25: Key Highways in Kent, Medway and East Sussex

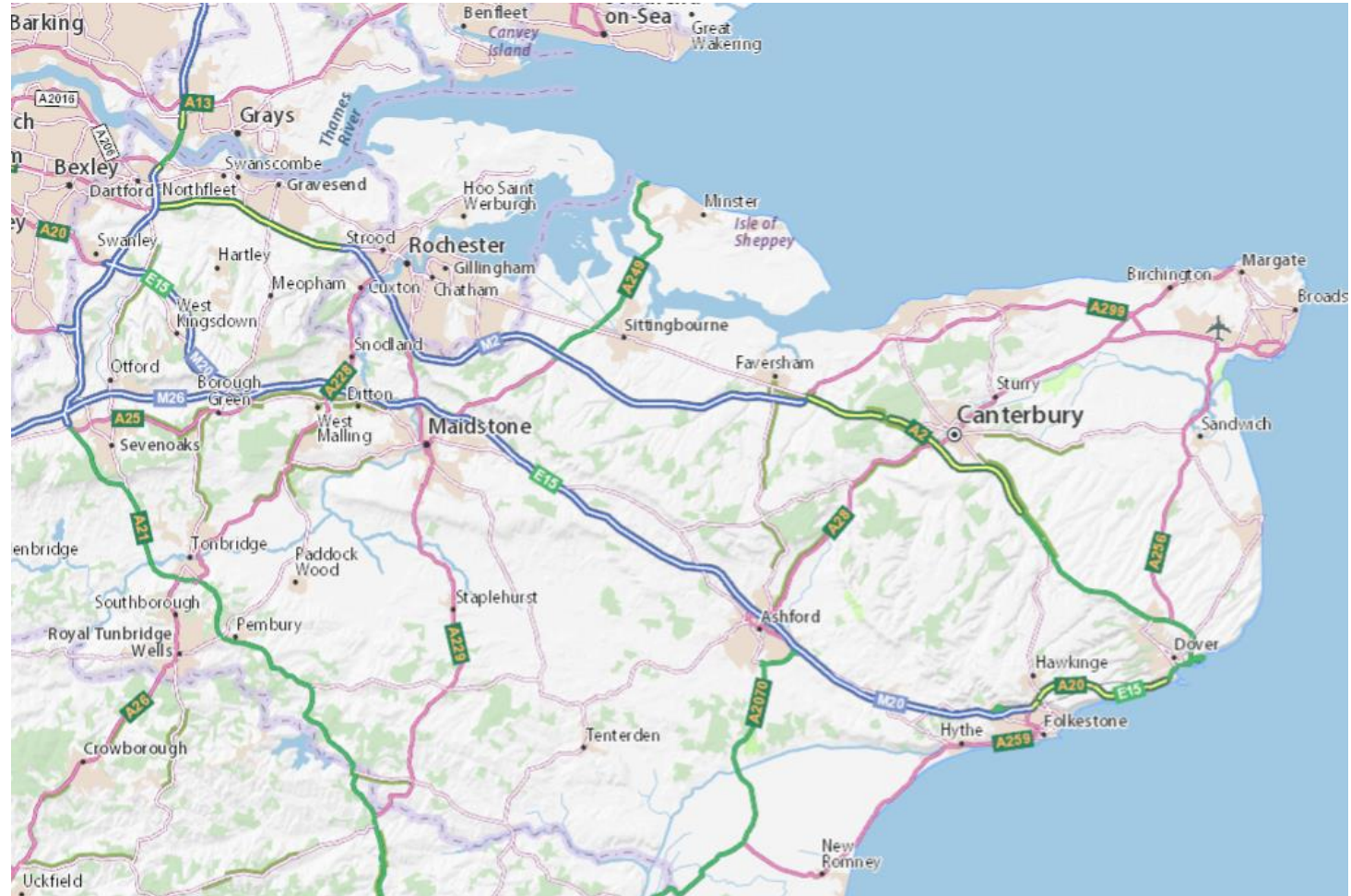


Image source: <https://www.viamichelin.co.uk/>

Disruption at the Channel Ports is regularly in the news and its impact often ‘spill overs’ across Kent.

The causes of this disruption are diverse – weather, industrial action, operator performance issues – and could increase as the UK-EU trading relationship changes.

Government and resilience partners have developed two broad responses to disruption at the Channel ports:

- **Operation Stack**, where the M20 is closed to normal traffic (between different sections depending on the severity of disruption) and the motorway is used to park HGVs; and
- **Operation Brock**, which instigates a contraflow system on the westbound carriageway of the M20 (see right) and sets aside the eastbound carriageway for HGV parking.

Operational Brock (shown in **Figure 2.26**) can take several days to implement, whereas Stack can be rolled much faster.

Many stakeholders view current resilience arrangements as unsustainable and wish to see a better solution delivered in Kent.

Figure 2.26: Operation Brock on the M20



Image source: PA via Kent Live <https://www.kentlive.news/news/kent-news/what-operation-brock-7-questions-3473722>

14 There are significant highway congestion, safety, and air quality issues in multiple places

These hotspots can significantly blight an area's economy, environment, and quality of life for residents, businesses, and visitors.

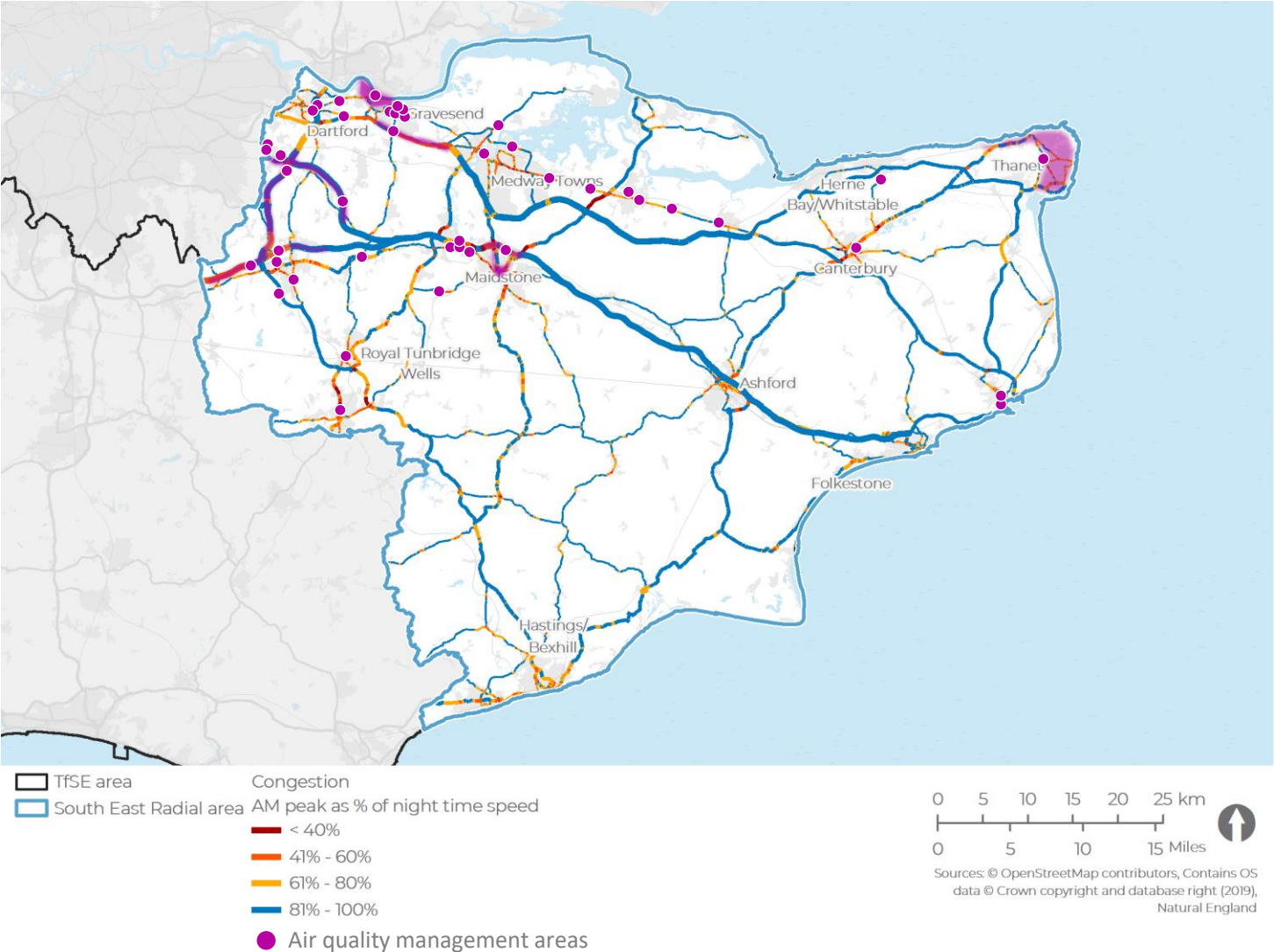
Figure 2.27 shows congestion and air quality hotspots on the highway network in the Kent, Medway and East Sussex Area. It should be noted this data reflects pre-COVID-19 data and may not be representative of future travel patterns.

Congestion, road safety, and air quality hotspots tend to arise at the same location. This is often where highway infrastructure is unable to accommodate all the traffic demand placed upon it.

In the Kent, Medway and East Sussex Area, this is observed at major junctions, town and city centres, and on some sections of the Strategic and Major Road networks.

Congestion undermines the efficiency of the transport network and the economy, while poor safety and air quality harms human health. These hotspots are often hostile environments for vulnerable road users and can act to deter people from choosing to walk or cycle in these areas.

Figure 2.27: Congestion and Air Quality 'Hot Spots' in Kent, Medway and East Sussex



Rail services serving communities in North East Kent and the East Sussex Coast are objectively slower than services in other parts of the area.

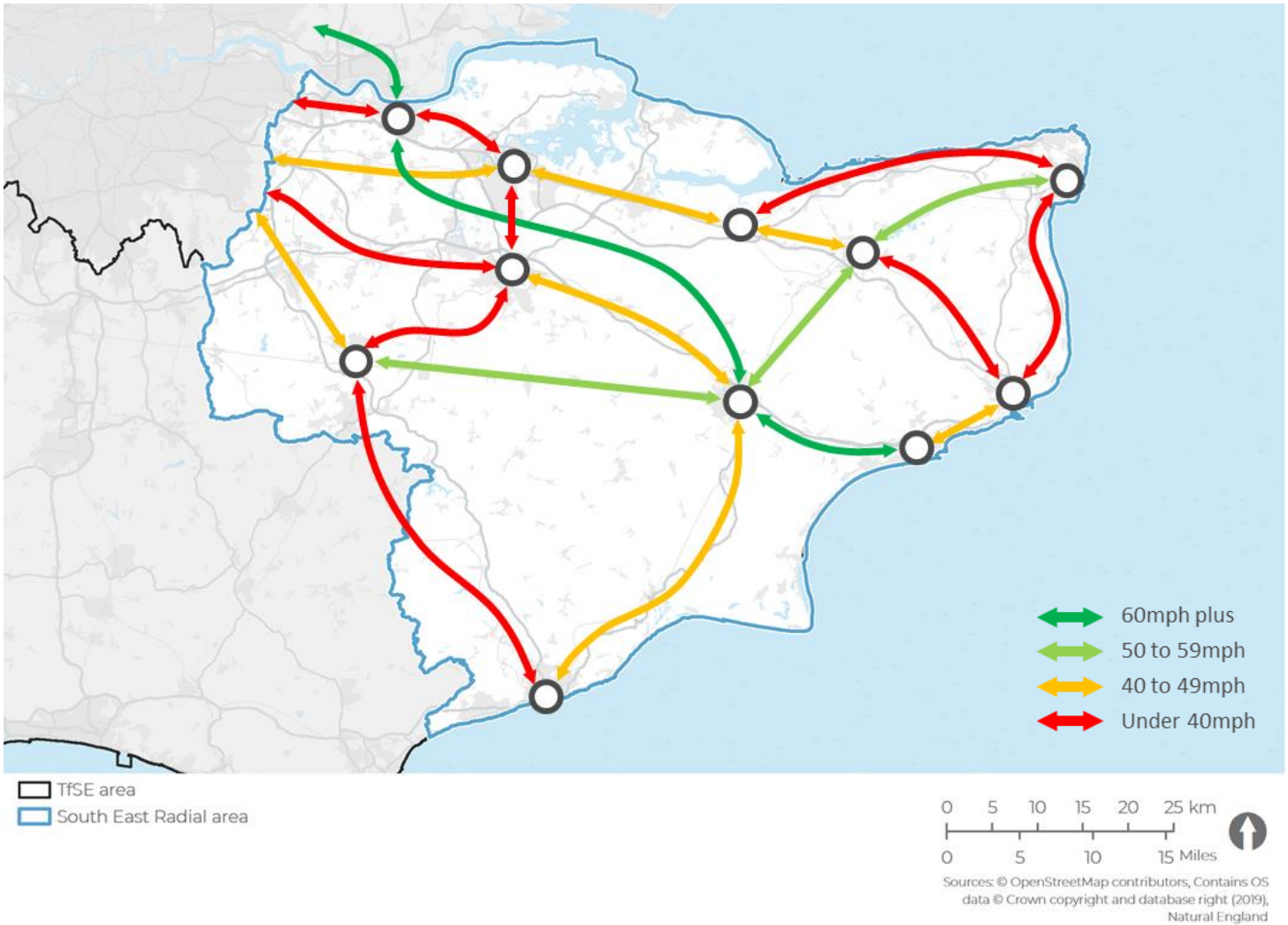
The differences in connectivity provided is especially stark when compared to the excellent connectivity provided by the High Speed 1 (HS1) railway.

The slower speeds off HS1 Line (shown in **Figure 2.28**) reflect the alignment of the track, signalling arrangements, and the passenger rail service calling pattern.

The difference in rail connectivity means places like Thanet and Hastings/Bexhill need to ‘work harder’ to attract investment compared to better connected Major Economic Hubs such as Ashford.

This may explain why these areas generally have weaker socioeconomic outcomes (such as higher levels of deprivation) than places closer to London.

Figure 2.28: Average Rail Speeds on selected sections of the Railway Network



It is getting harder to maintain an old railway that is embedded in a coastal and chalky landscape, especially as the climate changes.

Some of the oldest railways in the world are located in the Kent, Medway and East Sussex Area. Many were built at a time when trains operated at lower speeds and therefore follow alignments that do not work well for modern needs. They were also among the first to be electrified (to third rail).

Much of the railway is built in chalk and clay cuttings/tunnels, which bring their own challenges (notably in poor weather).

All the above presents resilience challenges for the railway. There are regular issues with embankment and cutting subsidence in the Weald and along the Kent coast (see **Figure 2.29**). Some railways run through areas prone to coastal and inland flooding. The third rail limits the railway's resilience to ice and snow. Network Rail are expecting to need to invest millions in the railway just to 'stand still'. There is also a risk that some links – such as at Folkestone Warren – could become unviable if sea levels rise.

Figure 2.29: Folkestone Warren



Source: Network Rail, <https://www.networkrail.co.uk/stories/the-great-fall-historic-landslip-images-resurface/>

17 There are capability and capacity challenges on parts of the rail network

While the Kent, Medway and East Sussex Area’s railway benefits from multiple routes to London, there are some bottlenecks holding back growth.

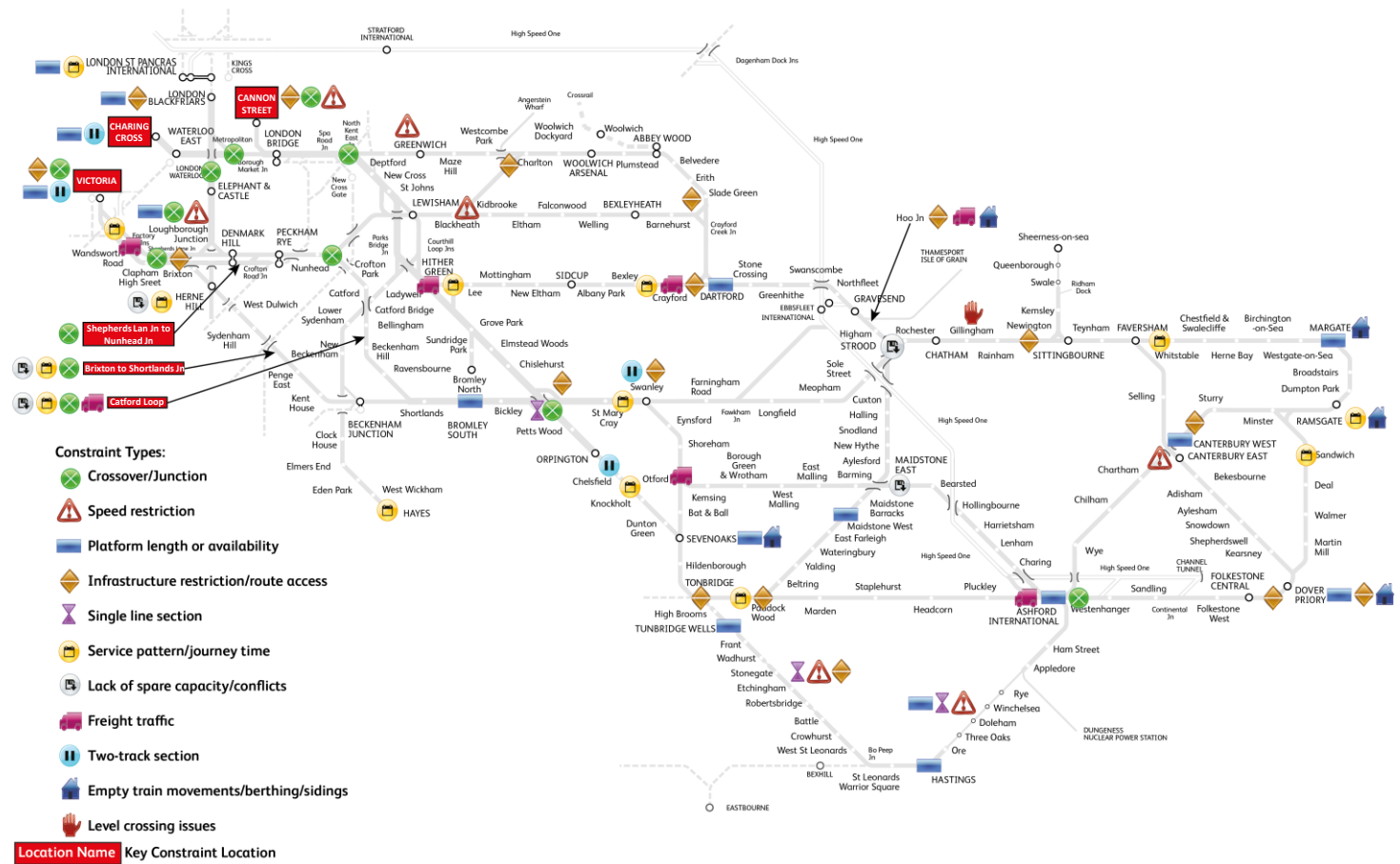
Thanks to the way the railway developed (under the direction of two companies for many years), there are multiple routes to London. High Speed 1, which fully opened in 2007, provides an additional route to London and beyond.

That said, there are some bottlenecks that undermine operational performance and make it difficult to address (pre-COVID-19) crowding challenges. These include:

- most (if not all) London Terminals;
- several approaches to London Terminals (e.g. twin track section from Bromley South to Brixton);
- two track sections between Orpington and Tonbridge;
- Rochester Bridge Junction;
- flat junctions around Lewisham; and
- Dartford station and junctions.

Further detail about these constraints is provided in **Figure 2.30**.

Figure 2.30: Capability and capacity constraints on Network Rail’s South East Route



Source: Network Rail

18 The quality of mass transit services is variable and bus patronage is relatively low

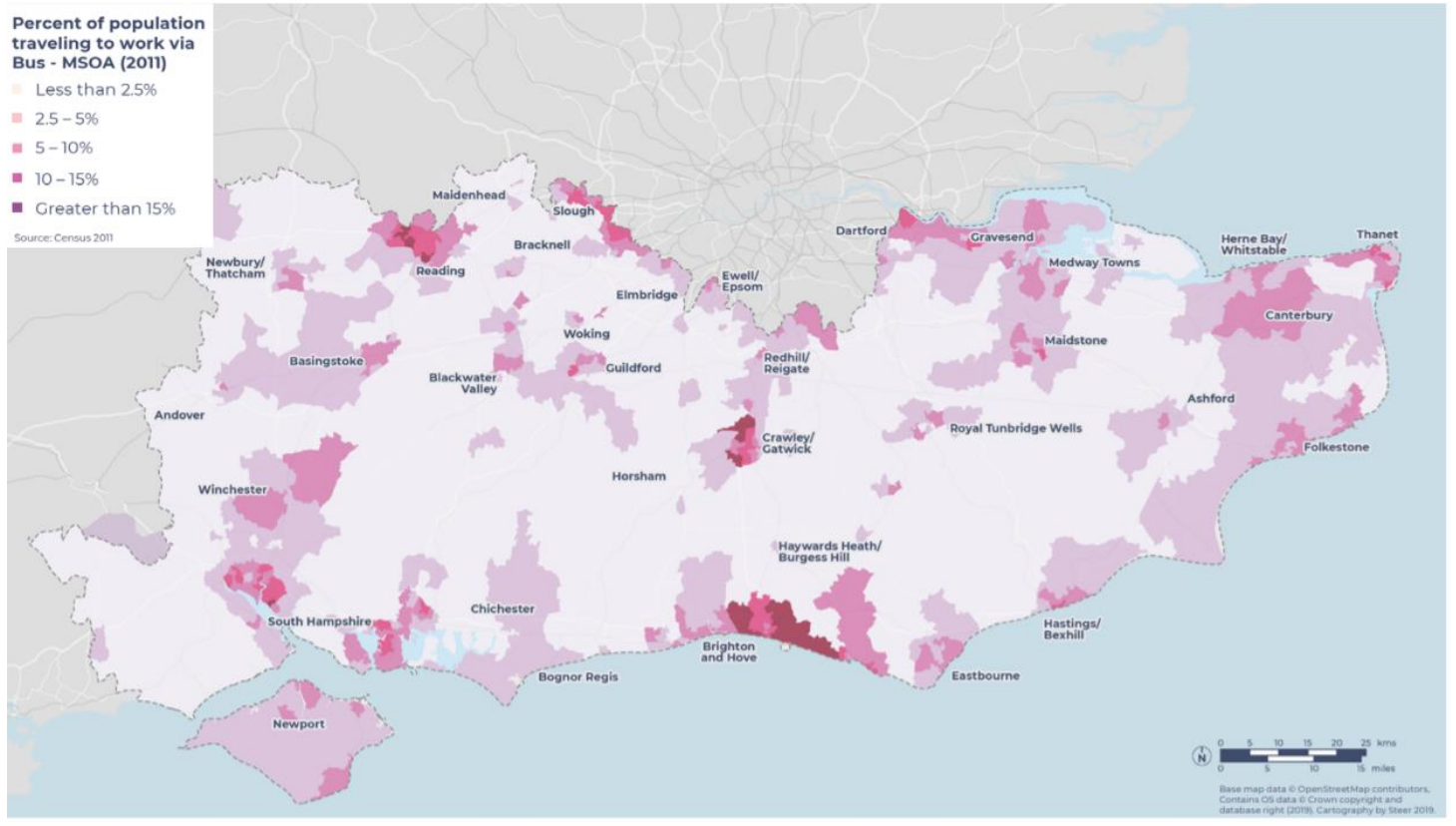
Bus patronage is low and in many areas is declining.

Figure 2.31 shows the percentage of the population travelling to work by bus at the time of the 2011 census. Figure 2.8 (see Part 2b) shows recent trends in bus patronage. In East Sussex, Kent, and Surrey, bus use declined by more than 10% over the period 2009/10 – 2019/20. In contrast, bus use in Brighton and Hove has increased by 19% over the same period.

This evidence points to a bus industry that – outside Brighton and Hove – serves few Travel To Work journeys and is in decline. Bus patronage is particularly low in rural areas as well as in fast growing Major Economic Hubs such as Ashford.

The recent successful performance of the bus networks serving, Crawley, Reading, and Brighton and Hove bus networks show the opportunity for bus in the Kent, Medway and East Sussex Area.

Figure 2.31: Bus share of Travel To Work flows



19 Public transport integration is weak – both physically, and in terms of the ‘customer journey’

Public transport interchanges, information, and ticketing are not sufficiently coordinated nor adequately integrated, particularly across transport modes

Parts of the South East are included in the London Travelcard area and are included in Transport for London’s contactless travel arrangements.

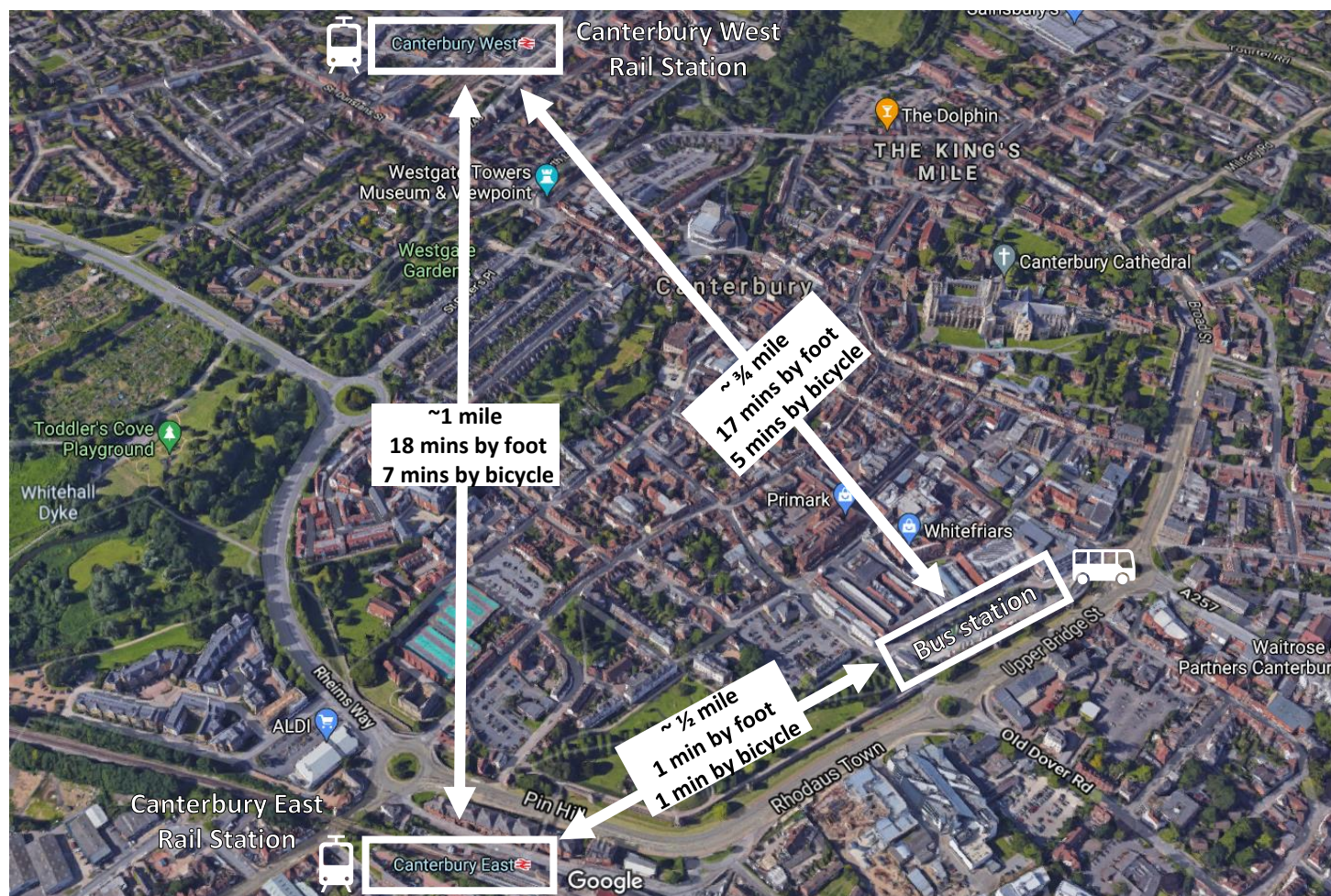
However, outside the London Travelcard area, there are few examples of:

- integrated journey planning tools;
- integrated, multi-modal fares (noting some areas have access to PlusBus);
- zonal fares systems; and/or
- Integrated, multi-modal payment systems.

All the above makes it harder to plan, pay for, and complete multi-modal journeys in the South East.

Additionally, there are several examples of poor physical integration in transport hubs, such as in Maidstone, Strood, and (as shown in **Figure 2.32**) Canterbury.

Figure 2.32: Location and approximate distances between Canterbury’s transport hubs



Stakeholders have cited the price of rail tickets and the complexity of ticketing as a disincentive to travelling by public transport.

The perception that rail fares are high means it is harder to persuade people to change from the car to rail. This is particularly the case for families and for those having to travel via London (even if their journey is not to/from London).

While Season Tickets offer better value for money (if they are used in full), headline figures of £6k+ annual season tickets is off-putting to many and may disincentivise people from moving to the South East.

The complexity of the tickets offered also puts people off using the railway. As an example: a myriad of different fares are offered between Ashford and London. The Williams Rail Review has identified the complexity of fares as an issue.

It is acknowledged that this is a complex topic and there are examples of low fares available during off peak periods, particularly on longer distance journeys (which do not make up a significant portion of journeys in the South East).

Figure 2.33: Real terms increase in costs of public transport and motoring

Retail Prices Index (RPI): Bus and coach fares, rail fares and motoring expenditure, 1987–2019



Source: DfT, "Bus Back Better" (2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/969205/DfT-Bus-Back-Better-national-bus-strategy-for-England.pdf

While there has been good progress in improving accessibility in recent years, significant issues remain.

Accessibility – in the broadest terms – is a key barrier to many users. The Williams Rail Review identified this is a key challenge for the rail industry. The DfT’s ‘Access for all’ programme has unlocked some investment in some rail stations.

However, as **Figure 2.34** shows, there is a need for more progress. Other examples where improvements should be considered include:

- improving the accessibility of bus fleets (with low floors/ramp features) and rail rolling stock;
- Improving accessibility of bus stops;
- making it easier to plan, buy, and use public transport services;
- improving access to public transport for passengers with hearing, vision, and/or cognitive needs;
- improving walking and cycling facilities (many people with additional needs rely on cycles for their mobility); and
- making public spaces (e.g. town centres) more accessible.

Figure 2.34: Accessibility at Train Stations (% stations offering fully accessible in Jan 2019)

	Accessible ticket machines	Accessible ticket office	Train ramp access	National Key toilets	Step free access	Mobility set down
Great Britain	53%	21%	73%	18%	61%	28%
East of England	80%	17%	73%	33%	72%	23%
East Midlands	39%	17%	41%	20%	77%	16%
London	87%	33%	60%	24%	44%	24%
North East	24%	13%	98%	13%	84%	47%
North West	16%	18%	96%	8%	63%	17%
South East	89%	24%	79%	32%	56%	46%
South West	51%	15%	74%	22%	57%	60%
West Midlands	37%	16%	82%	25%	67%	33%
Yorkshire and the Humber	24%	8%	99%	8%	67%	34%
Scotland	40%	27%	35%	4%	51%	10%
Wales	37%	18%	94%	10%	79%	17%

Key

Lowest proportion of stations **Highest proportion of stations**

Data from National Rail Enquiries, Knowledgebase XML API, accessed 24 January 2019

Source: House of Commons Library (2019) <https://commonslibrary.parliament.uk/how-accessible-are-britains-railway-stations/>

22 Cycle participation is relatively low, particularly in North Kent.

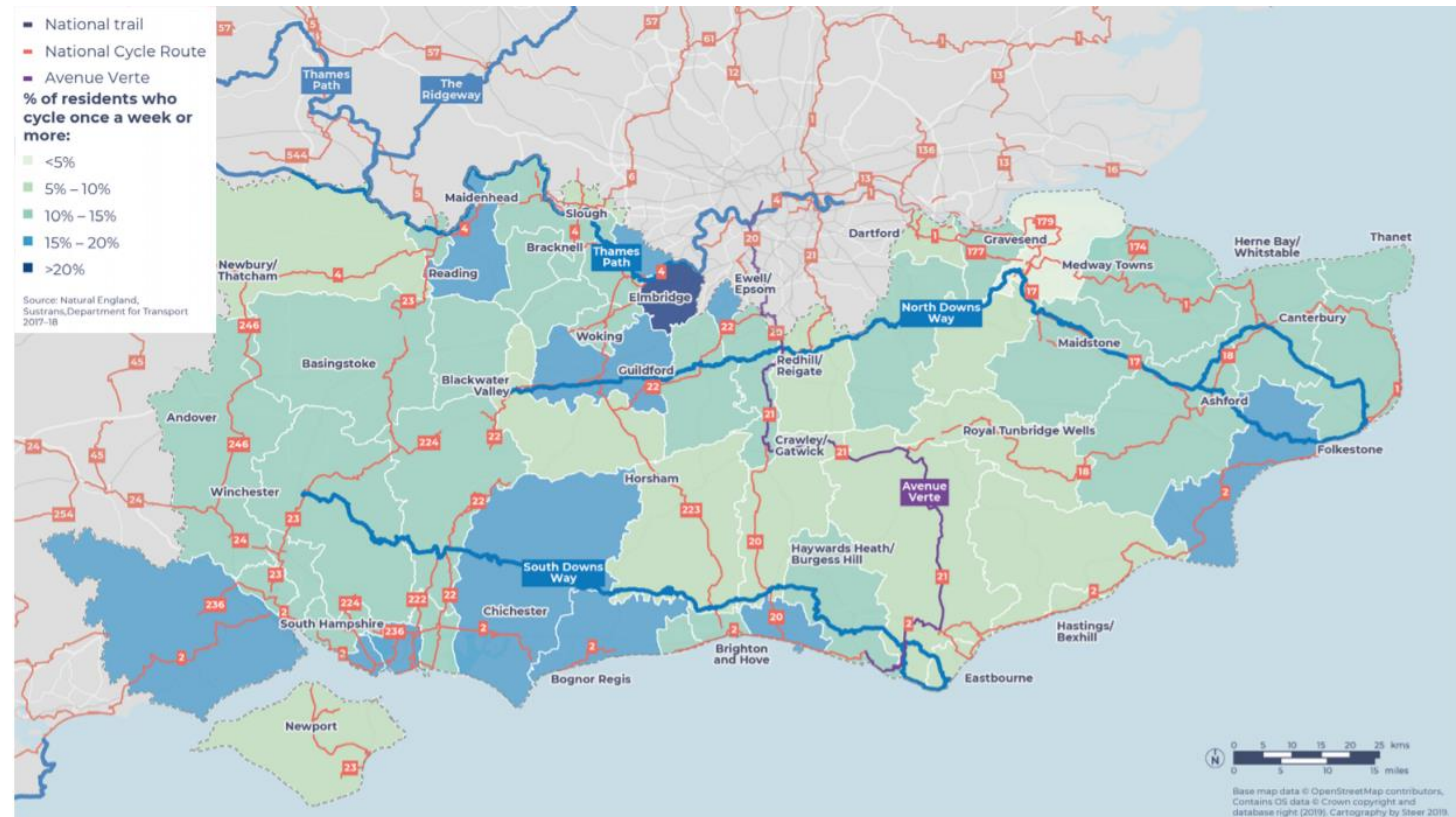
Cycle participation – defined in this case as the percentage of residents who cycle at least once a week – is lower in the Kent, Medway and East Sussex Area than other areas of the South East.

Figure 2.35, which was published in TfSE's Transport Strategy for the South East in 2021, shows low (and variable) levels of cycling participation across the South East. Cycling participation is especially low in Medway, Dartford, and several districts in the Weald area. The TfSE strategy also presents data showing that fewer than 1 in 5 residents cycle once or more a week. Travel To Work data also shows cycling has a low mode share, particularly outside Brighton and Hove.

Every Local Transport Authority on this corridor wants to see a step change in cycling participation in their areas.

Furthermore, improving cycling infrastructure is seen as an enabler for new technologies such as electric bikes/scooters. A lack of infrastructure could be holding the region back from the opportunities these technologies offer.

Figure 2.35: Cycle participation and national/international cycle routes in the South East



The existing cycle network is not at a consistent standard and does not support wider cycling participation, and there are strategic gaps in the parts of the area's cycle network.

TfSE analysis has shown a lower proportion of residents in the South East live close to the National Cycle Network than residents in neighbouring regions. This is a metric that many stakeholders wish to see improve.

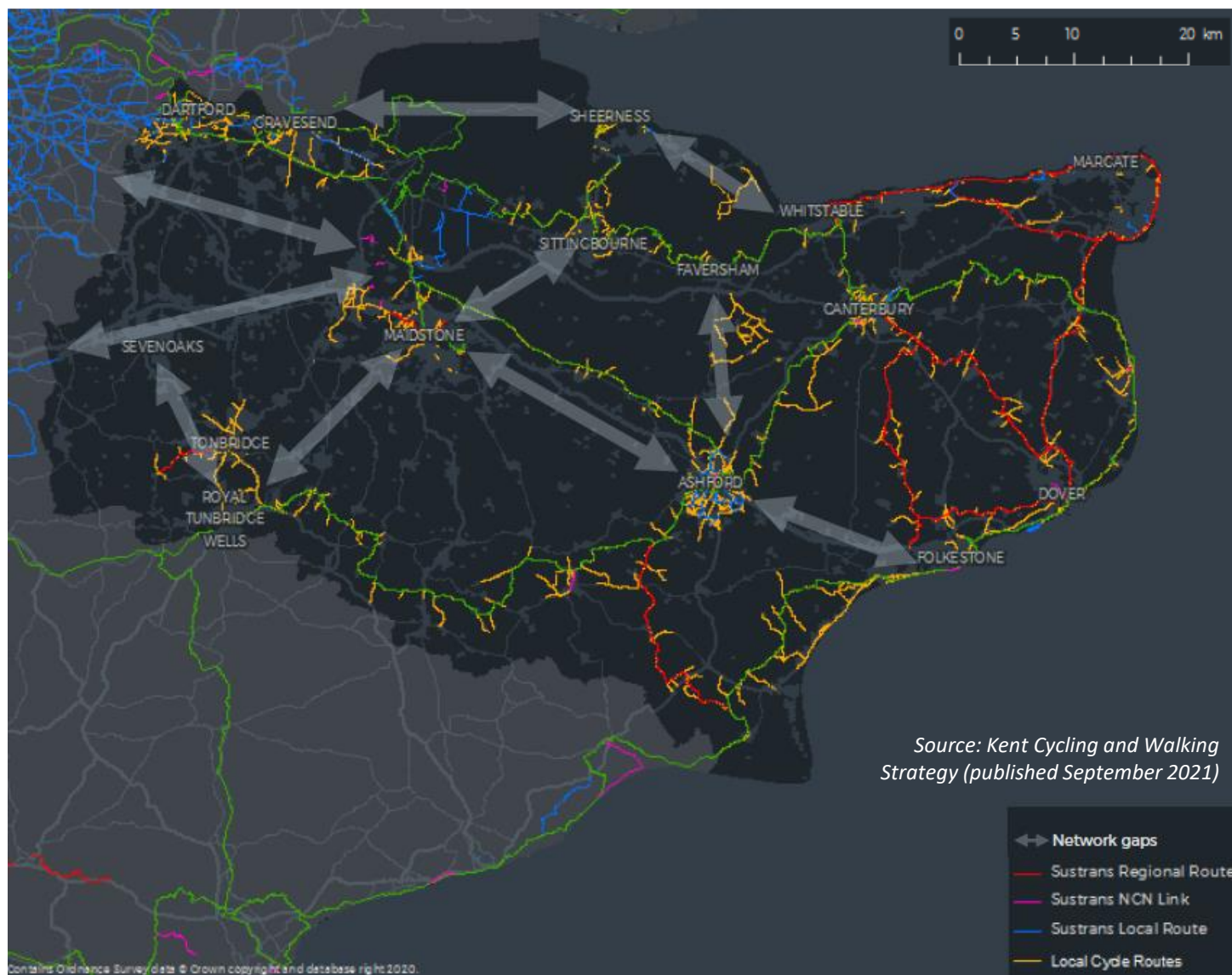
The Kent, Medway and East Sussex Area is a popular area for leisure cycling – particularly in and around the North Downs.

Urban cycle routes are particularly variable and often do not connect the right places together. For example, the cycleways in Medway avoid Gillingham and Rainham town centres.

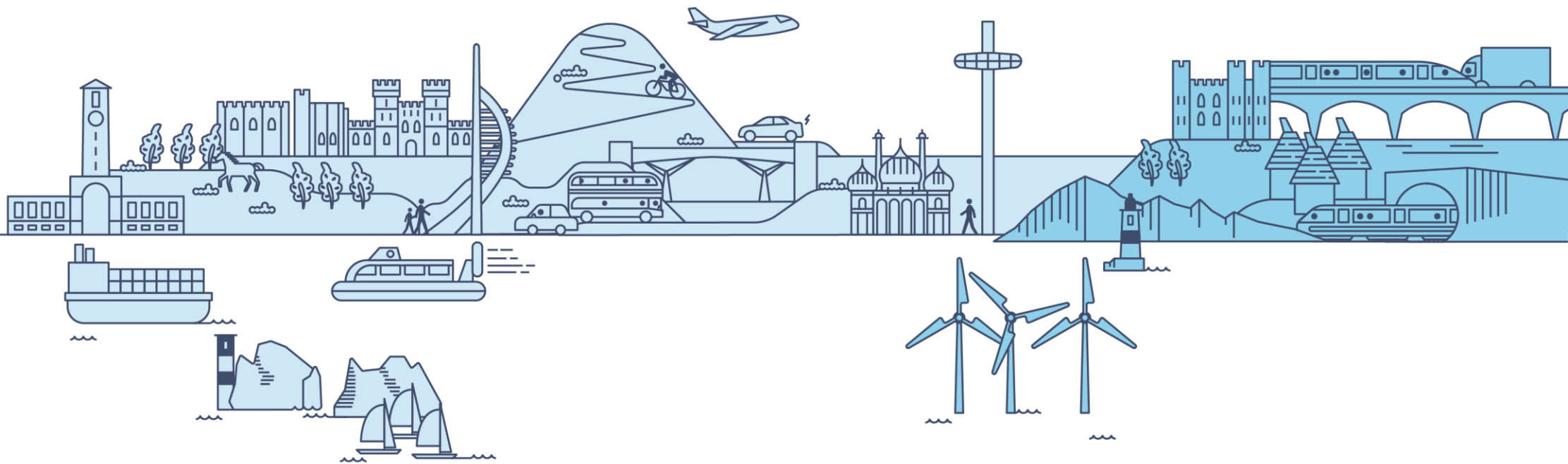
There are notable gaps in longer distance cycle routes, as identified in Kent's (recently published) cycling strategy and shown in **Figure 2.36**.

There are similar gaps in the East Sussex cycling network (e.g. Royal Tunbridge Wells to Hastings).

Figure 2.36: Kent and Medway Cycle Network (and strategic gaps)



Source: Kent Cycling and Walking Strategy (published September 2021)



Part 2c

Baseline

Introduction

Baseline and Business As Usual

In 2018, TfSE commissioned Steer to develop a model to test the impact of the scenarios Created to support the development of for Transport Strategy for South East England.

This model, known as the South East Economy and Land Use Model (SEELUM), is a transport and land use model that simulates the interaction of transport, people, employers and land use over periods of time.

This model has been used to establish a baseline for socioeconomic, environmental, and transport indicators 2018 to 2050. The baseline forecasts of population and employment growth used by SEELUM were taken from the Department for Transport's National Trip End Model (NTEM).

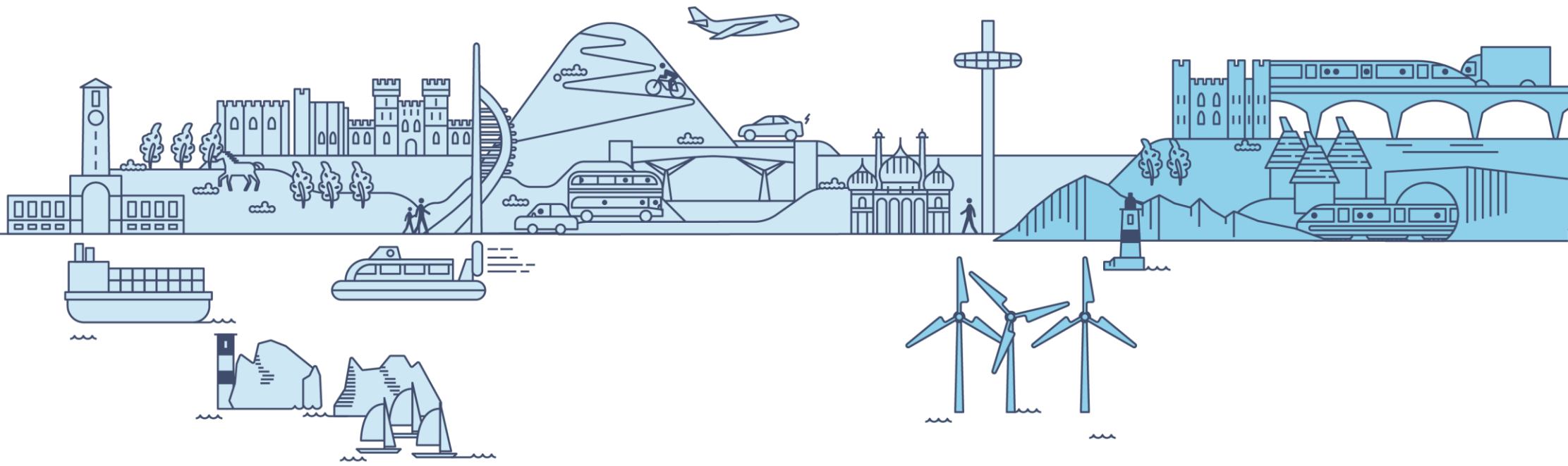
To stimulate and accommodate this growth, SEELUM was supplied with proportional increases in the land available for housing and commercial use in each zone, equal to the proportional growth implied by NTEM. The new land is assumed to become available linearly from 2018 to 2050.

Table 2.1: Baseline projections in SEELUM for Kent, Medway and East Sussex Coast Area

Metric	Baseline (2018)	Business As Usual (2050)	Change (%)
Socioeconomic metrics			
Population	2,293,600	2,597,965	13.3%
Employment	870,138	969,474	11.4%
GVA	£39,641,371,470	£79,006,033,530	99.3%
Transport metrics			
Car trips	4,366,441	5,263,831	20.6%
Rail trips	226,992	290,940	28.2%
Bus trips	279,562	343,428	22.8%
Active travel trips	1,109,479	976,751	(12.0%)

All outputs of the modelling of Packages of Interventions included in this study are presented as comparisons against the Business As Usual metrics for the year 2050, as presented in **Table 2.1** above. In some cases, outputs are also presented for 2022.

Further information about how SEELUM was developed and used to model Packages of Interventions for this study is provided in Part 3 (Economic Dimension).



Part 2d

Strategic Vision and Objectives

Vision

TfSE has published a Transport Strategy for the South East that sets a bold vision for 2050. The Kent, Medway and East Sussex Study Working Group and TfSE have also agreed a Vision for the Kent, Medway and East Sussex Area. These are set out below.

TfSE Vision Statement

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.

Kent, Medway and East Sussex Vision Statement

Kent, Medway and East Sussex will develop a sustainable, prosperous, balanced economy to provide opportunities for its residents, businesses, and visitors to thrive.

The area's economy will be more resilient to the economic shocks and will leverage the innovation and talents of Kent, Medway and East Sussex's people to develop successful businesses.

The Kent, Medway and East Sussex Area's role as the gateway to Europe will continue to evolve and prosper as the EU and UK adapt to a new trade relationship.

The transport networks supporting **Kent, Medway and East Sussex Area** will be reliable, resilient, well connected, and accessible. They will be aggressively de-carbonised to deliver a net-zero carbon economy by 2050. They will significantly reduce the impact of delays to channel crossing movements on the local economy, communities, and environment.

The communities of Kent, Medway and East Sussex will be planned provide affordable housing for all and will be designed to promote sustainable travel outcomes.

Objectives

A high performing, multi-modal transport system will ensure this study helps deliver the following six objectives:

Economy

The Kent, Medway and East Sussex Area'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 (and wider socioeconomic) needs;
- Reducing costs for businesses; and
- Attracting investment in high growth, high value opportunities.

Society

The Kent, Medway and East Sussex Area's transport systems will enable better and more equitable socioeconomic outcomes by:

- 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 and availability of convenient, high quality, active travel and public transport options;
- Ensuring that transport interventions are suitable for all users including the elderly and individuals of reduced mobility and other additional needs;
- Mitigating adverse impacts of transport on human health and welfare; and
- Enabling deprived communities to attract investment and achieve more equitable socioeconomic outcomes.

Natural and Historic Environment

The Kent, Medway and East Sussex Area'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, biodiversity, historic and ecological designations;
- Reducing the impact of transport operations on ecosystem services; and
- Improving and managing public and active transport access to natural, protected, and historic environments.

Objectives

A high performing, multi-modal transport system will ensure this study helps deliver the following six objectives:

Climate Change

The Kent, Medway and East Sussex 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 to non carbon emission energy;
- Improving transport network energy efficiency; and
- Improving transport network resilience to climate events such as flooding, high temperatures, drought and storm events.

Regeneration

The Kent, Medway and East Sussex Area'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

The Kent, Medway and East Sussex Area'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 international gateways and the rest of the UK.

Vision for the Kent, Medway and East Sussex Area

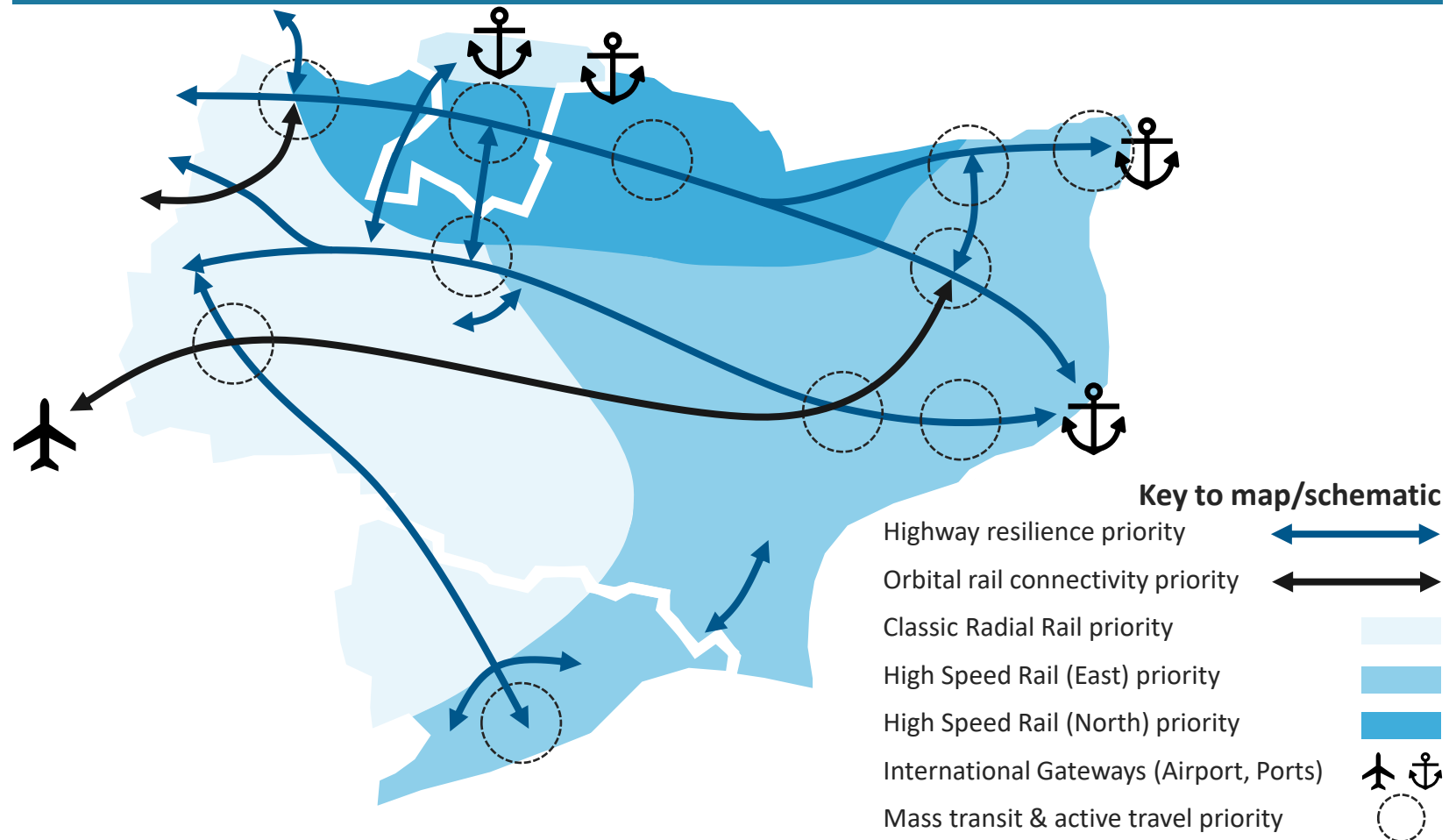
Our vision is to deliver a **better connected, more resilient, better integrated, and more sustainable transport system** for Kent, Medway and East Sussex. This will reduce the isolation of the most deprived communities in our area and contribute to the government’s “Levelling Up” agenda by unlocking opportunities for growth and regeneration. It will strengthen the key corridors that serves some of the UK’s busiest international gateways and provide viable sustainable travel options for all.

Figure 2.37 to the right sets out the priorities for the Kent, Medway and East Sussex Area.

These key elements include:

- Coastal Connectivity
- Growth and Regeneration
- Integration
- Resilience
- Sustainable Travel
- Carbon Reduction

Figure 2.37: Key elements supporting the Kent, Medway and East Sussex Areas Vision



Strategic Themes

Multi Modal Solutions

Transport is too often planned, funded and delivered within modal silos. TfSE and its partners propose a multi modal solution which takes account of complementarities between modes, but also integrates demand management and wider policy measures.

Our vision acknowledges that people do not think about modes of transport that make up their journey, they think about the journey as a whole. Our vision is for a transport network that enables seamless trips: a faster and more reliable strategic network paired with improvements to first mile last mile connectivity.

Our vision is for the current transport network to better serve different people journey purposes and modes. Improvements to the highway network, for instance, will improve car trips but will also enable faster and more frequent mass transit and increased active travel participation.

This vision seeks a move away from modally siloed planning, governance and funding, to a multi modal transport solution.

Climate Change and Sustainability

Transport has a crucial role to play in delivering on environmental, social and economic goals. This vision seeks to address these goals by supporting people to shift to more sustainable modes.

Transport accounts for a more than a quarter of the UK's carbon emissions. With faster, safer and more reliable rail, bus and active travel journeys, our vision seeks to increase the attractiveness of transport modes which have a positive impact on the environment.

Our vision acknowledges issues of deprivation and affordability and promotes sustainable transport interventions to improve connectivity to housing and employment locations.

We have also identified opportunities where transport can stimulate regeneration and placemaking. For instance, we propose moving some strategic highway routes away from town centres, enabling a more people-friendly urban realm to be created and a step change in the quality of place.

The rest of this section sets out the key strategic themes of the Kent, Medway and East Sussex Area vision.

Freight and International Gateways

For both passenger and freight, the Port of Dover is among the busiest in the world, yet there is only one motorway connecting the Port to the M25. This means that the area is vulnerable to significant disruption. TfSE and its partners propose a vision which can accommodate the demand and bring greater transport resilience.

In addition to the route via the M20, connectivity to the M25 and rest of the Great Britain is offered by M2 and A2 corridors. However, this corridor features several sections that fall below the standard offered by the M20. To address these issues our vision includes the Kent Bifurcation strategy, which strengthens the resilience of Channel Port access corridors and improved connectivity for coastal areas.

This will help to optimise the benefits and mitigate the risks to the transport network presented by the Lower Thames Crossing. Complementing these highway interventions are proposals for the greater use of HS1 for rail freight and expanding the destinations that can be reached in continental Europe.

Strategic Themes

World Class Mass Transit Systems

The Kent, Medway and East Sussex Area is home to urban conurbations of sufficient size and density to justify world class mass transit systems. Our vision will deliver the quality of provision to stimulate a step change in sustainable transport mode share.

We will build on the success of the existing Fastrack system centred around Dartford and Ebbsfleet, proposing greater levels of segregation and bus priority, improved journey times, higher quality buses and better network integration. The network would be integrated with railway stations and strategic highway routes to enable seamless journeys from origin to destination.

Where segregated MRT is not appropriate, our vision is for increased inter-urban bus frequencies and bus priority at key junctions and pinchpoints to safeguard journey time reliability.

Complementing land-based Mass Transit water transport will be improved with the reinstatement of Thames, Medway and Swale ferries connecting harder to reach parts of Medway and Kent Thameside.

Regeneration and Growth

The Kent, Medway and East Sussex Area is expected to accommodate significant housing growth, particularly in North West Kent, Ashford, Thanet, and Hastings. Our vision will ensure residents of new developments can access employment, affordable housing and services.

Development growth will be accommodated through an increase in transport provision across multiple modes. In North West Kent, Ashford, Thanet, and the Hastings this will include:

- Connection into Mass Transit Networks facilitating fast and reliable journeys to neighbouring towns and areas of employment;
- New link roads efficiently connecting growth sites into neighbouring centre and the strategic road network; and
- New rail links opening up sites for sustainable development and regeneration

This multi modal approach will support better place-making and creation of new sustainable communities

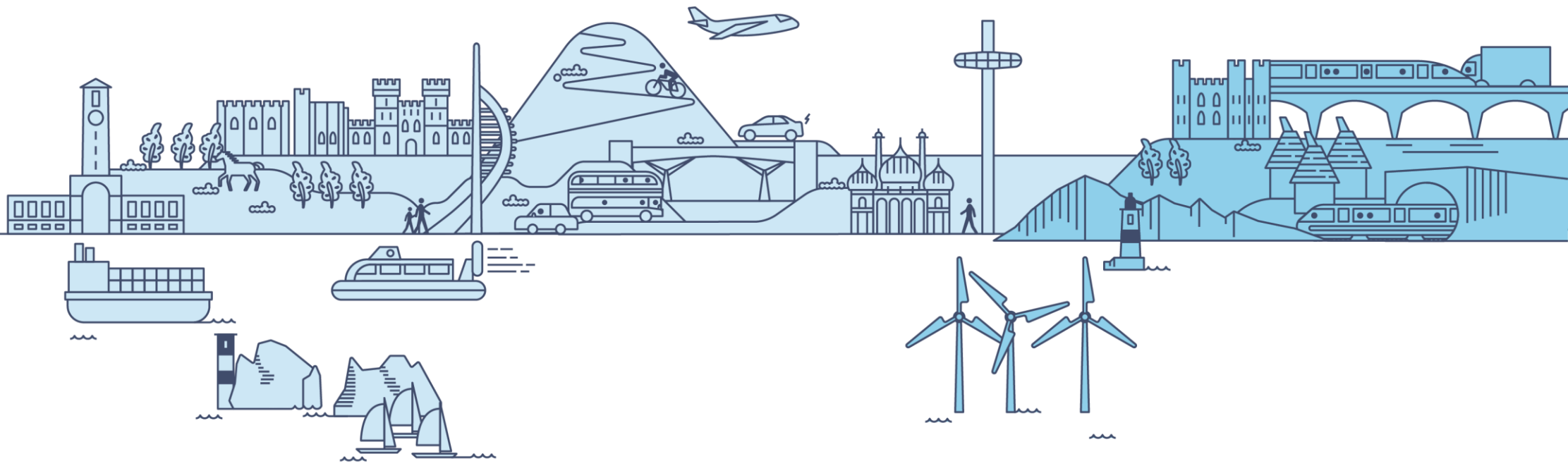
Coastal Communities and Levelling Up

The Kent, Medway and East Sussex Area has poorer socioeconomic outcomes than any other part of South East England. Our vision seeks to improve these outcomes, levelling up some of the most deprived communities in our area.

These indicators are often most pronounced in coastal and estuarine parts of the area and there are many reasons why they 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.

Our vision includes making the most of capacity on HS1 to deliver step-change journey time improvements to coastal communities in Medway, Swale, Canterbury, Thanet and Hastings and Eastbourne ensuring they are as well served as other parts of the area.

These improvements will be complemented by new and improved MRT systems in Dartford, Medway and Dover, well integrated with the railway network and supporting seamless urban and inter urban trips.



Part 2e

Packages of Interventions

Combined Approach to Package Development

A Top Down and Bottom Up View

TfSE has worked with key stakeholders and technical advisors to develop a set of coherent multi-modal Packages that, together, are designed to deliver TfSE's vision and objectives for the Kent, Medway and East Sussex Area.

These Packages have been developed through workshops, discussions, and careful analysis of results of the assessment of the long list of multi-modal interventions described earlier.

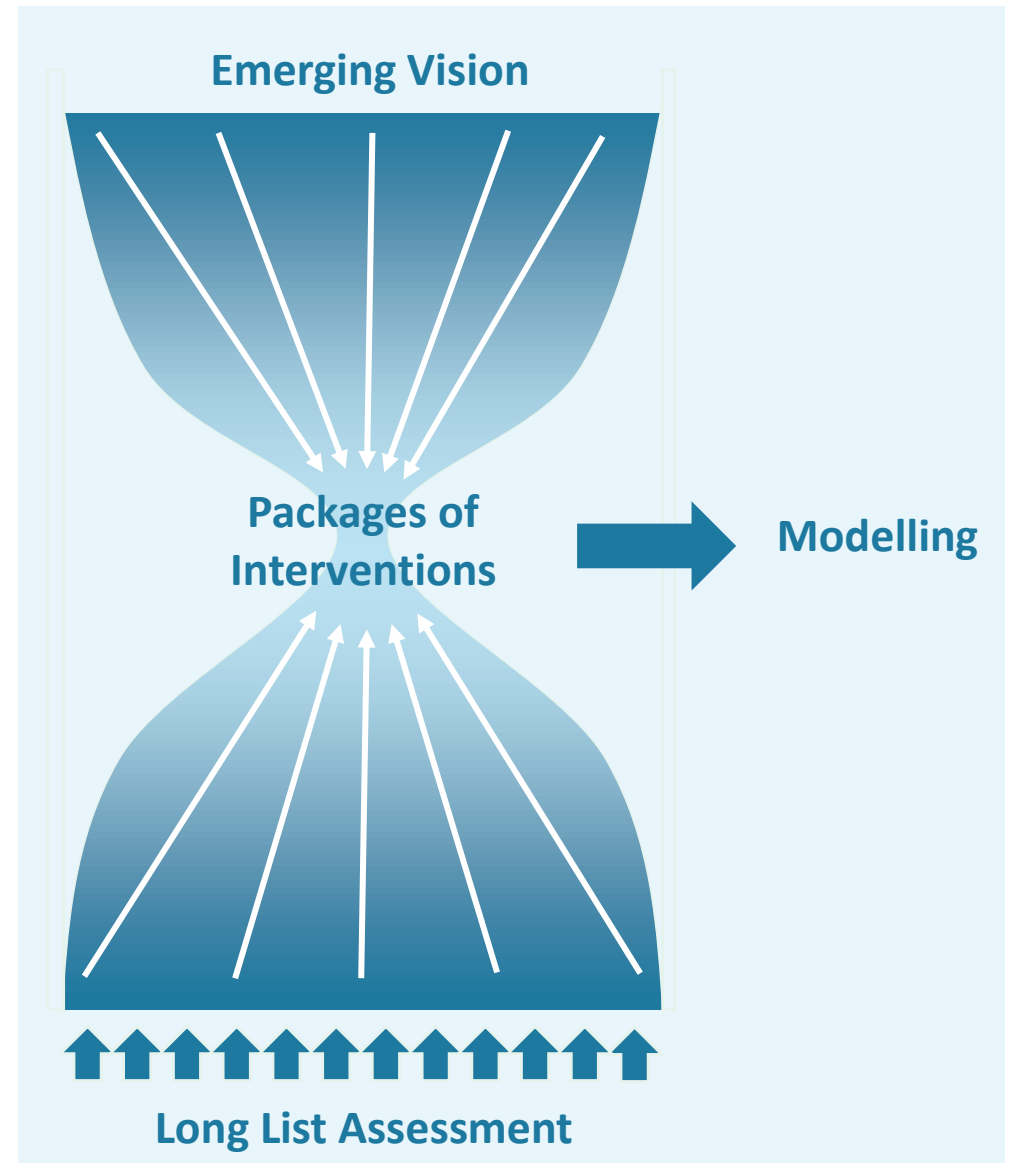
The Packages combine an overarching vision for the Kent, Medway and East Sussex Area with the results of the Multi Criteria Assessment Framework.

In essence, this reflects both a 'top down' i.e., vision led approach and a 'bottom up' i.e., individual intervention assessment approach. While planning has taken place considering multi-modal options and how Packages group and integrate, they are presented in the following narrative by mode or groups of modes. This is partly as a product of how they needed to be modelled, but also to talk directly to key stakeholders and modal-based planners of national networks (e.g. Network Rail and National Highways), and possible funding sources – often siloed.

A diagram in **Figure 2.38** to the right illustrates the essence of this combined approach.

As discussed earlier, we have used a land use and transport interaction model to simulate the impacts of these Packages of Interventions. The results from this modelling exercise are presented in detail in Part 3 (Economic Dimension). The spatial results from modelling are presented as an annex to this document.

Figure 2.38: Approach to Package development



Packages of Interventions

The Options Assessment Report for the Kent, Medway and East Sussex Area recommends four Packages of Interventions should be included in the Strategic Programme Outline Case. These are listed below and described in detail in the following pages.

Package S: Classic Rail Package	Packages T & U: High Speed Rail Packages	Package V: Mass Transit Package	Package W: Active Travel Package	Packages X & Y: Highways Packages
S1 St Pancras International Domestic High Speed Platform Capacity	T1 High Speed East - Dollands Moor Connection	V1 Fastrack Expansion - Swanscombe Peninsula	W1 Medway Active Travel Enhancements	X1 M2 Junction 5 (RIS2)
S2 London Victoria Capacity Enhancements - Signalling and Digital Rail	T2 High Speed 1 / Marsh Link - Hastings, Bexhill and Eastbourne Upgrade	V2 Fastrack Expansion - Northfleet to Gravesend	W2 Medway Active Travel - Chatham to Medway City Estate River Crossing	X2 A2 Brenley Corner Enhancements (RIS3 Pipeline)
S3 Bakerloo Line Extension	U1 High Speed 1 - Link to Medway (Chatham)	V3 Fastrack Expansion - Medway	W3 Kent Urban Active Travel Infrastructure	X3 A2 Dover Access (RIS3 Pipeline)
S4 south eastern Main Line - Chislehurst to Tonbridge Capacity Enhancements	U2 High Speed 1 - Additional Services to West Coast Main Line	V4 Medway Mass Transit	W4 Kent Inter-urban Active Travel Infrastructure	X4 A21 Safety Enhancements (RIS3 Pipeline, brought forward to RP2)
S5 London Victoria to Shortlands Capacity Enhancements		V5 Medway Mass Transit - Extension to Hoo Peninsula	W5 Faversham - Canterbury - Ashford - Hastings National Cycle Network Enhancements	X5 A229 Bluebell Hill Junction Upgrades (LLM)
S6 Hoo Peninsula Passenger Rail Services		V6 Medway to Maidstone Bus Priority	W6 Tonbridge - Maidstone National Cycle Network Enhancements	X6 A28 Birchington, Acol and Westgate-on-Sea Relief Road (MRN)
S7 North Kent Line / Hundred of Hoo Railway - Rail Chord		V7 Medway Mass Transit - Chatham to Medway City Estate New Bridge	W7 Sevenoaks - Maidstone - Sittingbourne National Cycle Network Enhancements	X7 A228 Colts Hill Strategic Link (MRN Pipeline)
S8 Thameslink - Extension to Maidstone and Ashford		V8 Medway Mass Transit - Chatham to Medway City Estate Water Taxi	W8 Bromley - Sevenoaks - Royal Tunbridge Wells National Cycle Network Enhancements	X8 Digital Operations Stack and Brock
S9 North Kent Line - Service Enhancements		V9 Maidstone Bus Enhancements	W9 East Sussex Local Active Travel Infrastructure	X9 A20 Enhancements for Operations Stack & Brock
S10 North Kent Line / Chatham Main Line - Line Speed Enhancements		V10 Dover Bus Rapid Transit	W10 East Sussex Inter-urban Active Travel Infrastructure	X10 Kent Lorry Parks (Long Term Solution)
S11 OOtterpool Park / Westenhangar Station Platform Extensions and Station Upgrade		V11 Sittingbourne Bus Enhancements	W11 Royal Tunbridge Wells - Hastings National Cycle Network Enhancements	X11 Dover Freight Diversification
S12 Integrated Maidstone Stations		V12 Sevenoaks Bus Enhancements	W12 Canterbury Placemaking and Demand Management Measures	X12 A2 Canterbury Junctions Enhancements
S13 Dartford Station Remodelling / Relocation		V13 Thanet Bus Enhancements	W13 Medway Placemaking and Demand Management Measures	X13 M2 Junction 4 - Junction 7 Smart Motorway (SMP)
S14 Canterbury Rail Chord		V14 Folkestone Bus Enhancements	W14 Dover Placemaking and Demand Management Measures	X14 M20 Junction 6 Sandling Interchange Enhancements
S15 New Station - Canterbury Interchange		V15 Ashford Bus Enhancements		X15 M20 Junction 3 - Junction 5 Smart Motorway
S16 New Strood Rail Interchange		V16 Royal Tunbridge Wells / Tonbridge Bus Enhancements		X16 M25 Junction 1a Enhancements
S17 Rail Freight Gauge Clearance Enhancements		V17 Thames Gateway / Gravesham Bus Enhancements		X17 M25 Junction 5 Enhancements
S18 Crossrail - Extension from Abbey Wood to Dartford / Ebbsfleet		V18 Canterbury / Whitstable / Herne Bay Bus Enhancements		X18 Herne Relief Road
S19 High Speed 1 / Waterloo Connection Chord - Ebbsfleet Southern Rail Access		V19 Ferry Crossings - New Sheerness to Hoo Peninsula Service		X19 Canterbury East Relief Road
S20 Ebbsfleet International (Northfleet Connection)		V20 Ferry Crossings - Sheerness to Chatham / Medway City Estate / Strood Enhancements		X20 New Maidstone south east Relief Road
S21 Ebbsfleet International (Swanscombe Connection)		V21 Ferry Crossings - Ebbsfleet - Tilbury Enhancements		X21 A228 Hoo Peninsula Enhancements
S22 Gatwick - Kent Service Enhancements		V22 Inland Waterway Freight Enhancements		X22 A228 Medway Valley Enhancements
				X23 Strood Riverside Highways Enhancement and Bus Lane
				X24 A259 Level Crossing Removals - East of Rye
				X25 A21 Kippings Cross to Lamberhurst Dualling and Flimwell and Hurst Green Bypasses
				X26 Hastings and Bexhill Distributor Roads
				Y1 Lower Thames Crossing (costings for Kent-side only)

Global Policy Package: To be defined but likely to include new mobility, rural connectivity, freight, demand management, and accelerated decarbonisation interventions

Package S: Classic Rail Package

Overview

This package adds capacity to the classic rail network in the South East Area. It targets the areas of Kent that lie closest to London.

Areas further away from London will be served by High Speed interventions described in the following slide.

The package includes several interventions that add capacity through additional services (e.g. Crossrail to Ebbsfleet, Thameslink to Maidstone) as well as interventions that materially increase track and platform capacity (e.g. through capacity released by the Bakerloo Line extension).

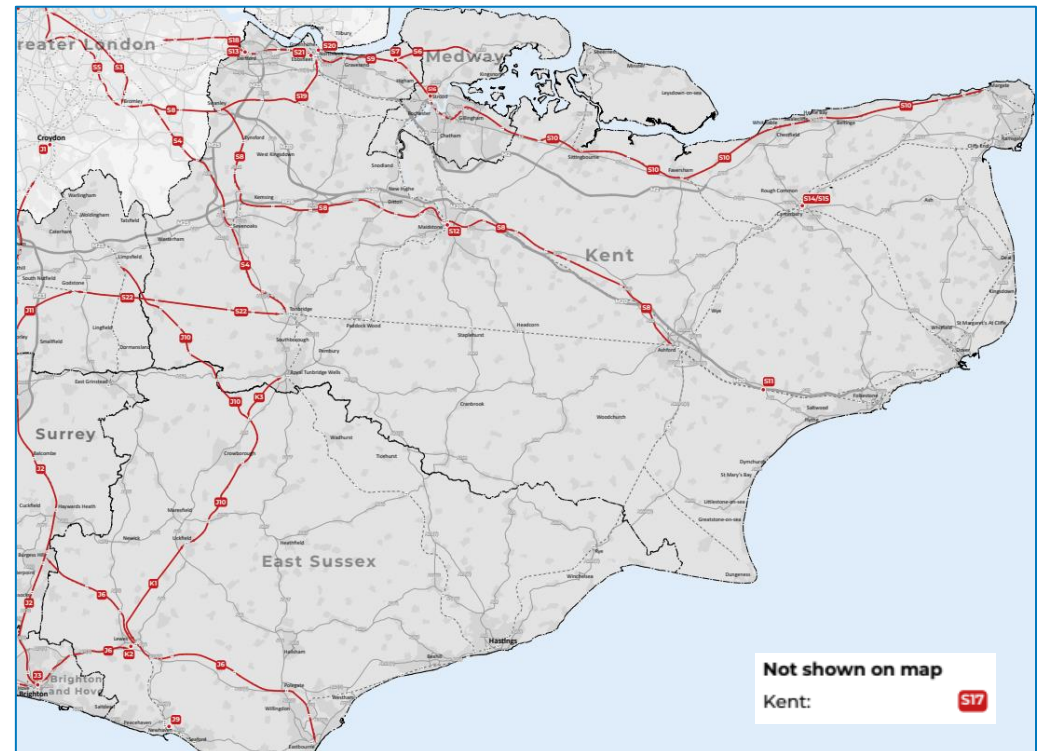
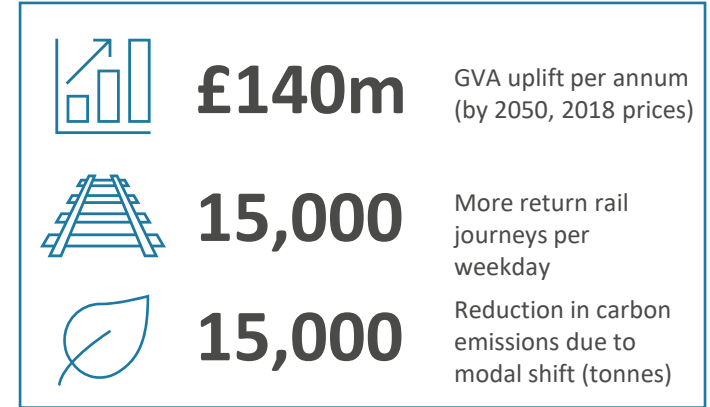
It also includes interventions that improve the integration of the rail system – notably at Ebbsfleet, Canterbury, Maidstone, and Strood – where several railway lines cross each other without providing easy interchange from one railway to another.

It also includes the introduction of passenger rail services on the Grain Branch and direct services between Gatwick Airport and Mid/East Kent.

Benefits

- **Capacity** enhancements at key bottlenecks on radial corridors
- Improvements in **service frequencies**, especially for urban metro services
- Better **interchange** between rail services and other modes
- Better rail access for new/growing areas
- Large **reduction in carbon emissions**

Modelling Results



Packages T & U: High Speed Rail Packages

Overview

These packages includes some of the more radical interventions in the long list for this study. They are based around expanding the domestic high speed service to deliver transformational improvements in journey times to Kent, Medway, and East Sussex.

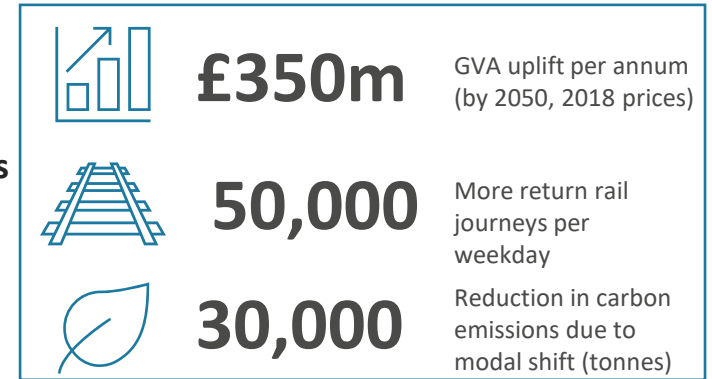
The **East Package** would deliver direct High Speed services from London to Eastbourne via Ashford and Hastings, reducing journey times from Hastings/Bexhill to London by 20 minutes. It would also deliver faster journey times to Dover using a connection to HS1 at Dollands Moor, and an increase in the frequency of HS1 services to Ashford

The **North Package** aims to deliver significant improvements in connectivity to North Kent to ensure coastal communities in Medway, Swale, Canterbury, and Thanet are as well served as other parts of Kent. Several high-level options have been considered, ranging from a new link between HS1 and Medway to improvements to the North Kent Line and Rochester Bridge. The modelling represented for this package reflects one of the more interventionalist options. There are also opportunities to replace domestic service rolling stock on HS1 and expand the fleet to capitalise on network enhancements.

Benefits

- **Transformational improvements in journey times** between London (and the rest of the UK) and coastal Kent / Medway / East Sussex
- Potentially **transformational improvements in capacity** between London and coastal Kent/Medway/East Sussex, depending on which options are taken forward
- Large **reduction in carbon emissions**

Modelling Results (additional to core package)



Package V: Mass Transit Package

Overview

This package delivers improvements to bus services in Kent, Medway, and East Sussex.

The scope for improvements and expansion are particularly strong in the North Kent and Medway areas, where high levels of growth and regeneration are expected. A step change in infrastructure and service provision should be viable thanks to the underlying demographics in this area.

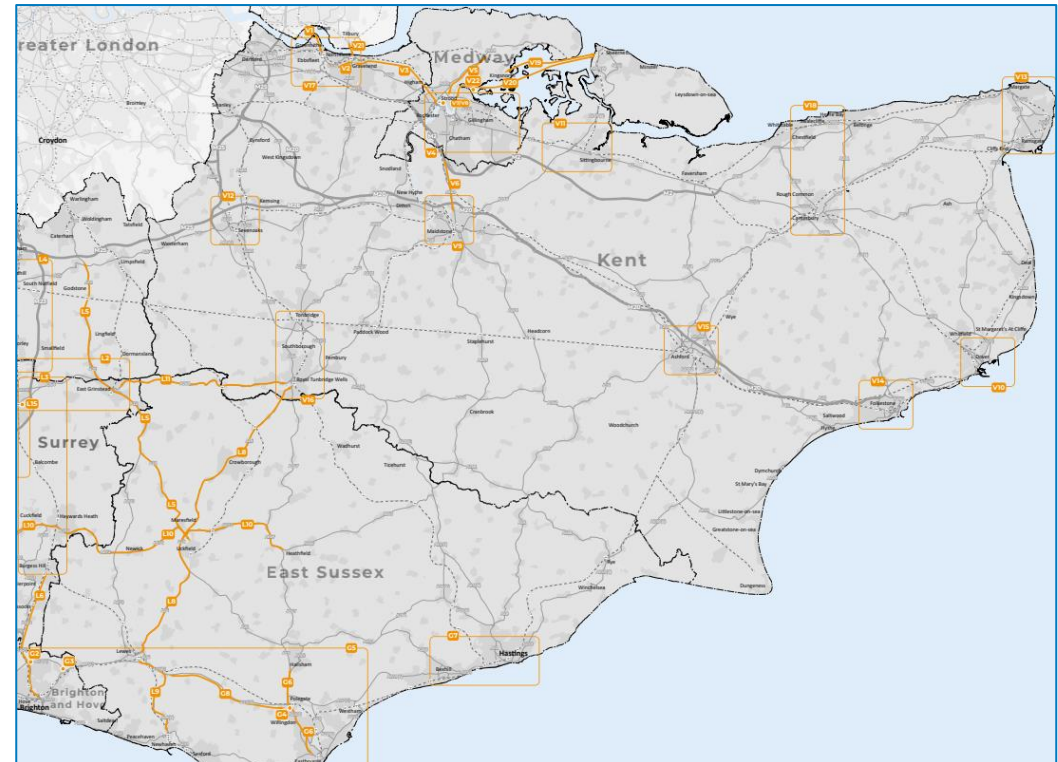
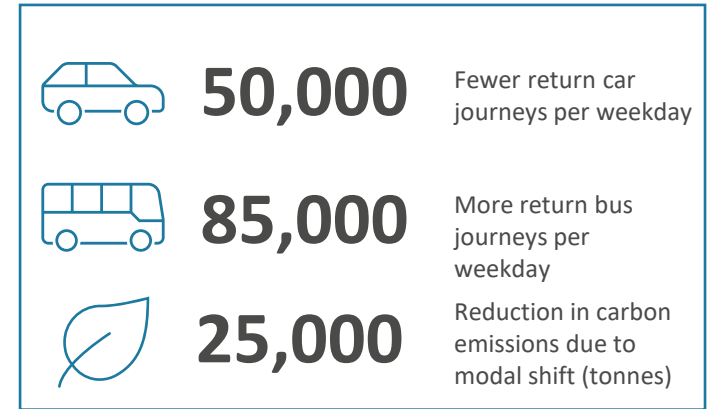
This package includes an opportunity to create a new Medway River Crossing to enable faster journeys between the north and south of this conurbation by bus/mass transit and active modes (e.g. walk, wheel, cycle and microtransit such as bike hire and e-scooters).

This intervention assumes all other conventional bus services in the Kent, Medway and East Sussex area experience general improvements in journey times, frequencies, and service quality.

Benefits

- **Significant improvements** in the quality, speed, and frequency of bus services in Kent, Medway, and East Sussex
- Better **interchange** between bus and rail
- Improvements in **connectivity** between **islands and peninsulas** in North Kent
- **Modal shift** from car to bus (and in some instances, ferries)

Modelling Results



Package W: Active Travel Package

Overview

This package delivers general uplift in the quality of walking and cycling infrastructure, particularly in urban areas.

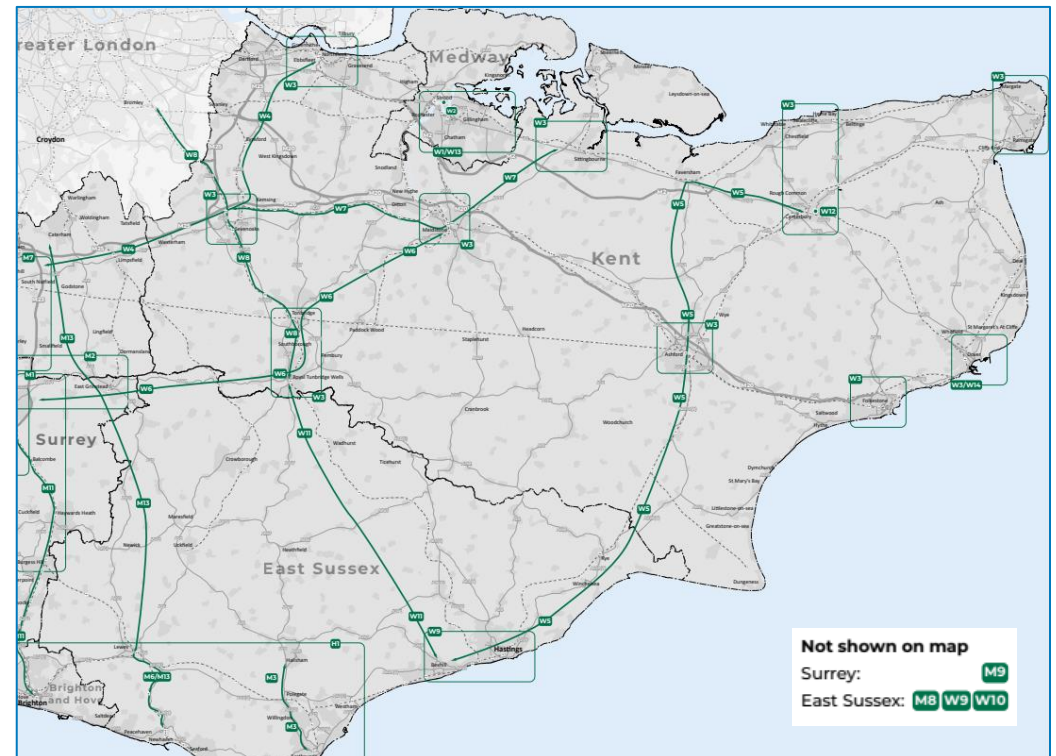
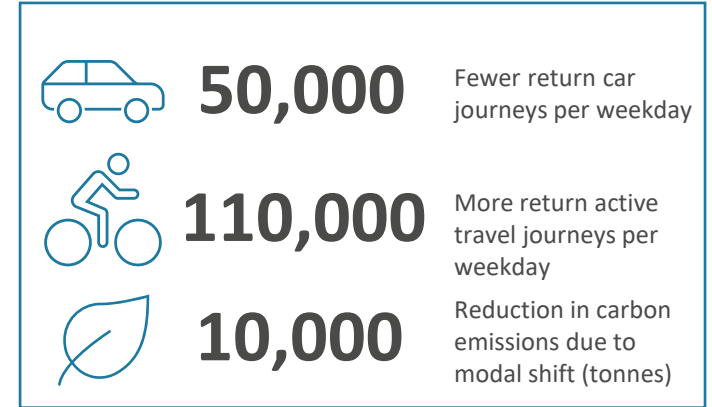
Kent County Council has identified inter-urban corridors on the cycling network and identified several gaps in national and regional cycle networks that many stakeholders wish to see addressed. Urban areas are identified with most need and potential for investment.

Similarly, East Sussex County Council has developed a Local Walking and Cycling Infrastructure Plan which provides details of network of routes for its main towns including Bexhill, Hastings, Battle and Rye.

Benefits

- Material improvements to the urban realm of urban areas, unlocking active travel and regeneration opportunities
- Improvements in **air quality** in Brighton and Hove
- Significant **mode shift** from car to active travel, with associated health benefits

Modelling Results



Packages X & Y: Highways Packages

Overview

These Kent, Medway and East Sussex highways packages deliver the Kent Bifurcation strategy – which strengthens the resilience of Channel Port access corridors – and improved connectivity for coastal areas.

The packages include several interventions that aim to improve the resilience of the M2/A2 and M20/A20 corridors, improve the connectivity of Coastal East Sussex (via the A21 corridor), and relieve congestion in city and town centres.

Many of these interventions will enable housing growth and/or improve public transport and active travel facilities in urban areas. In this sense, highways should be viewed as multi-modal interventions.

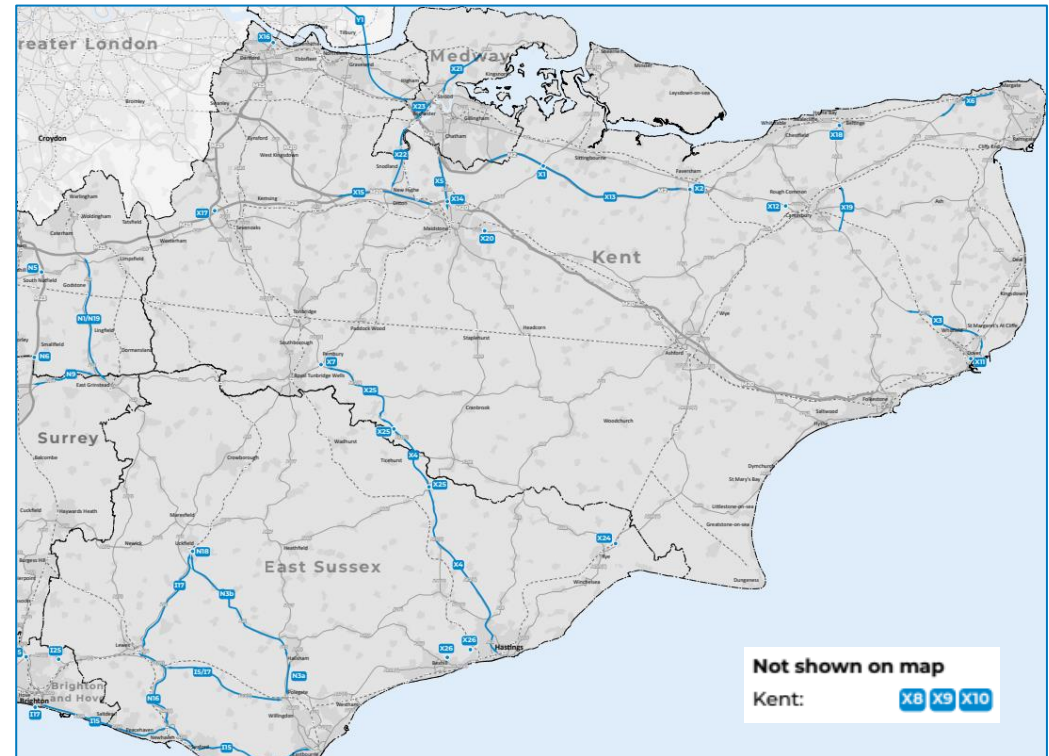
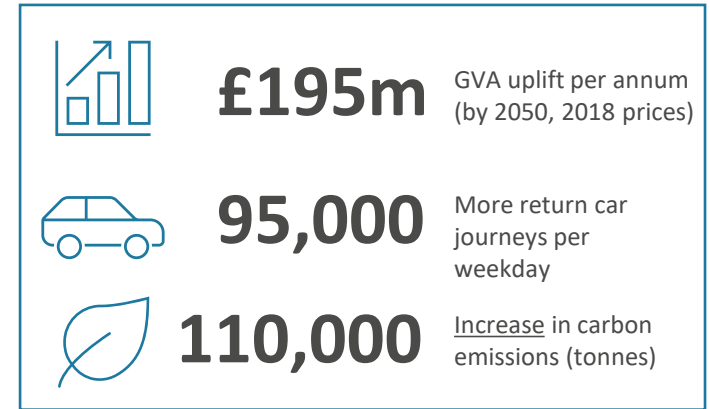
Interventions across this area should be designed to de-conflict local and longer-distance traffic, and address safety and air quality issues. They should support (and be supported by) public transport improvements.

When modelled in isolation, these interventions are projected to increase carbon emissions. This effect will diminish if this package is combined with the “global” packages and sustainable mode interventions.

Benefits

- **More resilient** corridors serving the key Channel Ports
- **Safer highways**, notably in urban areas
- **Faster**, more **reliable highway journeys** between Brighton and South Hampshire
- **Improved air quality** in urban areas
- Scope to **reallocate road space to active travel and public transport**

Modelling Results



Global Policy Packages

Overview

In addition to the location specific interventions, the Area Studies also identified a list of policy interventions that, in general, would apply across a large area (if not all) of South East England. These are known as Global Policy Interventions.

The Global Policy Interventions have been assessed separately to the Area Specific interventions by using a consistent framework for the whole of the South East to reduce a long list of typologies to the short list of proposed interventions.

In total, 57 interventions were assessed by a:

- **Strategic Assessment:** Each intervention was assessed against the 15 Priorities included in TfSE's Transport Strategy for South East England. These priorities were grouped and are presented on the following page.
- **Economic Assessment:** Each intervention was against the 18 Criteria included in the DfT's Early Assessment and Sifting Tool (EAST).

The best performing interventions were grouped into typologies and are listed below.

Approach

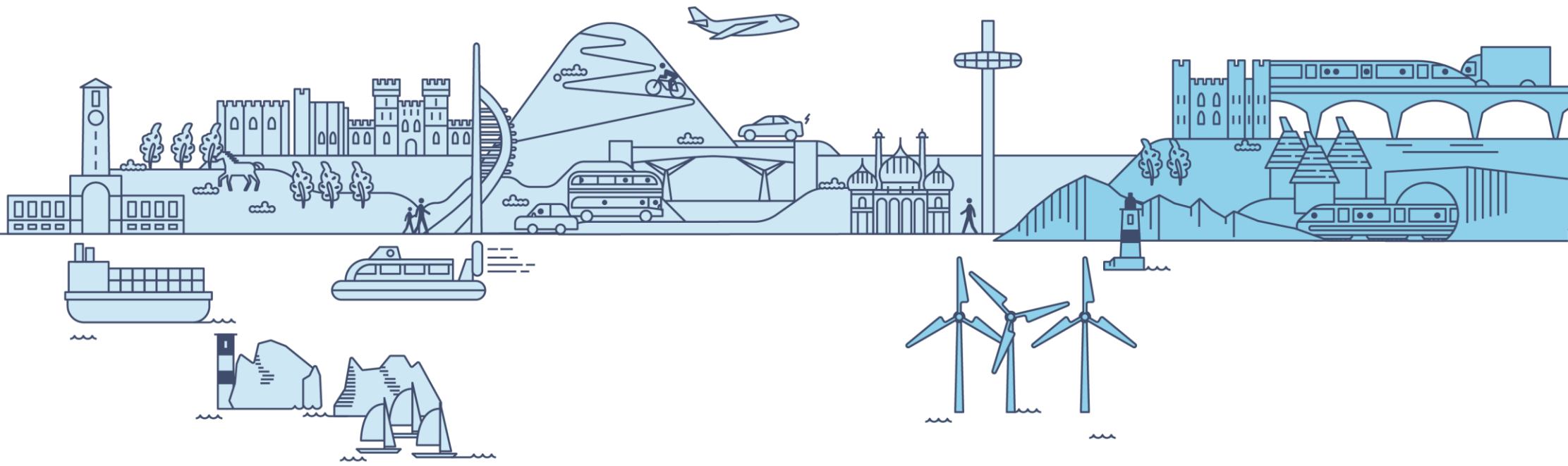
They were sourced from:

- **Area Study Working Groups** – the Steering Groups formed of representatives from Local Transport Authorities, infrastructure providers, and other key stakeholders.
- **Area Study Forums** – workshops attended by a much larger group of stakeholders representing operators, user groups, planning authorities, environmental groups, and others with an interest in each area.
- **TfSE's Future Mobility Study** – this work was commissioned in parallel with the earlier stages of the Area Study Programme and has produced a Draft Final Report and short list of recommended interventions.
- **TfSE's Freight and International Gateways Study** – which has also produced a short list of recommended interventions that cut across the whole of the South East.
- **Client and Project Teams** – capturing other relevant interventions

Short Listed Global Policy Interventions

The Global Policy Packages are:

1. **Decarbonisation:** This delivers a faster trajectory towards net-zero than current trends are expected to yield.
2. **Public Transport Fares:** This reverses the real terms increase in the cost of public transport compared to motoring through fares subsidy.
3. **Road User Charging:** This assumes the UK government develops a national road user charging system to replace funding currently raised from fuel duty.
4. **New Mobility:** This reflects the potential for new mobility (e.g., electric bikes) to boost active travel.
5. **Virtual Living:** The pandemic has shown how virtual working can help reduce demand for transport services.
6. **Integration and Access:** This delivers improvements in transport integration, and accessibility across and between all modes of transport. It also supports better integration between transport and spatial planning.



Part 2f

Theory of Change

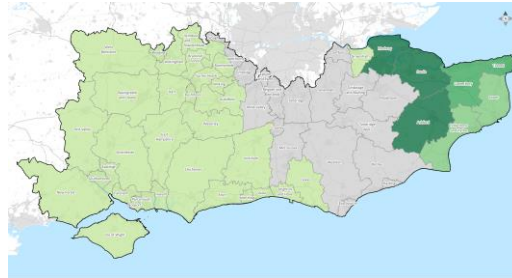
Delivering our Vision for the Kent, Medway and East Sussex area

Figure 2.39 below summarises how each Package contributes to delivering our vision for the Kent, Medway and East Sussex Area.

Figure 2.39: Delivering our Vision for the Kent, Medway and East Sussex area

Coastal Connectivity

It delivers a material boost to the economy in the most deprived areas of the region – supporting the Levelling Up agenda.



GVA growth focussed in most deprived areas
Supported by Packages 1b, 1c (shown), and 4

Growth and Regeneration

It unlocks opportunities for growth and regeneration, especially in Kent Thameside, Medway, and Ashford.



Development Kent Thameside
Supported by Packages 1a, 1b, 2, 3 and 4

Integration

It includes interventions that integrates modes together (and within each other) to deliver seamless, multi-modal journey experiences.



Canterbury integration Options
Supported by Packages 1a, 3 and 4

Resilience

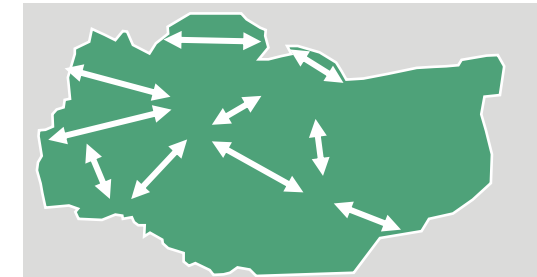
It boosts the resilience and connectivity of the key corridors that serve the country's busiest international gateways.



M20 Operation Brock
Supported by Package 4

Sustainable Travel

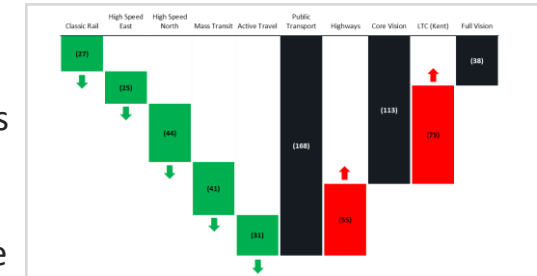
It enhances bus services and active travel infrastructure to deliver viable sustainable travel options for all.



Priority corridors in KCC Active Travel Strategy
Supported by Package 3

Carbon Reduction

It helps Kent, Medway and East Sussex reduce carbon emissions below today and our 2050 baseline – although more is needed to achieve net zero (see Global Policy Interventions).



Carbon Emission Reductions
Supported by Packages 1, 2 and 3

Package Alignment to Problem Statements and Objectives

Alignment with Problem Statements

Part 2b sets out 23 Problem Statements that the Kent, Medway and East Sussex SPOC aims to address.

Table 2.3 on the following page presents a qualitative assessment on the extent to which each package of interventions address each Problem Statement.

This assessment uses a simple scale shown below:

- ✓✓✓ Fully addresses Problem Statement
- ✓✓ Mostly addresses Problem Statement
- ✓ Partially addresses Problem Statement

Table 2.3 includes a column on the right under the heading 'All Packages'. The scores in this column represent the highest score assigned to each of the individual packages. If one package scores two ticks and all other packages score none, then the column 'All Packages' is also assigned two ticks.

Table 2.3 (overleaf) shows that – when Global Policies are included – all Problem Statements are addressed by the Packages presented in this report. It also shows that no single intervention or Package addresses all the problems, subsequently requiring a multi-modal solution.

Theory of Change Framework

We have also mapped the Packages of Interventions to a Theory of Change Framework.

This framework includes:

- **Issues:** What problems does the package of intervention address and what objectives does it hope to achieve?
- **Inputs:** What resources are needed to deliver the changes required to address the issues described above?
- **Outputs:** What will be the direct outputs of the inputs described above?
- **Outcomes:** What are the effects of the outputs?
- **Impacts:** What are the wider socioeconomic impacts delivered by the outcomes?

The Theory of Change Framework is presented in **Tables 2.4 to 2.8** overleaf with examples of how the Packages of Interventions address the multi-modal elements of the framework.

It demonstrates that together the Packages in the SPOC deliver **strategic benefits** to achieve the study's **multi-modal objectives**. All of the Packages are required in conjunction with one another for maximum success in delivering positive outcomes.

Table 2.3: Problem Statement Mapping to Packages

Problem Statement	1a Rail (Classic)	1b & 1c Rail (High Speed)	2 Mass Transit	3 Placemaking	4 Highways	Global Packages	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				✓✓✓	✓	✓	✓✓✓

Rail Packages (1a, 1b and 1c) – Theory of Change Framework

Table 2.4: Theory of Change Framework (Package 1)

Issues	Inputs	Outputs	Outcomes	Impacts
Global Issues				
<ul style="list-style-type: none"> The pace of transport de-carbonisation is too slow. Threat of climate change on resilience of the transport network. Overreliance of freight reliant on the highway network. Need for affordable housing – but sustainably delivered. 	Classic Rail Package (1a)			
<p>Economy and Society</p> <ul style="list-style-type: none"> Relatively poor connectivity of Kent (undermined by river/London). Over-reliance on London’s economy. Relatively weak industrial output and economic productivity. Poor connectivity holding back coastal and island communities. 	<ul style="list-style-type: none"> Victoria Terminal Capacity Chislehurst – Tonbridge Capacity North Kent/Chatham Line Speeds London Metroisation Maidstone Thameslink Services North Kent London Bridge Services Gatwick Airport Services Hoo Peninsula Passenger Services Crossrail to Ebbsfleet Ebbsfleet Interchange Ebbsfleet Southern Access Dartford Remodelling/Relocation Bakerloo Line Extension Integrated Maidstone Stations Strood Interchange Canterbury Interchange Otterpool Park Access London – Dover freight gauge 	<ul style="list-style-type: none"> Increased capacity (and therefore reduced crowding) on rail services serving West Kent, Kent Thameside, and Medway. More choice for London Terminal access for Maidstone, Medway and North Kent. Improved access to the rail network for Hoo Peninsula. Significant improvements in interchange and cross service connectivity at Ebbsfleet, Strood, Canterbury, and Maidstone. Better “orbital” rail service options e.g. Ashford/Canterbury – Gatwick, Ebbsfleet – Bromley. A more attractive freight offer to encourage freight modal shift from highway to rail. 	<ul style="list-style-type: none"> Boosting productivity through better skills matching, knowledge sharing and agglomeration. Reducing costs for businesses. Ensuring digital and energy networks can meet future transport (and wider socioeconomic) needs. Attracting investment in high growth, high value opportunities. Enabling residents to easily access employment, affordable housing and services – particularly for those who do not have access to a car. Increasing the affordability and availability of convenient, high quality, active and public transport. Ensuring that transport interventions are suitable for all users including the elderly and individuals of reduced mobility and other additional needs Adopting the principles of environmental net gain Shifting passenger and freight travel from fossil fuel to non carbon emission energy. Increasing access to employment, education, and training opportunities to a wider segment of the area’s population. Supporting growth in domestic tourism by providing sustainable access to the area’s natural, historic, cultural, sporting, leisure, and recreational attractions. Improving access to international gateways through sustainable modes, incl. electric rail freight. 	<ul style="list-style-type: none"> 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. Protect and enhance the natural and historic environment. Enable better and more equitable socioeconomic outcomes. Move to net zero carbon and minimise disruption from climate change. Promote the economic regeneration of the area, particularly in the more deprived parts of the area. Continue to serve as the gateway to Europe for the wider UK in a “post Brexit” economy.
<p>International Gateways and Highways</p> <ul style="list-style-type: none"> Channel Ports are over-reliant on one highway corridor. 				
<p>Railways</p> <ul style="list-style-type: none"> Relatively slow rail services in places (especially coastal areas). Resilience challenges on parts of the rail network. Capability and capacity challenges on parts of the rail network. 				
<p>Public Transport</p> <ul style="list-style-type: none"> Weak public transport integration. Accessibility barriers to public transport. 				

Rail Packages (1a, 1b and 1c) – Theory of Change Framework

Table 2.4: Theory of Change Framework (Package 1 – continued)

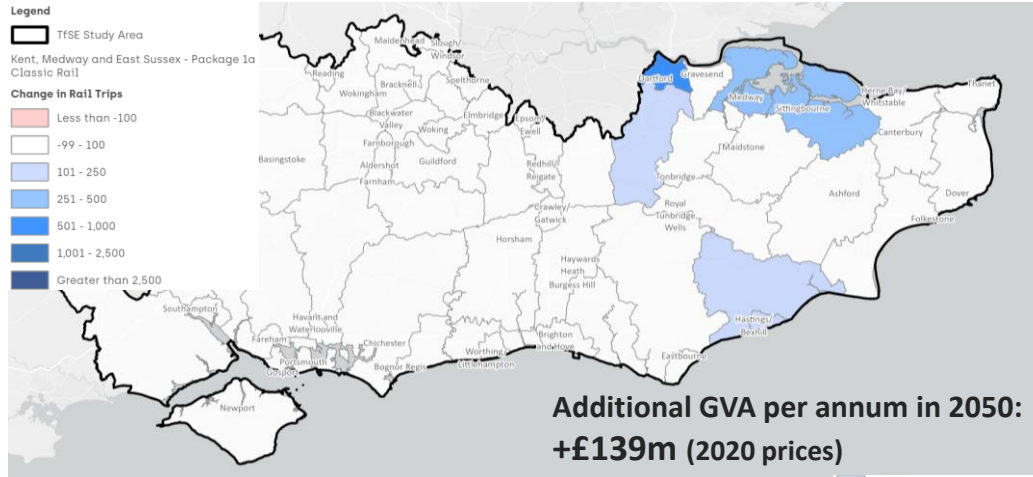
Issues	Inputs	Outputs	Outcomes	Impacts
Global Issues				
<ul style="list-style-type: none"> The pace of transport de-carbonisation is too slow. Threat of climate change on resilience of the transport network. Overreliance of freight reliant on the highway network. Need for affordable housing – but sustainably delivered. 	High Speed Rail Packages (1b and 1c)			
<p>Economy and Society</p> <ul style="list-style-type: none"> Relatively poor connectivity of Kent (undermined by river/London). Over-reliance on London’s economy. Relatively weak industrial output and economic productivity. Poor connectivity holding back coastal and island communities. <p>International Gateways and Highways</p> <ul style="list-style-type: none"> Channel Ports are over-reliant on one highway corridor. <p>Railways</p> <ul style="list-style-type: none"> Relatively slow rail services in places (especially coastal areas). Resilience challenges on parts of the rail network. Capability and capacity challenges on parts of the rail network. <p>Public Transport</p> <ul style="list-style-type: none"> Weak public transport integration. Accessibility barriers to public transport. 	<p>Package 1b: High Speed (East)</p> <ul style="list-style-type: none"> Dollands Moor Connection HS1 Services to Eastbourne More International Services <p>Package 1c: High Speed (North)</p> <ul style="list-style-type: none"> St Pancras Terminal Capacity Non London HS1 Services North Kent High Speed Service Connectivity Enhancements 	<ul style="list-style-type: none"> Transformational journey time improvements to Hastings, Bexhill, Medway, Swale, Whitstable/Herne Bay, Thanet, and Dover (ranging from 5 – 30 mins improvements). Additional service frequencies (and capacity) at Ashford International. Potentially very significant capacity increases for high speed services in Kent Thameside, Medway, the Isle of Sheppey and North Kent. Better international connectivity. 	<ul style="list-style-type: none"> Boosting productivity through better skills matching, knowledge sharing and agglomeration. Improving transport network efficiency, reliability, and resilience. Reducing costs for businesses. Ensuring digital and energy networks can meet future transport (and wider socioeconomic) needs. Attracting investment in high growth, high value opportunities. Ensuring that transport interventions are suitable for all users including the elderly and individuals of reduced mobility and other additional needs Adopting the principles of environmental net gain Shifting passenger and freight travel from fossil fuel to non carbon emission energy. Supporting sustainable economic development by providing multi-modal transport access to employment, services, and housing developments. Supporting growth in domestic tourism by providing sustainable access to the area’s natural, historic, cultural, sporting, leisure, and recreational attractions. Improving access to international gateways through sustainable modes, incl. electric rail freight. Improving access between the area’s international gateways and the rest of the UK. 	<ul style="list-style-type: none"> 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. Promote the economic regeneration of the area, particularly in the more deprived parts of the area (See Figure 2.40 overleaf). Protect and enhance the natural and historic environment. Move to net zero carbon and minimise disruption from climate change. Continue to serve as the gateway to Europe for the wider UK in a “post Brexit” economy.

Rail Packages (1a, 1b and 1c) – Spatial Impacts

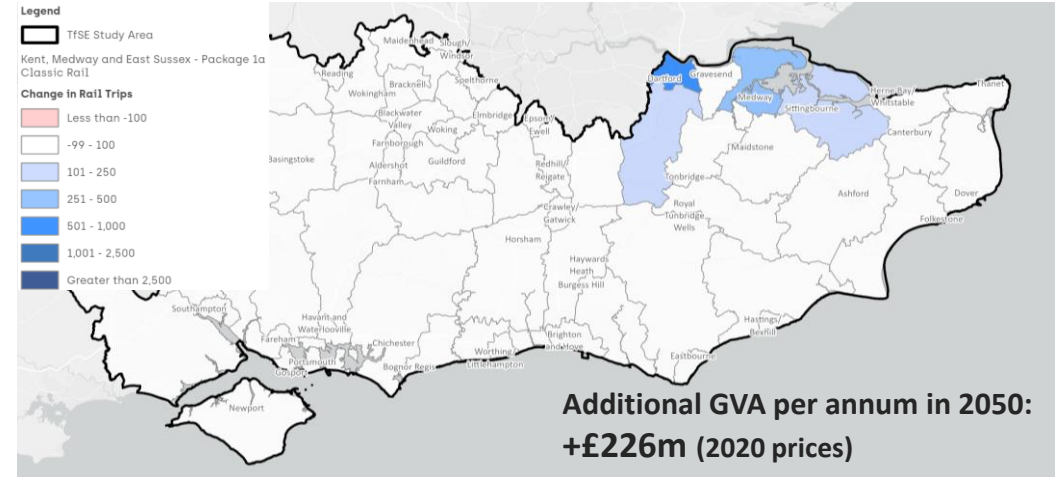
Figure 2.40 shows the modelled GVA impacts for the rail packages included in this study and the 2019 Index of Multiple Deprivation by Local Authority District.

Figure 2.40: Additional GVA per annum by district (in 2050) for rail packages

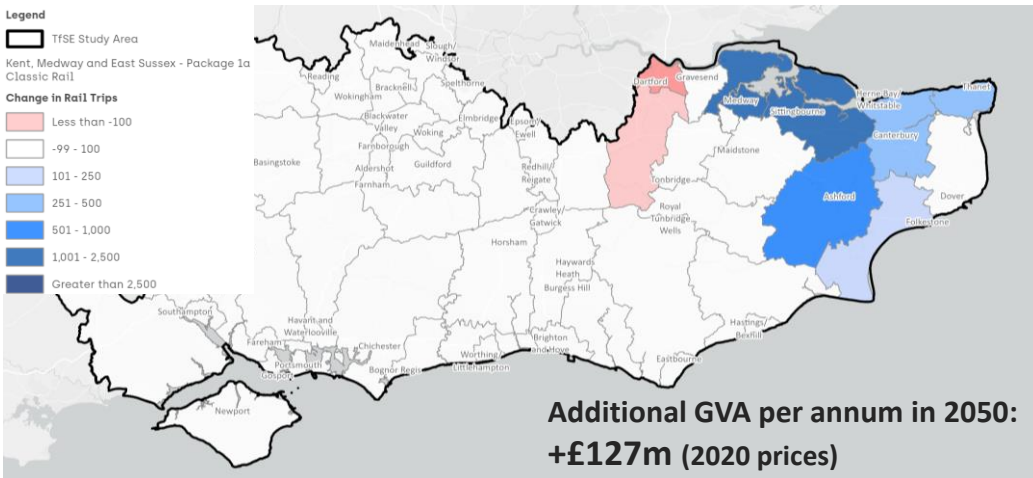
Package 1a (Classic Rail)



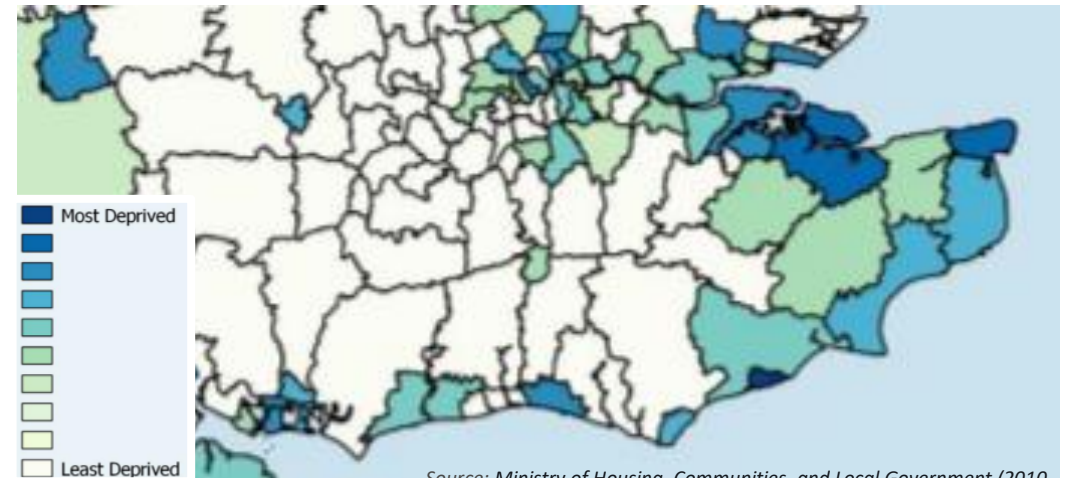
Package 1c (High Speed North – HS1 Link Option via Chatham)



Package 1b (High Speed East)



2019 Indices of Deprivation by District



Source: Ministry of Housing, Communities, and Local Government (2019)

Further maps depicting the spatial benefits by package are presented as an annex.

Mass Transit Package (2) – Theory of Change Framework

Table 2.5: Theory of Change Framework (Packages 2)

Issues	Inputs	Outputs	Outcomes	Impacts
Global Issues				
<ul style="list-style-type: none"> The pace of transport de-carbonisation is too slow. Threat of climate change on resilience of the transport network. Overreliance of freight reliant on the highway network. Need for affordable housing – but sustainably delivered. 	Mass Transit Package (2)			
<p>Economy and Society</p> <ul style="list-style-type: none"> Relatively weak industrial output and economic productivity. Poor connectivity is holding back coastal and island communities. Rural communities left behind in active/public transport connectivity 	<ul style="list-style-type: none"> Fastrack Expansion Medway Bus Rapid Transit New Medway Bus River Crossing General Bus Enhancements Strategic Mobility Hubs Demand Responsive Transit Reinstate/Improve Thames, Medway and Swale Ferries Integrated Fares and Ticketing Inland Waterway Freight 	<ul style="list-style-type: none"> Bus and/or tram services delivering a “turn-up-and-go” level of public transport service frequencies – particularly in the largest built up areas in Kent and Medway. Faster mass transit journeys (increasing average speeds from c.8mph to 15mph) where Bus Rapid Transit infrastructure is delivered. Improvements in the quality of mass transit provision (e.g. accessibility, information, comfort, internet connectivity). Reduced demand on the highway system due to modal shift from car to bus (and in some instances, ferries). 	<ul style="list-style-type: none"> Boosting productivity through better skills matching, knowledge sharing and agglomeration. Improving transport network efficiency, reliability, and resilience. Reducing costs for businesses. Increasing the affordability and availability of convenient, high quality, active travel and public transport options; Ensuring that transport interventions are suitable for all users including the elderly and individuals of reduced mobility and other additional needs Adopting the principles of environmental net gain Shifting passenger and freight travel from fossil fuel to non carbon emission energy; 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 	<ul style="list-style-type: none"> 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. Protect and enhance the natural and historic environment. Enable better and more equitable socioeconomic outcomes. Move to net zero carbon and minimise disruption from climate change. Promote the economic regeneration of the area, particularly in the more deprived parts of the area.
<p>International Gateways and Highways</p> <ul style="list-style-type: none"> Highway congestion, safety, and air quality issues in multiple places. 				
<p>Public Transport</p> <ul style="list-style-type: none"> Variable mass transit offer and low/declining bus patronage. Weak public transport integration. Unaffordable/complicated public transport fares. Accessibility barriers to public transport access. 				

Placemaking and Active Travel Package (3) – Theory of Change Framework

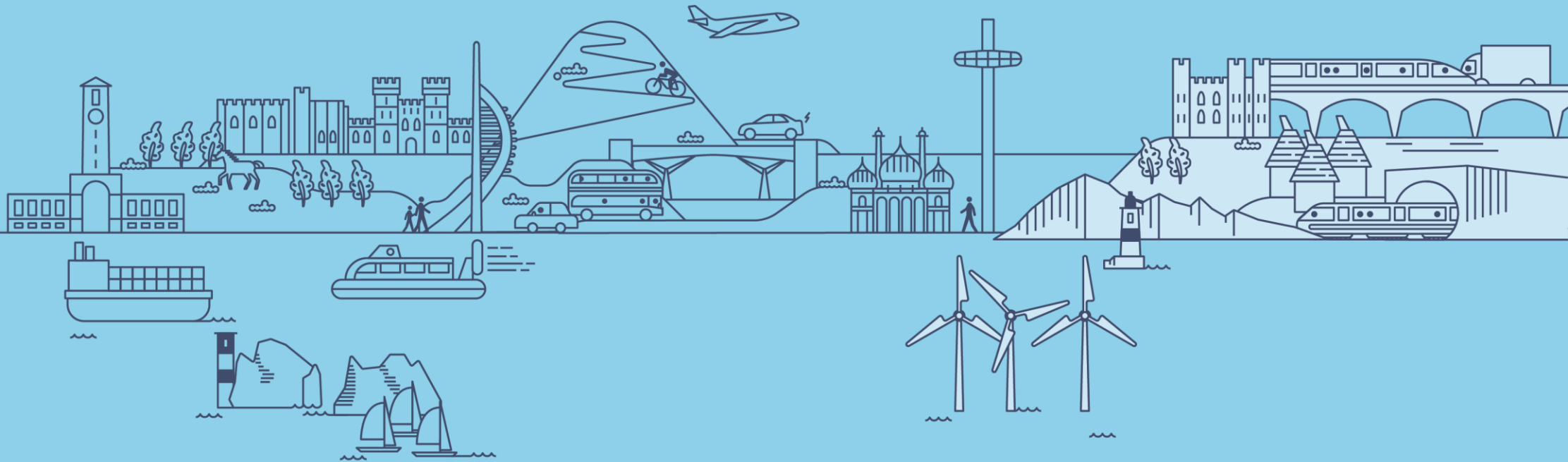
Table 2.5: Theory of Change Framework (Package 3)

Issues	Inputs	Outputs	Outcomes	Impacts
Global Issues				
<ul style="list-style-type: none"> The pace of transport de-carbonisation is too slow. Threat of climate change on resilience of the transport network. Overreliance of freight reliant on the highway network. Need for affordable housing – but sustainably delivered. 	Placemaking and Active Travel Package (3)			
Active Travel				
<ul style="list-style-type: none"> Low cycle participation. Variable cycling infrastructure. 	<ul style="list-style-type: none"> Urban Active Travel NCN Improvements Placemaking (e.g. Canterbury) 	<ul style="list-style-type: none"> Improved urban realm and active travel infrastructure for pedestrians and cyclists. Improvement in air quality in many built up areas, particularly those that complement these measures with road space regulation.. 	<ul style="list-style-type: none"> 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 and availability of convenient, high quality, active travel and public transport options. Mitigating adverse impacts of transport on human health and welfare. Enabling deprived communities to attract investment and achieve more equitable socioeconomic outcomes. Adopting the principles of environmental net gain Reducing the impact of transport operations on ecosystem services. Reducing the need to travel. Enabling and growing active travel. Shifting passenger and freight travel from fossil fuel to non carbon emission energy. Supporting sustainable economic development by providing multi-modal transport access to employment, services, and housing developments. 	<ul style="list-style-type: none"> Protect and enhance the natural and historic environment. Enable better and more equitable socioeconomic outcomes. Move to net zero carbon and minimise disruption from climate change. Promote the economic regeneration of the area, particularly in the more deprived parts of the area.

Highways Package (4) – Theory of Change Framework

Table 2.8: Theory of Change Framework (Package 4)

Issues	Inputs	Outputs	Outcomes	Impacts
<p>Global Issues</p> <ul style="list-style-type: none"> Threat of climate change on resilience of the transport network. Need for affordable housing – but sustainably delivered. <p>Economy and Society</p> <ul style="list-style-type: none"> Relatively connectivity of Kent (undermined by river/London) Over-reliance on London’s economy. Relatively weak industrial output and economic productivity. Poor connectivity is holding back coastal and island communities. Rural communities are being left behind in digital, active, and public transport connectivity. <p>International Gateways and Highways</p> <ul style="list-style-type: none"> Dover is highly constrained by its small footprint and access. Channel Ports are over-reliant on one highway corridor. Disruptive events at ports result in widespread highways disruption. Highway congestion, safety, and air quality issues in multiple places. 	<p>Highways (4)</p> <ul style="list-style-type: none"> Lower Thames Crossing M2/M20 Blue Bell Hill Junctions M2 J4 – 7 Capacity M2 J7 Brenley Corner A2 Canterbury Junctions M20/A20 Resilience (Brock/Stack) Better HGV Facilities/Lorry Parks M25 Junctions 1a and 5 A21 Kipping’s Cross – Lamberhurst A21 Flimwell Relief Road A21 Hurst Green Relief Road A21 – Hastings Distributor Road A28 Birchington-on-Sea Herne – Canterbury Relief Road A228 Dualling A259 Realignment (East of Rye) 	<ul style="list-style-type: none"> Much more resilient highway corridors serving the Channel Ports, and much less disruption for local traffic if and when disruption occurs at ports. Reduced conflicts between strategic/longer-distance and local traffic – including roads currently used by vulnerable users (e.g. schools on the A21). Reduced impact of highways on built up areas including Canterbury, Maidstone, villages on the A21, and the Bexhill and Hastings seafronts. Opportunity to expand active travel and mass transit in areas relieved by interventions Capacity to serve high growth areas including Medway and Kent Thameside. 	<ul style="list-style-type: none"> Boosting productivity through better skills matching, knowledge sharing and agglomeration. Improving transport network efficiency, reliability, and resilience. Reducing costs for businesses. Attracting investment in high growth, high value opportunities. Adopting the principles of environmental net gain Addressing market failures where current transport and/or access arrangements are holding back regeneration opportunities. Strengthening the resilience of transport corridors serving the busiest international gateways in the area. Improving access between the area’s international gateways and the rest of the UK. 	<ul style="list-style-type: none"> 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. Protect and enhance the natural and historic environment. Promote the economic regeneration of the area, particularly in the more deprived parts of the area. Continue to serve as the gateway to Europe for the wider UK in a “post Brexit” economy.



Part 3

Economic Dimension

Alignment with Department for Transport Business Case Guidance

The table below sets out the DfT's requirements for the Economic Dimension and the level of detail expected at Strategic Outline Case stage. The final column of the table shows where the Economic Dimension addresses each requirement.

TAG Issue	TAG Requirement	Progress at SOC	Reference
Longlist appraisal	Assess the longlist of options (outlined in the strategic dimension) to a shortlist of options and identify the preferred way forward.	Outline	Part 2e & OAR
Methodologies, assumptions and data	Set out the methodologies, assumptions and data that have been used to underpin any transport modelling and appraisal	Outline	Part 3a & Appraisal Specification Report (ASR) & OAR
Social cost-benefit analysis of shortlist	Present and explore the main economic costs and impacts associated with the intervention from a UK social welfare perspective	Outline	Part 3a (costs and benefits) & 3b (benefits only)
Distributional analysis	Provide distributional analysis to understand the impacts on different social groups	Outline	To be included at further business case stages for specific schemes. Outer Orbital Integrated Sustainability Appraisal (ISA) provides overview of some distributional impacts.
Place-based analysis	Conduct place-based analysis where the proposal has geographically focused objectives or where impacts of national-level interventions may differ spatially (where this is proportionate)	Outline	Part 2f, 3b, OAR, & ISA To be developed further in later business case stages for specific schemes
Wider analysis	Include any extra analysis which provides useful insight to inform the decision-making process: this could include analysis of the various options' performance against the SMART objectives at the shortlist stage. This analysis should be proportionate and consistent with the strategic dimension	Outline	Part 3b
Value for money	Inclusion of all monetised impacts, non-monetised impacts and sensitivities	Outline	Part 3e
Uncertainty analysis	Analyse to understand how changes in different factors affect the value for money of the investment: this should show how likely it is that these changes may happen.	Not Required	N/A
Appraisal summary table	Based on TAG guidance	Not Required	N/A
Longlist appraisal	Assess the longlist of options (outlined in the strategic dimension) to a shortlist of options and identify the preferred way forward.	Outline	Part 2e & OAR
Methodologies, assumptions and data	Set out the methodologies, assumptions and data that have been used to underpin any transport modelling and appraisal	Outline	Part 3a & Appraisal Specification Report (ASR) & OAR
Social cost-benefit analysis of shortlist	Present and explore the main economic impacts associated with the intervention from a UK social welfare perspective	Outline	Part 3b

Introduction

Overview of the Economic Case

The Economic Case presents the economic, environmental and social impacts of the SPOC Packages to inform consideration of value for money. The Economic Case considers the cumulative impacts for the SPOC as a whole, rather than at the individual Package of Interventions level and provides an overview of the most significant findings.

The Economic Case includes:

- An overview of the approach and the sources of inputs for the assessment;
- Assessment findings for the cumulative economic, environmental and social impacts (in comparison to ‘Business as Usual’) for the summary of Packages of Interventions being considered in the SPOC;
- Commentary on the key assessment findings; and
- Identification of the areas of greatest uncertainty for the assessment findings

Contents

Part 3a provides an overview of the Package development and assessment approach, which is described in full detail in the OAR.

This includes:

- The approach for the long-list assessment and an introduction to SEELUM, the land use model used for quantification of impacts;
- The assessment framework applied based on DfT guidance and the Appraisal Specification Report (ASR); and
- Identification of the areas of greatest uncertainty for the assessment findings.

Part 3b provides the findings of the assessment of Economy impacts.

These address:

- The four sub-impacts for Economy impacts (for business users and transport providers, reliability impact on business users, regeneration impacts, and wider impacts) for the Packages of Interventions, with DfT’s Transport Appraisal Guidance (TAG);

- Capital cost estimates for the Packages of Interventions (see Part 3a); and
- Indirect tax revenues from the SPOC Packages are not assessed at this stage.

Part 3c provides the findings of the assessment of Environmental impacts.

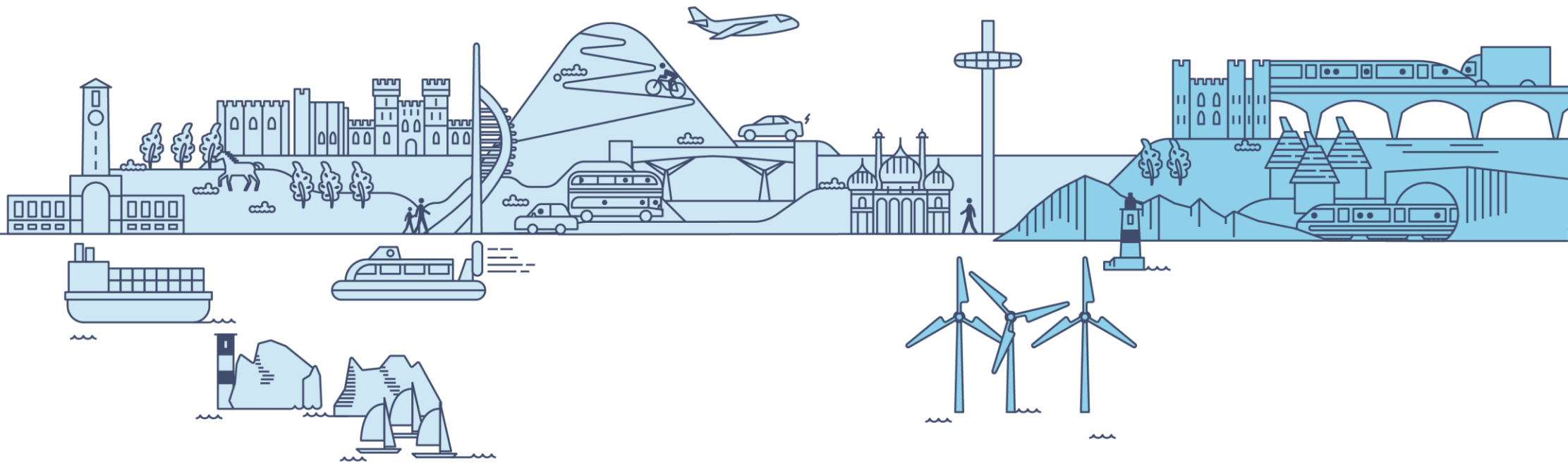
This addresses:

- The eight sub-impacts for Environmental impacts (sub-impacts noise, air quality, greenhouse gases, landscape, townscape, historic environment, biodiversity, and water environment) for the Packages of Interventions, in line with DfT’s TAG.

Part 3d provides the findings of the assessment of Social impacts.

This addresses

- The ten sub-impacts for Social impacts (sub-impacts for commuting and other users, reliability impact on commuting and other users, physical activity, journey quality, accidents, security, access to services, affordability, severance, and option and non-use values) for the Packages of Interventions, in line with DfT’s TAG.



Part 3a

Assessment Overview

Economic Assessment Overview

Assessment approach

Long list assessment

A Multi-Criteria Assessment Framework (MCAF) was developed to provide a qualitative assessment of the strategic fit, economic viability, and deliverability of the interventions included in the Long List. The goal was to use the MCAF to sift out interventions that do not perform and to organise and compare options to help develop coherent Packages of interventions.

Each intervention is scored for alignment to national, local and regional policy. Assessment scores for strategic, economic and delivery typology also inform the decision of whether to park or proceed with each intervention. A sustainability assessment of typologies in the Integrated Sustainability Appraisal (ISA) also informs the MCAF scoring of interventions.

A high-level summary of the results of the MCAF can be found in the OAR.

SEELUM testing

The South East Economy and Land Use Model (SEELUM) tests how investment in transport interventions coupled with changes to land use policy, affects transport outcomes and economic performance.

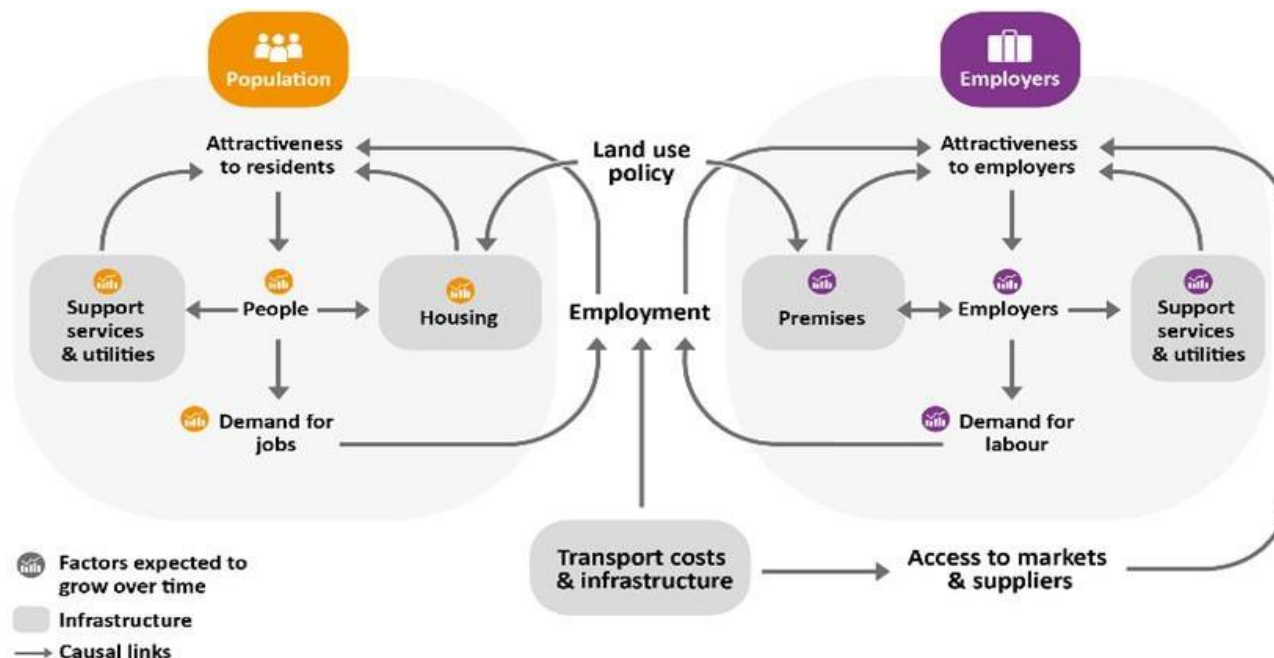
The model simulates how changes in transport connectivity and access affect how attractive zones are for employers and/or households to locate in. It simulates how land use evolves over time (see Figure 3.1).

It includes (relatively high-level) internal network models of highways and rail networks. These are used to model the impacts of congestion and crowding on journey times. SEELUM also models the carbon emissions of the highway and railway networks.

To test each Package adjustments are made to: Generalised Journey Times (GJTs) within and between each zone (by mode); and characteristics of links on the highway and railway network (notably capacity).

Each Package is modelled from a base year of 2018 for 32 years to 2050. Results are presented in the Options Assessment Reports (OARs) as a comparison to a Business as Usual (BaU) scenario, which is based on the Department for Transport's National Trip End Model (NTEM) that also projects employment and population growth to 2050.

Figure 3.1: Schematic diagram of SEELUM's analytical framework



SEELUM Results

The table below presents the results of modelling the placed-based packages of interventions for the Kent, Medway and East Sussex in SEELUM, and are in comparison to the "business as usual" forecasts. They are TfSE's own forecasts and not those of its partners. The Global Policy Package results are presented for the whole TfSE area in the Strategic Narrative.

Package	Pop.	New jobs	GVA (£m)	Total CO ₂	Car Trips (weekday return)	Rail Trips (weekday return)	Bus, Mass Transit and Ferry Trips (weekday return)	Total Trips (weekday return)	Capital Costs of Construction (£m)
KMES Classic Rail	6,150	1,500	140	-15,000	-	15,000	-	20,000	3,700
KMES High Speed Rail (East)	5,800	1,400	125	-15,000	-	15,000	-	15,000	1,000
KMES High Speed Rail (North)	11,700	2,450	225	-15,000	-	35,000	-	35,000	7,300*
KMES Mass Transit	1,550	400	45	-25,000	-50,000	-	85,000	-	700
KMES Active Travel	450	250	15	-10,000	-50,000	-	-5,000	-	100
Lower Thames Crossing	1,600	1,400	105	45,000	85,000	-	-5,000	75,000	2,800 ⁺
KMES Highways	1,200	950	90	65,000	10,000	-	-	5,000	3,800
Combined Impacts	28,400	8,400	745	30,000	-	65,000	75,000	155,000	19,400

* Assumes High Speed Rail option goes via Chatham rather than Medway City Estate or Rochester

⁺ Assumes assignment of 40% of Lower Thames Crossing capital costs to Kent geographically

Abbreviations

- MT: Mass Transit
- AT: Active Travel (walking and cycling)

Reporting units

- GVA (Gross Value Added) is £millions GVA per annum in 2050 in 2020 prices
- Carbon emissions are CO₂ tonnes equivalent
- Changes in trips are weekday return trips
- Capital Costs are "Mid Cost" estimates in 2020 prices, up to and including construction

Notes

- **The Combined Impacts results reflect the impacts of all the packages together, and therefore yield different results to the sum of the individual packages. This reflects displacement effects. For example: an individual may switch from car to bus in response to a MT package, and from car to bike in response to an AT package, but cannot switch to both when both packages are run together.**
- The carbon emissions reflect the impact of population and economic growth, as well as changes in the mode and length of trips.
- The mode of the trip shown represents the largest segment of a journey. In reality, a trip by MT is likely to include an AT element (e.g. walking to and from a bus stop).

Economic Assessment Overview

Appraisal assumptions

The appraisal approach taken aligns with the DfT's TAG.

Where benefits are monetised, they are treated in a consistent basis assuming 2021 prices, a 3.5% discount rate to 2021, and market prices through applying a 19% adjustment factor.

All quantified metrics are reported for Year 4 after the introduction of the packages of interventions and 2050. The cumulative impact up to 2050 will also be presented.

Commentary on the key assessment findings and identification of the areas of greatest uncertainty for the assessment findings are also presented.

Economic impacts

The four economic sub-impacts are assessed in a combination of qualitative, quantitative and monetary outputs, as specified in Appraisal Specification Summary Table in the ASR.

In line with the DfT's TAG, the economic impacts assessment considered journey time savings and reliability impacts (on business users and transport providers), land use development impacts (regeneration) and workforce and GVA impacts (wider impacts).

Each assessment finding, for each individual Package of interventions, are reported within the OAR. Cumulative economic impacts for the Packages of interventions within this SPOC area are provided at Part 3b.

For regeneration and wider impacts sub-impacts, SEELUM outputs for the change in housing units, employment premises, workforce, and GVA changes.

Capital cost estimates for the Packages of Interventions are provided proportionate to the level of each scheme design.

Indirect tax revenues are not assessed.

Environmental impacts

The eight environmental sub-impacts are each assessed qualitatively in the sustainability assessment of typologies.

For greenhouse gas emissions, noise and air quality, SEELUM produces estimates of carbon dioxide emissions and vehicle-kilometre estimates used to provide quantitative and monetary outputs, as specified in the ASR Appraisal Specification Summary Table.

Each these assessment finding, for each individual Package of interventions, are reported within the ISA. These findings are combined to provide the cumulative environmental impacts at Part 3c.

Social impacts

Only five of the ten social sub-impacts are assessed at this stage, in a combination of qualitative, quantitative and monetary outputs, as specified in Appraisal Specification Summary Table in the ASR.

The economic impacts assessment considered journey time savings and reliability impacts (on commuting and other users), physical activity, accidents, and access to services. Each of these assessment findings, for each individual Package of interventions, are reported within the OAR.

These findings are combined to provide the cumulative social impacts for the overview of Packages of interventions within this SPOC area at Part 3d.

For physical activity, SEELUM estimates the change in active travel demand and a qualitative assessment is presented. SEELUM's estimate of the change in private vehicle-kilometres will be used to monetise accident savings based upon Marginal External Cost values consistent with DfT guidance.

Distributional Impacts will be assessed at subsequent stages of the business case process in line with the DfT's TAG.

Economic Assessment Overview (Continued)

Uncertainties

Overview of approach

The ISA assessment of shortlisted interventions has identified significant uncertainties throughout the analysis, each of which relate to the Kent, Medway and East Sussex Sustainability Framework Objectives. A typology assessment has been carried out to identify how each intervention scores against the 13 ISA objectives, results ranged from significant positive effects to uncertain or no effects.

Economy

- There are issues regarding the uncertainty around future demand for and supply of infrastructure, as well as the spatial and temporal distribution of movement.

Environment

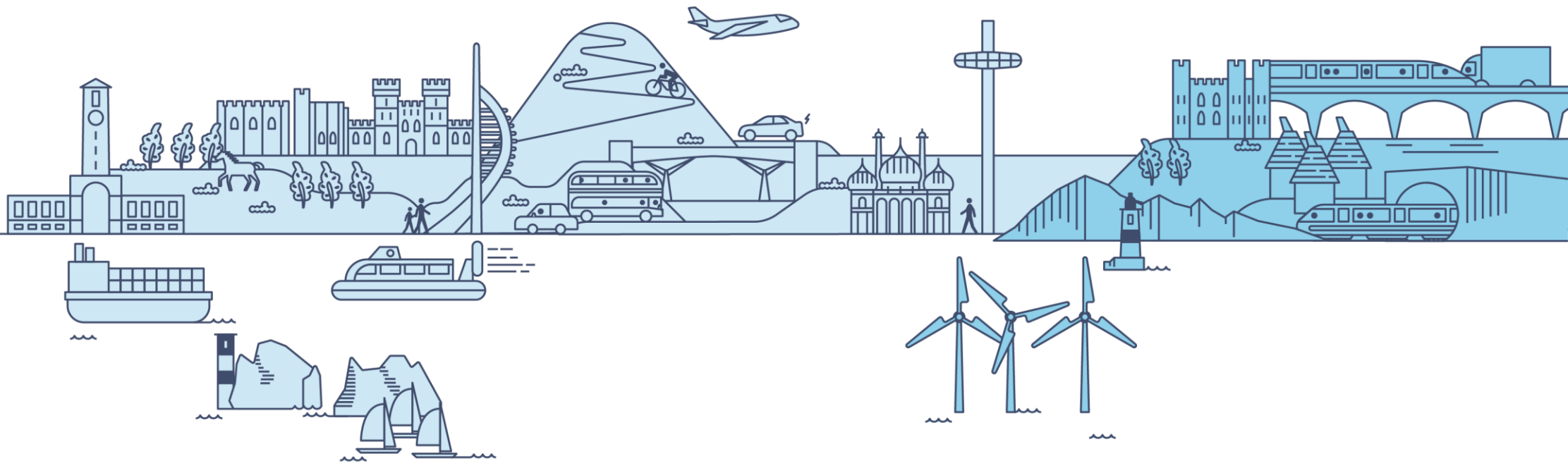
- The assessment of packages has identified a number of uncertain effects on noise and vibration. There are likely to be negative impacts on noise levels from large road and rail schemes. However, schemes such as active travel may have positive effects on noise levels.

- Improvements to rail travel have an uncertain effect upon air quality – emissions will likely increase during construction, but the modal shift to public transport could contribute to improved air quality.
- The assessment of packages has identified uncertain effects regarding biodiversity, natural capital and landscape.

Social

- Although the Kent, Medway and East Sussex Area faces many social challenges and poor transport connectivity, few uncertainties have been identified regarding social objectives as the interventions promote greater connectivity

It is important to note that mitigation measures have been proposed with the aim of preventing, reducing or offsetting any significant adverse effect of implementing the proposed interventions. In doing so, monitoring will also manage the uncertainty of proposals and measure the performance of the Packages of Interventions against any environmental objectives.



Part 3b

Economic Impacts

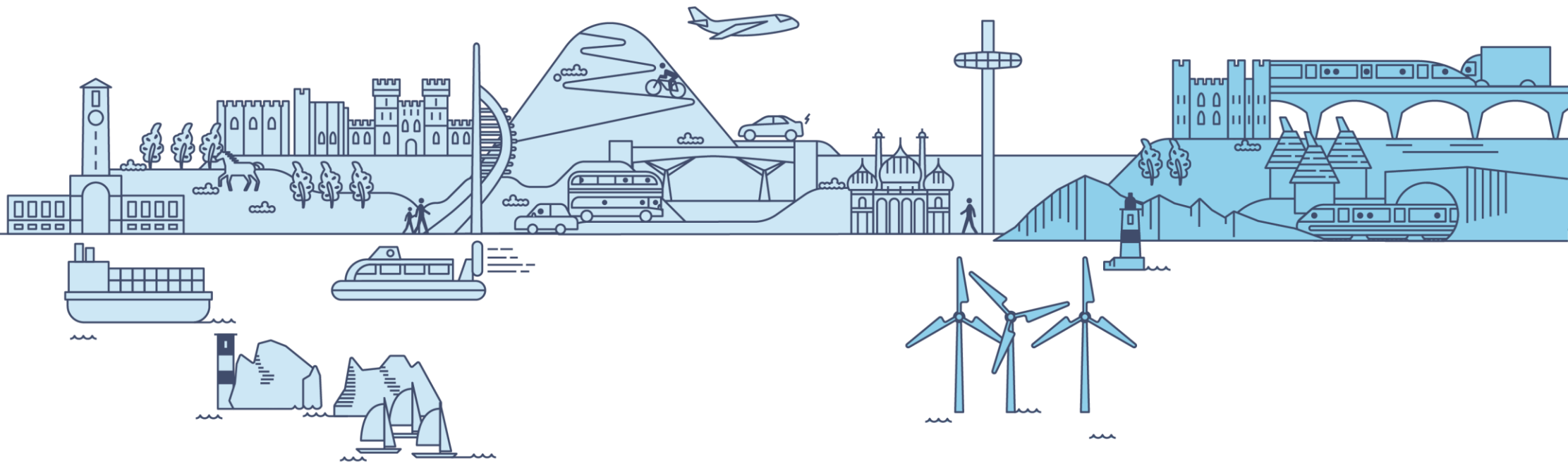
Summary of Economic Benefits

The Packages of Interventions considered in the SPOC have been assessed against the DfT's Transport Appraisal Guidance Economic sub-impacts. SEELUM modelling outputs provide quantified assessments for journey time impacts on Business Users & Transport Providers, Regeneration and Wider Impacts. A qualitative assessment of the reliability of business users has been determined using findings from the OAR.

Sub-impacts	Summary of Packages	Assessment outputs
Business Users & Transport Providers	<ul style="list-style-type: none"> Highway improvements will separate local and strategic traffic leading to reduced congestion, improved connectivity and higher efficiency in the network. These improvements will impact upon the M2/A2 and M20/A20 corridors. Improved connectivity will relieve congestion in town centres and create opportunities to improve placemaking. Improvements to bus services in Kent, Medway, and East Sussex deliver high-quality, faster, more frequent, and well connected public transport links. Would support significant mode shift from car to bus. Improved capacity, service frequencies, interchange and connectivity on the rail network, with improved access for communities. 	<ul style="list-style-type: none"> Package T, direct High Speed services from London to Eastbourne via Ashford and Hastings, would reduce journey times from Hastings/Bexhill to London by 20 minutes. Package X (Highways) will separate local and strategic traffic movements, reducing congestion and improving journey times within the Kent, Medway and East Sussex Coast Area.
Reliability Impact on Business Users	<ul style="list-style-type: none"> The SPOC Packages present a largely positive impact on reliability as they would provide high-quality and reliable bus, rail, and highway networks. An accessible transport network will enable businesses to trade and compete more effectively in the global marketplace. 	<ul style="list-style-type: none"> SEELUM estimates a net change of approximately 50,000 fewer daily return car trips by 2050 in Package V (Active Travel). Combined with higher quality public transport, active travel infrastructure would lead to significant increases in reliability for all journeys.

Summary of Economic Benefits

Sub-impacts	Summary of Packages	Assessment outputs
<p>Regeneration</p>	<ul style="list-style-type: none"> Enhancements and upgrades to public transport (e.g. increased journey time savings and increased capacity) will support growth in housing and employment. All SPOC Packages unlock opportunities for growth and regeneration in Kent Thameside, Medway and Ashford. 	<ul style="list-style-type: none"> 8,400 additional jobs will be generated by 2050 across all SPOC Packages. Public transport improvements would support The London Resort, which represents a significant employment opportunity for the whole Kent, Medway and East Sussex area.
<p>Wider and Place Based Impacts</p>	<ul style="list-style-type: none"> A more connected transport network supports growth in domestic tourism by providing access to popular attractions such as the Downs and Weald AONB. Increased tourism opportunities would facilitate a more prosperous local and regional economy. Rail and highway schemes may contribute to and enhance wider and long-term economic prosperity for those below national average unemployment areas within the region (such as North Kent, Medway and East Sussex) by facilitating the building of a strong, low carbon economy, and by providing reliable and affordable transport choice to support growth. Upgrades to the public transport network will support increased productivity from better access to a wider labour market. Stand out interventions that are likely to improve the economy significantly are the Lower Thames Crossing and Other HS1 Services Extend international services option. An increase in international services and connectivity from south of the river to the north of the River Thames will bring a substantial economic boost to the SER and the wider UK. 	<ul style="list-style-type: none"> High Speed Rail (North), delivering significant improvements in connectivity to North Kent, will generate the largest contribution to GVA growth at £225 million by 2050. There is a strong alignment of the location of interventions and those areas with highest levels of deprivation – those most in need of levelling-up (see Figure 2.40 for place-based GVA impacts of rail packages). Unquantified impacts include enhancing local accessibility to employment opportunities and key services, enhancements to public realm and pride in place (along with reduced crime and increased safety, well-being, and health) of left-behind communities.



Part 3c

Social Impacts

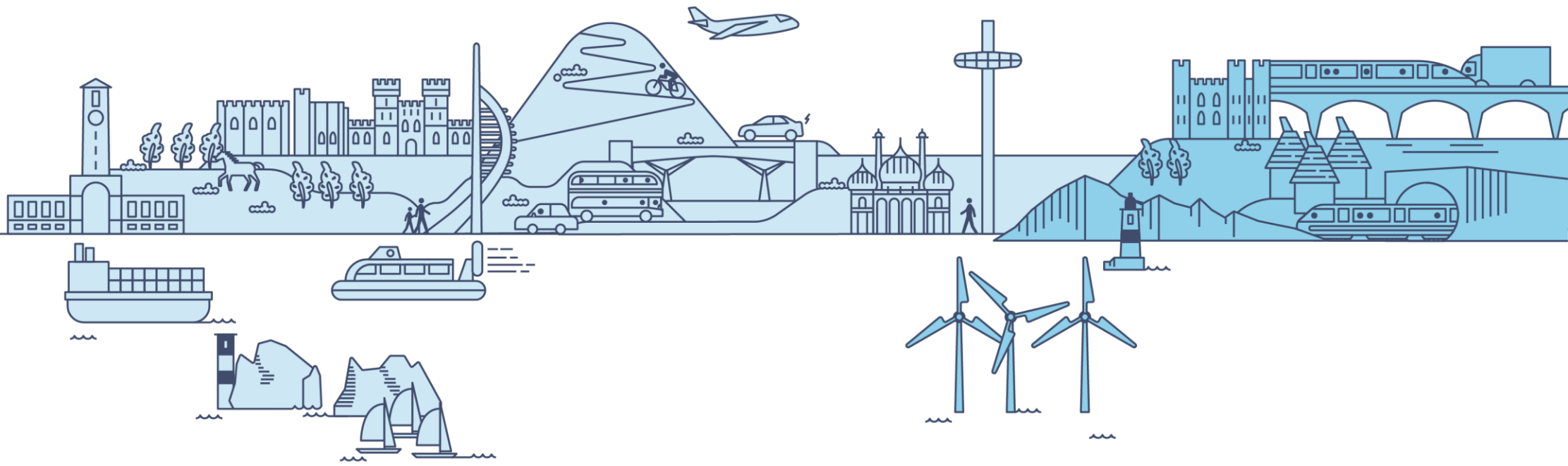
Summary of Social Benefits

The Packages of Interventions considered in the SPOC have been assessed against five of the DfT’s Transport Appraisal Guidance Social and Distributional sub-impacts. The remainder of the sub-impacts, as well as a Distributional Impacts assessment, will be considered at further stages of the business case development, and are not considered to represent a material difference to the appraisal at this stage. SEELUM modelling outputs provide quantified assessments for accidents, physical activity, and journey time impact on Commuting and Other Users. A qualitative assessment of the reliability impact of commuting and other users and access to services has been determined using findings from the OAR.

Sub-Impacts	Summary of Packages	Assessment Outputs
Commuting and Other Users	<ul style="list-style-type: none"> Evidence-based journey time savings. South East Mass Transit Package delivers transformational growth in bus journeys through high-quality, faster, more frequent, and direct public transport routes. Improved capacity, service frequencies, interchange and connectivity on the rail network with improved access for communities. Highway improvements will separate local and strategic traffic leading to reduced congestion, improved connectivity and higher efficiency in the network. These improvements will impact upon the M2/A2 and M20/A20 corridors. Improved connectivity will relieve congestion in town centres and create opportunities to improve placemaking. 	<ul style="list-style-type: none"> The South East Mass Transit Package would reduce journeys between Chatham Waterside and the Medway City Estate from c.25 minutes to c.5 minutes. Improvements in service frequencies, especially for urban metro services, will support commuters. Package X (Highways) will separate local and strategic traffic movements, reducing congestion and improving journey times within the Kent, Medway and East Sussex Coast Area.
Reliability Impact on Commuting and Other users	<ul style="list-style-type: none"> The SPOC Packages present a largely positive impact on reliability as they would provide a high-quality and resilient bus, rail, and highway network. An accessible transport network will provide reliable access for residents to employment, education, healthcare, and leisure facilities. 	<ul style="list-style-type: none"> The Mass Transit and Active Travel Packages combined could lead to a reduction of up to 100,000 weekday car journeys by 2050. This (in combination with higher quality public transport and active travel infrastructure and facilities) would lead to significant increases in reliability for all journeys.
Physical Activity	<ul style="list-style-type: none"> The Packages combined result in a significant increase in rail, bus, and active travel trips, each of which support a modal shift away from private car use. As a result, public transport encourages walking/cycling trips which could have beneficial effects on physical activity and associated health benefits. Further, improved connectivity and travel times could lead to improved mental health across the SERSA. 	<ul style="list-style-type: none"> The SPOC Packages combined will result in 20,000 more active travel trips per day by 2050. Significant mode shift from car to active travel will generate associated health benefits.

Summary of Social Benefits

Sub-Impacts	Summary of Packages	Assessment Outputs
Accidents	<ul style="list-style-type: none">• The modal shift from car to public transport and active travel has the potential to reduce the risk of major road casualties. For instance, all BRT interventions will have positive effects on safety. Fewer vehicles on highways throughout parts of the SERSA will reduce the currently high number of accidents (above national average) on the road network.• General highway enhancements, introduction of smart motorways, BRT, Active Travel, improvements to rail operations and existing infrastructure have been designed to improve transport safety and generate all positive effects.• One intervention in particular that would potentially improve the current high accident and KSI rates is the A21 Pembury – Hastings (Safety Package (RIS2) option).	<ul style="list-style-type: none">• 5,450,000 more vehicle kilometres a day as a result of all packages in 2050 compared to Business as Usual, largely as a result of the Lower Thames Crossing and related Kent Bifurcation interventions, albeit most additional vehicle kilometres segregated from the more vulnerable road users (e.g. pedestrian and cyclists).• Qualitative assessment as accidents / collisions resulting in KSIs increased.
Access to Services	<ul style="list-style-type: none">• Improved access to services will connect individuals within the Kent, Medway and East Sussex area to a wider range of jobs, services and facilities, particularly those living in rural areas.• Improved connectivity to the public transport network will particularly benefit those without access to a private car.	<ul style="list-style-type: none">• The South East Mass Transit Package would reduce journeys between Chatham Waterside and the Medway City Estate from c.25 minutes to c.5 minutes.• Package T, direct High Speed services from London to Eastbourne via Ashford and Hastings, would reduce journey times from Hastings/Bexhill to London by 20 minutes.



Part 3d

Environmental Impacts

Summary of Environmental Benefits

The Packages of Interventions considered in the SPOC have been assessed against the DfT’s Transport Appraisal Guidance Environmental sub-impacts. An Integrated Sustainability Appraisal (ISA) has been undertaken for the SERAS, which has informed the summary of environmental benefits. SEELUM modelling outputs provide quantified assessments for noise, air quality, and greenhouse gas emissions, and the remaining sub-impacts have been assessed qualitatively.

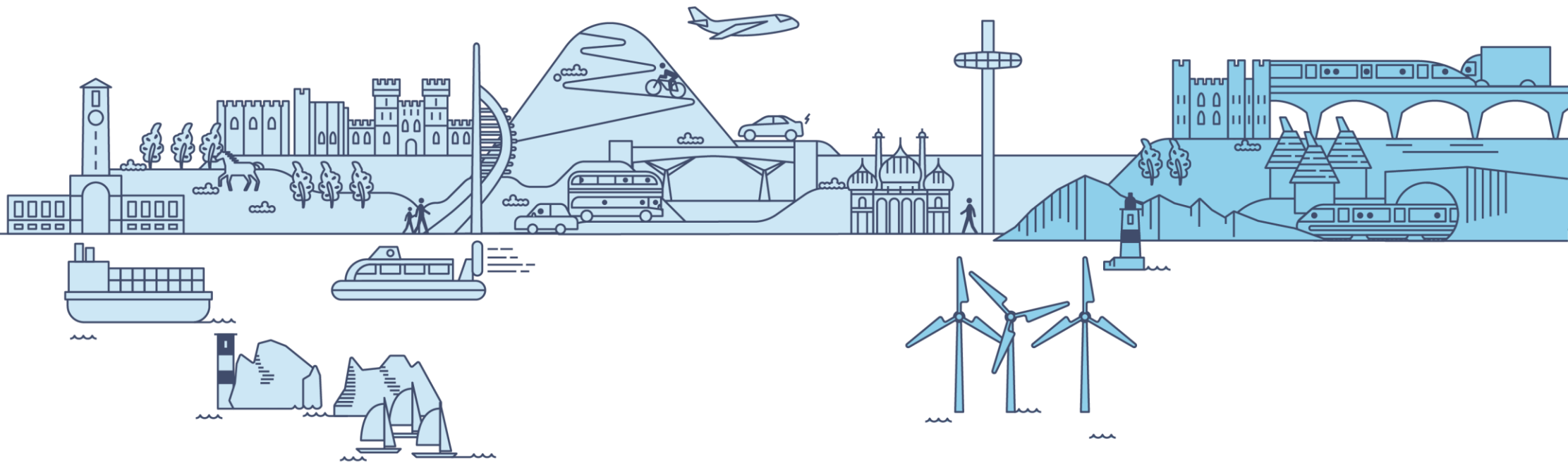
Sub-Impacts	Summary of Packages	Assessment Outputs
Noise	<ul style="list-style-type: none"> The Rail Packages (S, T & U) have the potential to reduce the number of private cars on the local road network, which would reduce noise and vibration disturbance within the SERSA. However, the delivery of large-scale new infrastructure projects such as highway (Package X) and rail developments (Packages S, T & U) will likely result in adverse effects on noise due to extensive construction works. The new Lower Thames Crossing highway will ultimately increase road traffic noise for the surrounding region. Medway and Kent Active Travel interventions will encourage a modal shift through increased walking and cycling, leading to reduced levels of traffic noise 	<ul style="list-style-type: none"> The introduction of a BRT system in Medway and expansion of a system in North Kent, as well as broader improvements to bus services and the quality of walking and cycling infrastructure could result in 100,000 fewer car trips per weekday, thus improving congestion and increasing connectivity across the SERSA. Interventions within the Package 3 could bring about 18,274 additional active travel trips (walking and cycling trips), therefore this will contribute to improved noise levels in the SERSA. The new Lower Thames Crossing (Package 4b) will result in 85,000 more car trips per day by 2050.
Air Quality	<ul style="list-style-type: none"> Both Mass Transit (e.g. improvements to bus services in Kent, Medway, and East Sussex) and Active Travel interventions (e.g. increased availability of cycleways in Medway) will support a modal shift from single occupancy journeys. This will lead to improvements in air quality (particularly in areas where AQMA are present) and has the potential to reduce transport-related emissions. Improvements in air quality in the Kent, Medway and East Sussex area will result in beneficial impacts on the local population, particularly for those who are older, younger, or suffering from respiratory illnesses. Further, improved air quality will make walking and cycling more attractive for shorter journeys. The M20/A20 Resilience Interventions option represents an opportunity to improve air quality as the development will improve the resilience and efficiency of the network. In turn, the intervention could limit the number of cars on the road and improve air quality and noise levels. 	<ul style="list-style-type: none"> Sustainable mode packages generate 85,000 additional bus journeys per weekday by 2050. In turn, they would shift results in 70,000 fewer return car trips per weekday, leading to a significant improvement in air quality. Placemaking improvements will lead to improvements in air quality in urban areas.

Summary of Environmental Benefits

Sub-Impacts	Summary of Packages	Assessment Outputs
Greenhouse Gases	<ul style="list-style-type: none"> • Almost all interventions will incur significant GHG emissions through the carbon associated with the construction, maintenance, and operation of the project. Specifically, interventions in Package 4 (Highways) would encourage increased car use and therefore contribute to increased GHG emissions, making carbon emissions targets more challenging. • Rail upgrades, improved bus services, and an increase in cycle infrastructure will provide greater capacity and efficiency across the transport network - encouraging a modal shift away from single occupancy journeys, therefore reducing GHG emissions. 	<ul style="list-style-type: none"> • Combined Global Policy Interventions deliver significant reductions in carbon emissions. • Highway upgrades to the A2 Canterbury – Dover and A21 Pembury – Hastings will encourage increased car use (both interventions increase road capacity). All interventions in the KMES Highways Package lead to an increase of 10,000 return car trips and an increase of 65,000 tonnes of CO₂e emissions a year by 2050. The Lower Thames Crossing results in 85,000 additional return car trips per weekday in 2050 and an increase of 45,000 tonnes of CO₂e emissions a year by 2050.
Landscape	<ul style="list-style-type: none"> • There is potential for negative cumulative effects on the landscape and townscape if multiple large scale road schemes (such as the A21 Pembury – Hastings and M20-A20 Resilience Interventions) were to come forward. Depending upon the number and type of options selected and their proposed location, there is potential for a substantial loss in land and loss of visual amenity which could have particular negative effects on landscapes, particularly protected landscapes such as the Kent Downs and High Weald AONBs. • Online enhancements (Highways Package) could improve access to Public Rights of Way (PRoWs), Sustrans routes, and national trails, benefiting landscape and increasing tranquillity. 	<ul style="list-style-type: none"> • The M2 Junction 4 – 7 (Additional Lane option) is located within the Kent Downs AONB and the A21 Pembury – Hastings intervention is located within the High Weald AONB. The construction of these interventions could significantly negatively effect the surrounding landscape and would result in substantial loss of land and loss of visual amenity.
Townscape	<ul style="list-style-type: none"> • Interventions that reduce congestion, noise levels, and GHG emissions (most notably upgrades to bus services in Kent, Medway and East Sussex) will have a positive impact on local townscape. Improvements to public transport and active travel networks will bring about positive placemaking opportunities. • However, large-scale infrastructure projects (e.g. Lower Thames Crossing) may erode townscape character. Therefore, insensitive design and land take could result in negative effects on unique townscapes in the SERSA. 	<ul style="list-style-type: none"> • The Active Travel Package would boost cycling and walking trips by 6%, therefore improving the area’s townscape through a mode shift from car to active travel.

Summary of Environmental Benefits

Sub-Impacts	Summary of Packages	Assessment Outputs
Heritage of Historic Resources	<ul style="list-style-type: none"> The Kent, Medway and East Sussex area is home to some of the country’s most iconic historical environments and cities (e.g. Kent’s Heritage coastline and Dover Castle). There are opportunities to protect and enhance historic environments through improved design and landscaping. Multiple interventions (such as, CrossRail options and A28 Birchington-on-Sea) are located within close proximity to cultural heritage sites. New rail infrastructure risks damage to heritage assets like scheduled monuments and Grade 1 listed buildings. However, improved public transport and active travel options could improve the setting of unique heritage assets due to a reduction in private vehicle use, which could increase tranquillity and have beneficial effects on placemaking. 	<ul style="list-style-type: none"> The proposed high speed rail interventions in Package U (High Speed North) are located near several places that display high levels of cultural heritage (e.g. East London and Rochester). Therefore, insensitive design and land take could result in major visual effect and will detract from heritage assets.
Biodiversity	<ul style="list-style-type: none"> The development of multiple large-scale road and rail schemes would result in substantial loss of land comprised of priority habitats, segregation of priority habitats and disturbance to designated ecological sites. Active travel schemes (e.g. the Medway, Kent and East Sussex Active Travel interventions) could be designed to enhance biodiversity value – e.g. through creation of linking corridors. Interventions that support a modal shift to sustainable transport will benefit biodiversity through reduced disturbance to habitats and other sensitive environments. 	<ul style="list-style-type: none"> The proposed Crossrail extension infrastructure intersects designated sites and priority habitats such as the Thames Estuary & Marshes Ramsar, SSSIs, SACs, SPAs, LNR, and NNR. Careful design will be needed to ensure that infrastructure required for these options doesn’t result in further degradation and disturbance of these significant sites and the unique habitats and species that reside within them.
Water Environment	<ul style="list-style-type: none"> All SPOC Packages are likely to have significant negative effects on the water environment as several interventions are located in close proximity to local water bodies and risk contamination during the construction and development stages. 	<ul style="list-style-type: none"> The North Kent Connectivity intervention intersects the River Medway. As such, pollution and runoff from activities associated with the construction stage is likely to occur.



Part 3e

Conclusion and Value for Money Statement

Conclusion

The SPOC Packages will deliver an efficient, multi-modal transport system that will transform travel in the SPOC area. The impacts of the SPOC Packages support the delivery of the strategic objectives outlined here.

Climate Change

- Most interventions are likely to result in an increase in GHG emissions through the carbon associated with the construction, maintenance and operation of interventions. However, the improvement of the rail and bus network could reduce GHG emissions over their operational lifecycles and encourage modal shift towards public transport.
- Combined Global Policy Interventions deliver significant reductions in carbon emissions.
- Mode shift from car to active travel modes will result in a significant contribution towards reducing carbon emissions and improving local air quality levels.

- The transport network will be more resilient to climate events such as flooding, high temperatures, droughts and storms.

Regeneration

- A wider segment of the area's population will have access to employment, education, and training opportunities through the enhancements and upgrades to public transport (e.g. increased journey time savings and increased capacity).
- The Packages will unlock opportunities for growth and regeneration in Kent Thameside, Medway and Ashford, including through the reallocation of road space facilitated by highway network improvements.

International Gateways

- Improved public transport corridors will provide more resilient sustainable access to the international gateways in the area.

- The highway network connecting international gateways to the rest of the UK will benefit from highway improvements to separate local and strategic traffic movements, reducing congestion and improving journey times within the Kent, Medway and East Sussex Coast Area.

Economy

- Upgrades to the public transport network within the Kent, Medway and East Sussex Coast Area will unlock access to an enlarged labour market and increased agglomeration.
- In turn, greater access and connectivity to the South East area could facilitate tourism opportunities, which will further boost the local and regional economy.

Society

- The SPOC Packages have the potential to support better placemaking. This will be achieved by reducing the number of cars on the road, improving levels of congestion, and reducing noise and air pollution levels.
- All Packages will connect communities to a wider range of jobs, services and facilities both within and outside of the study area. This will particularly benefit those without access to a private car.

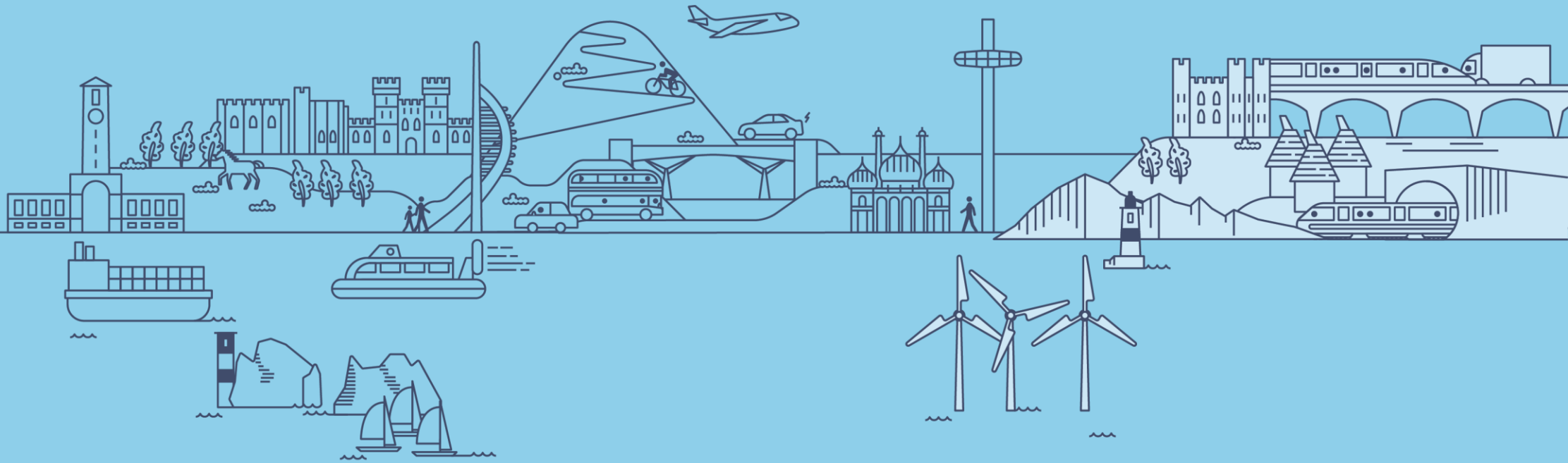
Economic Assessment Overview

Natural and Historic Environment

- All packages will adopt the principles of environmental net gain through their design development.

Value for Money Statement

- The value for money for the packages will consider the strategic fit and the quantified economic appraisal results. The quantified economic results are likely to vary widely between different types of schemes, but as a whole the SPOC is anticipated to represent value for money and to support the region in delivering across a number of policy ambitions.
- In addition to the monetised benefits captured above, the SPOC Packages are anticipated to result in a range of social benefits. The interventions will provide sustainable public transport alternatives, in turn reducing congestion and traffic delays which will improve the quality of life for residents within the Solent and Sussex Coast Area and achieve transport equality.
- There are likely to be several net environmental disbenefits as a result of the scheme. Noise, GHG emissions and air quality are likely to worsen during the construction stages of large-scale road and rail projects. However, it is important to consider the long term gains in generating a significant shift from private car use to public transport which supports environmental objectives.



Part 4

Financial Dimension

Overview of the Financial Dimension

The Financial Dimension considers the affordability of the Packages for the Kent, Medway and East Sussex Coast Area.

The Financial Dimension includes:

- Capital funding requirements;
- Operational and maintenance funding requirements; and
- Affordability considerations.

Contents

Part 4a sets out the indicative funding requirement for the SPOC Packages.

It presents:

- An overview of the cost estimation approach and key assumptions;
- The capital cost estimate for all of the Packages of Interventions; and
- Maintenance and renewal estimates

Part 4b outlines affordability considerations.

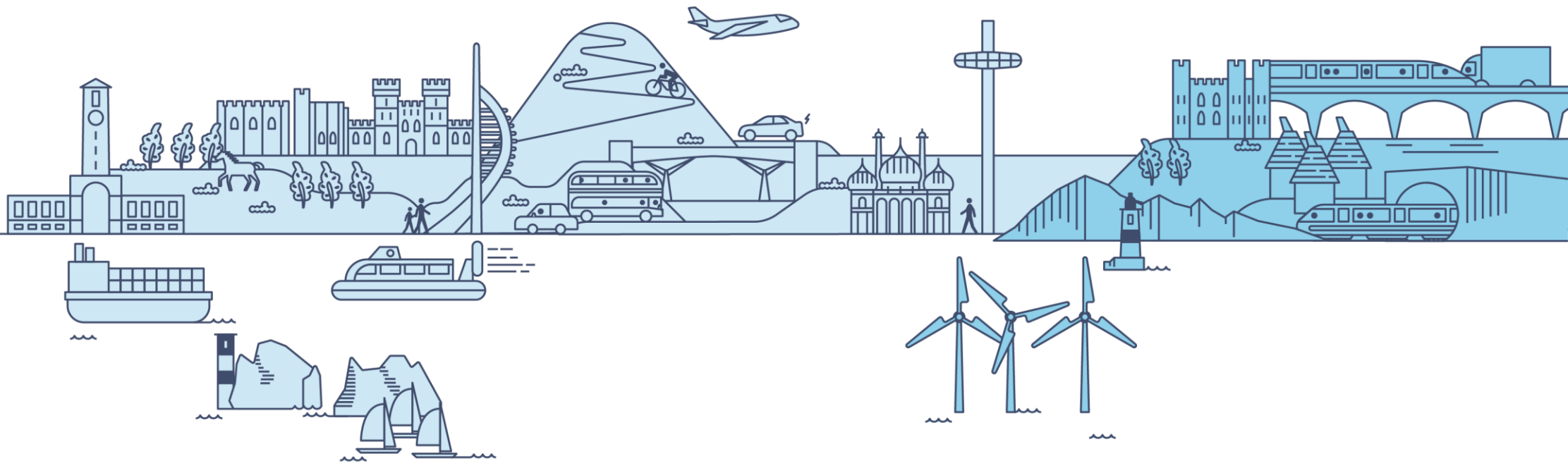
It sets out:

- Considerations for funding the capital cost requirement; and
- Potential sources for the funding and financing of the SPOC Packages.

Alignment with Department for Transport Business Case Guidance

The table below sets out DfT's requirements for the Financial Dimension and the level of detail expected at Strategic Outline Case stage. The final column of the table shows where the Financial Dimension addresses each requirement.

TAG Issue	TAG Requirement	Progress at SOC	Reference
Introduction to affordability	Outline the approach taken to assess affordability	Outline	Part 4b
Budgets and funding cover	Provide analysis of the budget and funding cover for the proposal: set out, if relevant, details of other funding sources	Outline	Part 4b
Costs	Provide details of the expected whole life costs, when they'll occur, breakdown and profile of costs by those parties on whom they fall, and any risk allowance required.	Outline	Part 4a & 4b
Accounting implications	Describe the expected impact on the organisation's balance sheet	Not Required	N/A



Part 4a

Funding Requirements

Capital Costs

Overview

The capital cost estimates have been prepared to a level of detail commensurate with the maturity of the design of the interventions.

Items and quantities have been priced using either published costs or built up based upon industry standard rates.

Where intervention estimates have been built up, percentage allowances have been added for design fees, STATS and land costs.

To reflect the maturity of the design a risk allowance has been applied.

All estimates have a base year of 2020.

The maintenance and renewal estimates are based on an allowance of the capital cost estimate.

Capital cost estimates for the interventions are based on current published OAR, SOC, OBC and FBC estimates where these exist and have been located.

Those interventions that have no published cost information available have had their construction costs built up based on type of intervention (rail, MRT, highways, active travel and placemaking), high level scope (route lengths, number of stations, allowances for structures, major junction improvements etc), location (urban or rural), nature (standard or high spec/'statement' intervention, all new or upgrades).

The resulting items and quantities have been priced using historic project data and industry standard published data, with cognisance made of the location and nature of the intervention. Allowances have been made for main contractor's preliminaries and overhead and profit on the same basis.

Percentage allowances to cover for professional/Client fees, STATS and land costs have been applied to the construction costs at levels based on amounts allowed for generally in business cases and from experience in working on rail and highway schemes with Network Rail and National Highways.

Risk

To reflect the lack of maturity of the design on which these 'bottom up' estimates are based, risk allowances have been applied at levels commensurate with SOC estimates, informed by TAG as follows detailed in the table below.

Mode	Allowance	Rationale
Rail and Mass Rapid Transit	56%	Latest TAG (as of May 2021) SOC level OB for rail – Considered to be similar for MRT
Highways and Active Travel	46%	Latest TAG (as of May 2021) SOC level OB for roads
>£250m and complex schemes	200%	Supplementary Green Book Guidance on OB - upper value for development

Price Ranges

Estimates have been presented as low, medium and high range of costs. This reflects a level of uncertainty in cost estimating accuracy, due to the lack of maturity of the design for many schemes, but these are typically +/- 10-15% in relation to the medium cost.

Capital Costs

The Table below presents the Capital Cost Estimates for the Kent, Medway and East Sussex Packages.

Package Description	Low Cost (£m, 2020 prices)	Mid Cost (£m, 2020 prices)	High Cost (£m, 2020 prices)
KMES Classic Rail	3,300	3,700	4,100
KMES High Speed East	850	950	1,000
KMES High Speed North (via Chatham)*	6,500	7,300	7,700
KMES Mass Transit	650	700	750
KMES Active Travel	50	100	100
KMES Strategic Highways	3,400	3,800	4,200
Lower Thames Crossing (Kent) +	2,500	2,800	3,100
TOTAL Kent, Medway and East Sussex	17,400	19,400	20,900

* Assumes High Speed Rail option goes via Chatham rather than Medway City Estate or Rochester

+ Assumes assignment of 40% of Lower Thames Crossing capital costs to Kent geographically

Capital Costs

Maintenance and Renewals

Having reviewed historical data of similar types of schemes, maintenance and renewals average circa:

- 2.56% of capital costs for rail, over a 30-year period.

This is made up of a typical rate of:

- 0.08% per year for maintenance
- + 0.1% in year 20 for renewal
- + 0.16% in year 30 for a further renewal

7.5% of capital costs for MRT, active travel and highways, over a 30-year period.

This is made up of a typical rate of:

- 0.1% per year for maintenance
- + 1.5% in year 20 for renewal
- + 3% in year 30 for a further renewal

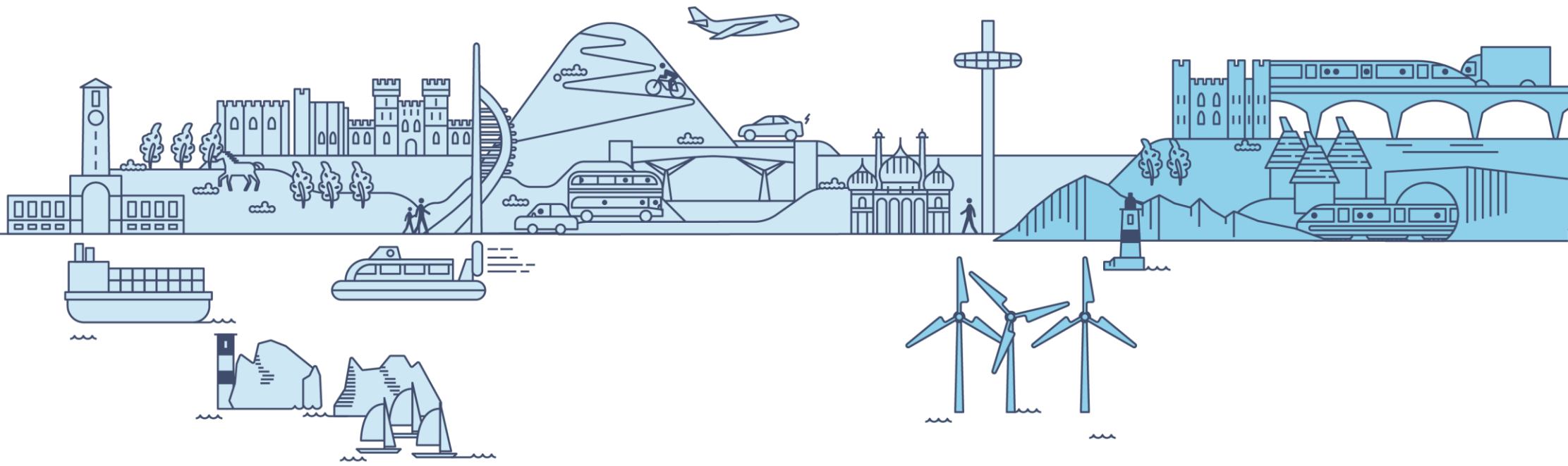
The table shows a flat rate of 2.56% and 7.5% respectively applied against the 2020 base price of each package of interventions.

Annual maintenance and renewal cost estimates for the Kent, Medway and East Sussex Coast Packages are presented in the table to the right.

Package Description	Mid Cost (£m, 2020 prices)
KMES Classic Rail	95
KMES High Speed East	25
KMES High Speed North (via Chatham)*	190
KMES Mass Transit	55
KMES Active Travel	5
KMES Strategic Highways	290
Lower Thames Crossing (Kent) ⁺	210
TOTAL Kent, Medway and East Sussex	865

* Assumes High Speed Rail option goes via Chatham rather than Medway City Estate or Rochester

⁺ Assumes assignment of 40% of Lower Thames Crossing capital costs of £6,000m to Kent geographically



Part 4b

Affordability

Funding Sources

Funding Sources

There are a number of funding sources to potentially support infrastructure investment in the South East.

These funding sources, identified below, vary in the likely amount of funding they will generate and the challenges associated with their implementation. Additionally, new funding sources may emerge in response to environmental, economic and social changes over the life of TfSE's Transport Strategy.

Potential funding sources include:

- Central Government funding, e.g. Housing Infrastructure Fund, Transforming Cities Fund
- Rail Enhancement/Renewals funding, e.g. Rail Network Enhancements Pipeline
- National Roads Fund, e.g. Roads Investment Strategy, Major Road Network
- Third party contribution, e.g. from major private sector investors, land/asset owners, and developers
- Local rates/levies, e.g. Work Place Parking Levy, Business Rate Supplement

Affordability

To afford the identified cost of the proposed packages a range of funding and financing sources will be required.

A large proportion of this funding should be secured from local sources, with the funding strategy seeking to capture part of the value from the investment that accrues to a range of local beneficiaries.

The development of the funding strategy will therefore consider ways of capturing the uplift in benefits enabled by the interventions as this will reduce reliance on the public purse. Capturing these benefits to generate funding for transport infrastructure can be achieved by developing an appropriate funding package.

Currently, TfSE do not have the powers to raise funding. Dependent on the level of devolution granted by central government, TfSE could gain these powers, as well as utilising the powers available to local councils and authorities that are partners to TfSE.

Given the scale of investment proposed and the range of transport infrastructure interventions, a portfolio of funding sources will be required reflecting the nature of beneficiaries and the criteria for the funds.

An additional potential funding source will be farebox revenue from the surplus from public transport services, once operating costs are met.

TfSE would not collect these additional funds themselves so they would be required to work with local transport providers to understand if this is a viable funding mechanism for transport infrastructure improvements.

Developing the Indicative Spend Profile

An estimated total implementation time was calculated using sub-categories of intervention displayed on the table overleaf.

Current Stage

Stages of scheme development for each intervention type are identified below and used in the table overleaf. The project stages used were:

- Pre-SOBC (Preparation for the Strategic Outline Business Case)
- SOBC (Strategic Outline Business Case)
- OBC (Outline Business Case)
- FBC (Full Business Case)
- Pre-DCO (Development Consent Order) / PI (Public Inquiry)
- DCO (Development Consent Order) / PI (Public Inquiry)
- Delivery (or construction / implementation)

Where information on the project stage was missing or clearly in a very early concept stage, the intervention was assumed to be at the Pre-SOBC stage.

For smaller or simpler interventions, not all stages may be required.

Implementation Time

The total implementation time assumptions for each of these range from 0-2 years for an active travel service improvement to 15-20 years for a new offline rail infrastructure scheme (see table overleaf).

If there was published information for a particular intervention on the construction start year, end year and/or construction duration then this was applied instead of the assumed construction time.

Phasing

A high level forecast was also calculated, categorising the schemes into:

- Short-term
- Medium-term
- Long-term

Short-term schemes were judged to have a construction start date in 2030 or before. Medium-term schemes were judged to have a construction start date between 2031 and 2040. Long-term schemes were judged to have a construction start date 2041 onwards.

For the spend profile, an even distribution of was assumed between the construction start year and construction end year for each intervention. The total for all the interventions in that year provides the total construction spend estimated for each particular year.

As only a small proportion of total capital spend takes place prior to construction, all capital spend were assumed to be incurred during construction.

Developing the Indicative Spend Profile

Indicative timescales for different intervention categories

Category	Sub-Category	Time	Max Years	Pre-SOBC	SOBC	OBC	FBC	Pre-DCO/PI*	DCO/PI*	Delivery
Rail	Rail - New Offline Rail Infrastructure	15-20 years	20	20	15	12	10	8	6	5
Rail	Rail - New Online Rail Infrastructure	5-10 years	10	10	7	6	5	4	3	2
Rail	Rail - Service Improvement	0-7 years	7	7	5	4	3	N/A	N/A	1
Rail	Rail - Reinstating Line	10-15 years	15	15	12	10	8	7	5	4
Rail	Rail - Level Crossing Removal	5-7 years	7	7	6	5	4	3	2	1
Mass Rapid Transit	MRT - New BRT/MRT	5-10 years	10	10	7	6	5	4	3	2
Mass Rapid Transit	MRT - New Ferry/Waterway	5-8 years	8	8	6	5	4	N/A	N/A	2
Mass Rapid Transit	MRT - Service Improvement	0-5 years	5	5	4	3	2	N/A	N/A	1
Mass Rapid Transit	MRT - New Strategic Mobility Hub	3-5 years	5	5	4	3	2	2	1	1
Mass Rapid Transit	MRT - Infrastructure Improvement	3-5 years	10	10	8	7	6	N/A	N/A	1
Active Travel	Active Travel - New Cycleway/Footways	2-5 years	5	5	4	3	2	N/A	N/A	1
Active Travel	Active Travel - Improved Cycleways/Footways	1-3 years	4	4	3	2	1	N/A	N/A	1
Active Travel	Active Travel - Service Improvement	0-2 years	4	4	3	2	1	N/A	N/A	1
Active Travel	Active Travel - Mobility Hubs	2-3 years	3	3	3	3	2	2	1	1
Active Travel	Active Travel - Online Road Improvements	2-3 years	3	3	3	3	2	N/A	N/A	1
Active Travel	Active Travel - Offline Road Improvements	3-5 years	5	5	4	3	3	2	1	1
Highways	Highways - Junction Improvement	3-5 years	5	5	4	3	3	2	1	1
Highways	Highways - Widening	3-5 years	5	5	4	3	3	2	1	1
Highways	Highways - New Online Infrastructure Improvement	3-5 years	5	5	4	3	3	2	1	1
Highways	Highways - Bridge/Tunnel	15-20 years	20	20	15	12	10	8	6	5
Highways	Highways - Bypass/Relief road	10-15 years	15	15	12	10	8	7	5	4
Highways	Highways - Lorry Park	5-7 years	7	7	6	5	4	3	2	1
Highways	Highways - Service Improvement	2-5 years	4	4	3	2	1	N/A	N/A	1

* If required.

Developing the Indicative Spend Profile

Potential Scheme Promoters

An indicative spend profile for the SPOC interventions has been developed. This will be developed further as work progresses.

To develop an indicative spend profile by scheme promoter, a category was applied to each intervention according to its type.

The assumed scheme promoters spending categories and the corresponding funding source were as follows, but noting that there is an important role for the private sector, partnerships, and innovative funding and financing tools:

- **Rail** – Network Rail
- **Mass Rapid Transit** – Local Transport Authorities
- **Active Travel** – Local Transport Authority
- **Strategic Road Network** – National Highways
- **Major Road Network** – Local Transport Authority

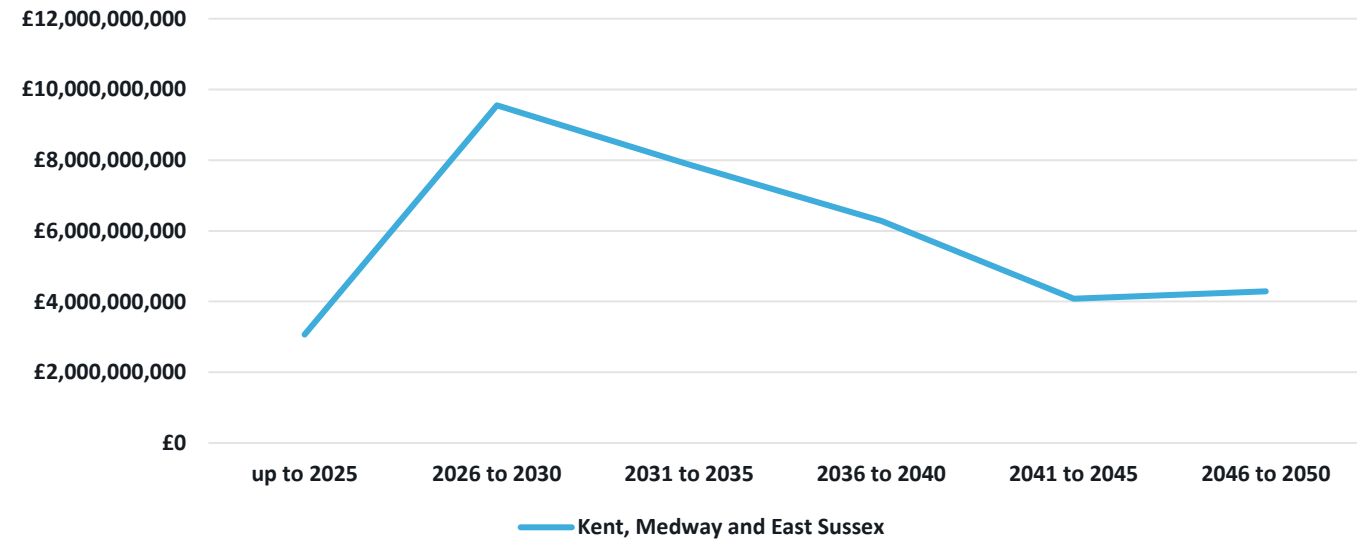
Indicative Funding Profile

Spend by potential scheme promoter

Potential Funder	Mid Cost (£m), 2020 prices
Network Rail	12,000
National Highways	6,000
Local Transport Authority	1,400
Total	19,400

Spend profile (in outturn prices)

Delivery Window	To 2025 (£m)	2026-2030 (£m)	2031-2035 (£m)	2036-2040 (£m)	2041-2045 (£m)	2046-2050 (£m)
Capital Cost	3,100	9,500	7,900	6,300	4,100	4,300



Funding and Financing

Financing upfront costs

To bridge the mismatch in timing between the costs of implementing the interventions and the realisation of the resulting funding streams, financing for the packages will be required.

As with the funding sources described above, there are a number of potential financing opportunities, each with different criteria and challenges to TfSE. These include:

- Public Work Loans Board, the largest lender to local authorities
- UK Infrastructure Bank, recently established by government to increase infrastructure investment
- Commercial Lending, an option if more attractive options such as PWLB or UKIB are unavailable

Funding and Financing Strategy

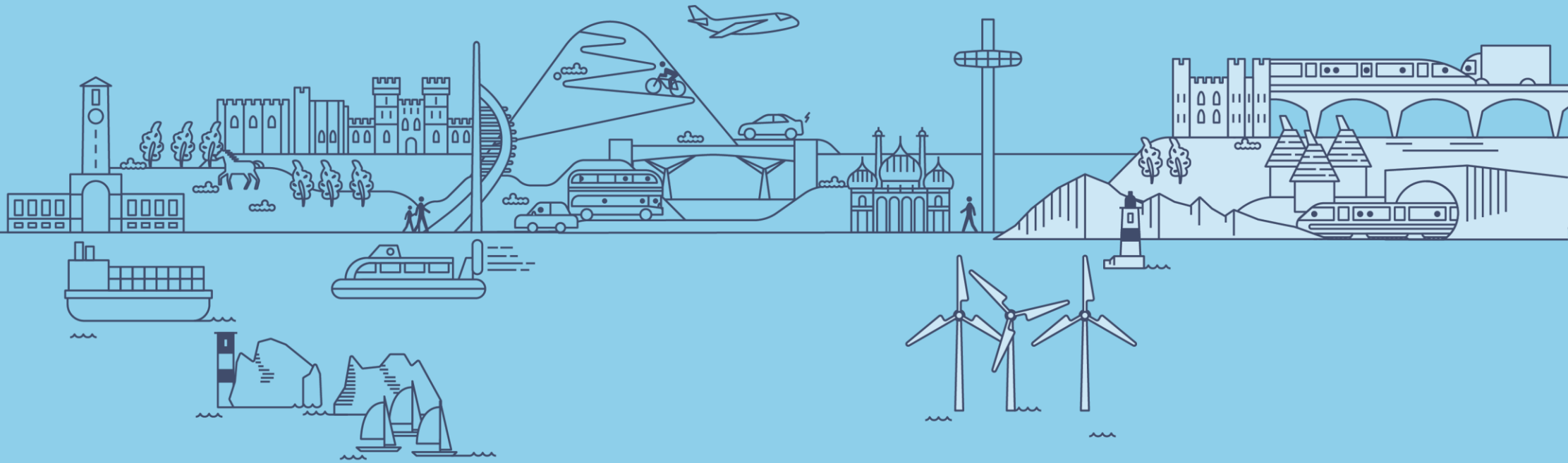
A robust funding and financing strategy is required to ensure the affordability of the packages set out in this SPOC.

At this stage it is anticipated that the strategy will be framed by the following principles:

- Drawing on local funding sources for a significant proportion of funding required to deliver the transport infrastructure proposals
- Funding sources to cover operating, maintenance and ideally renewal costs
- TfSE working with local authorities to ring-fence revenue for transport infrastructure investment
- Attracting new investment (with associated taxes) to the region through enhanced connectivity brought by the new infrastructure

Further detail on the funding and financing strategy will be set out in the Strategic Investment Plan, which will document the anticipated investment profile over the life of the Transport Strategy and the associated funding and financing mechanisms required to deliver them.

The Strategic Investment Plan will further explore the requirement for government funding, which will partially be used for the development of schemes.



Part 5

Commercial Dimension

Introduction

Overview of the Commercial Dimension

The Commercial Dimension addresses the commercial viability of delivering the Packages of Interventions.

The Commercial Dimension outlines the viable procurement options to engage the appropriate service providers in the delivery of the Package of Interventions. The level of detail reflects the early stage of programme development and the level of detail available for the schemes identified in the Packages of Interventions.

It therefore demonstrates the various procurement options available without determining the preferred procurement route, and in doing so identifies the potential roles for TfSE and its partners in the delivery of the Transport Strategy.

The Commercial Case for the Packages of Interventions will be developed in further detail as part of the Strategic Investment Plan and within the individual Packages of Interventions specific OBC stage.

Contents

Part 5a Viability

This identifies the elements needed to structure a procurement strategy, such as:

- Understanding of the services;
- Output specification;
- Market assessment;
- Deliverability assessment, and
- Risk assessment and management.

Part 5b Procurement

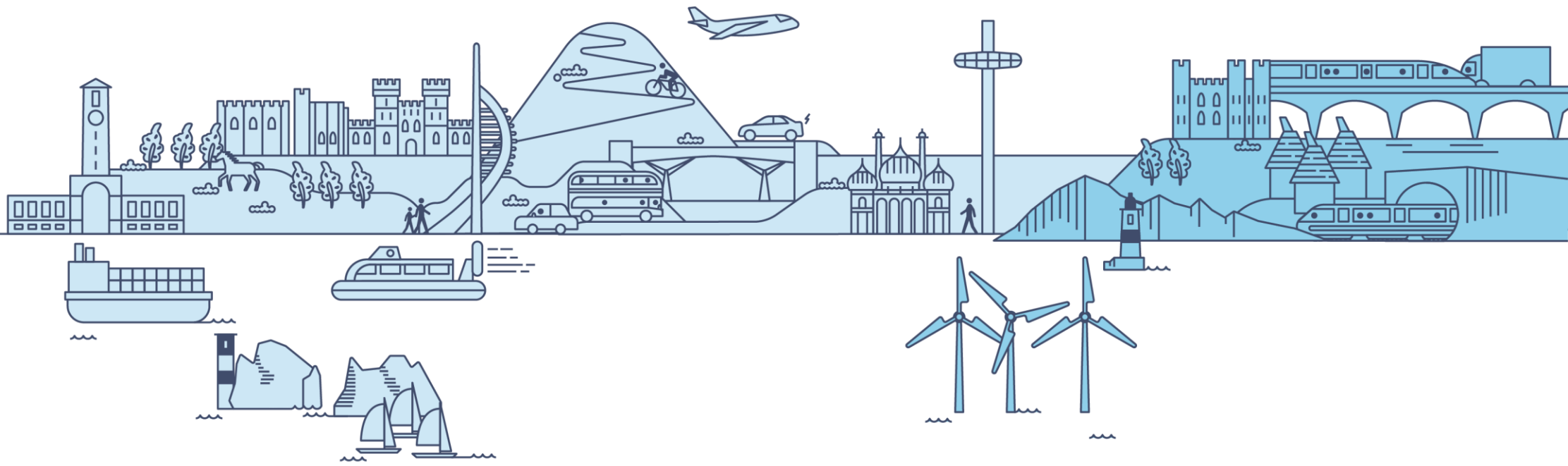
Outlines the available routes in terms of:

- Procurement models;
- Delivery models; and
- Contract strategies.

Alignment with Department for Transport Business Case Guidance

The table below sets out DfT's requirements for the Commercial Case and the level of detail expected at Strategic Outline Case stage. The final column of the table shows where the Commercial Dimension addresses each requirement.

TAG Issue	TAG Requirement	Progress at SOC	Reference
Commercial approach	Outline the approach taken to assess commercial viability	Complete	Part 5a
Output-based specification	Summarise the requirement in terms of outcomes and outputs, supplemented by full specification as an annex	Outline	Part 5a
Procurement strategy	Detail the procurement and purchasing options including how they will secure the economic, social, and environmental factors outlined in the economic dimension	Outline	Part 5b
Human resource issues	Describe any personnel, people management and trade union implications, where applicable, including TUPE regulations	Partial	Part 5b
Sourcing Options	Explain the options for sources of the provision of services to meet the business need: this may include partnerships, frameworks and/or existing supplier arrangements, with the rationale for selecting preferred sourcing option.	Outline	Part 5b
Payment mechanisms	Set out the proposed payment mechanisms that will be negotiated with the providers	Not Required	N/A
Pricing framework and charging mechanisms	Include incentives, deductions and performance targets	Not Required	N/A
Risk allocation and transfer	Present an assessment of how the types of risk might be apportioned or shared, with risks allocated to the party best placed to manage them subject to achieving value for money	Not Required	N/A
Contract length	Set out scenarios and rationale for contract length, including proposed key contractual clauses	Not Required	N/A
Contract management	Provide a high-level view of implementation timescales: detail additional support for in-service management during rollout and closure and set out arrangements for managing the contract through project or service delivery	Not Required	N/A



Part 5a

Viability Considerations

Viability Considerations

Understanding the Services

At this stage TfSE will act as the leading promoter of the Packages of Interventions. It has been established that this includes a variety of projects, stakeholders and potential service providers.

Confirmation of the scope and key service requirements of each Package of Interventions will be the first step towards the understanding of its viability.

TfSE in discussion with relevant partners identified hereafter should seek to confirm in principle:

- ‘Core’ services to be procured to justify the investment and achievement of benefits as set out in the Strategic Dimension;
- ‘Desirable’ additional services which can be still justified on a VfM basis; and
- ‘Optional’ services that are beneficial, possible and affordable.

Table 5.1 presents our assumptions for the proposed key delivery partners for each Package of Interventions included in this SPOC. It is likely to be a combination in many instance, either for a single intervention or different interventions within a package.

Table 5.1: Packages of Interventions

Package of Intervention	Proposed Key Delivery Partners
KMES Classic Rail	DfT – Network Rail – Local Authorities – Operators – Private Sector
KMES High Speed (East)	DfT – Network Rail / HS1 – Local Authorities – Operators – Private Sector
KMES High Speed (North)	DfT – Network Rail / HS1 – Local Authorities – Operators – Private Sector
KMES Mass Transit	DfT – Local Authorities – Network Rail – National Highways – Operators – Private Sector
KMES Active Travel	DfT – Local Authorities – Sustrans – National Highways – Private Sector
KMES Highways	DfT – National Highways – Local Authorities – Private Sector
Lower Thames Crossing	DfT – National Highways – Local Authorities – Private Sector
Global Policy Package	DfT – National Highways – Network Rail – Other Government Departments and their agencies – Operators – Local Authorities – Operators – Private Sector

For many interventions, it is likely TfSE will be a key delivery partner, and for some interventions, it may be beneficial for TfSE to be a (co-)scheme promoter.

In many instance, DfT are likely to be a key delivery partner through funding or interventions requiring ministerial approval.

Viability Considerations

Output Specification

To ensure the ‘right thing, is being bought in the right way’ a clear output specification will be required for each Intervention.

Reflecting the level of definition for many of the Interventions under consideration in this SPOC, the Deliverability Assessment undertaken for the Options Assessment Report (OAR) considered a range of criteria at a high level for each typology. (These are set out under Deliverability Assessment below.)

Central to ensuring a robust procurement strategy will be determining a detailed output specification for each intervention and reconfirming their deliverability and areas of risks.

Market Assessment

The range of intervention typologies represented in the SPOC Packages are generally reasonably technically mature proposals and therefore there is confidence that the supplier market has the capability and capacity to deliver them.

As illustrated in the MCAF analysis of deliverability for the OAR, each of the typologies was assessed not to present a significant technical risk and an established supplier market is known to exist (e.g. for highway and rail enhancements, mass rapid transit, mobility hubs).

Additionally, the Packages of Interventions identified in this SPOC provide a divisible programme of schemes. This provides flexibility in the scale and timing of delivery of the interventions, aiding the development of a pipeline and hence ensuring supplier capacity.

Sponsorship/ Procurement Options

The range of typologies and divisible nature of the Packages of Interventions identified in this SPOC provides an opportunity to select the best sponsorship and delivery model for each Intervention or Package of Interventions.

Given this flexibility, there are a range of routes to market. It is anticipated that a number of separate scheme promoters and delivery contracts will be required.

Further, given the anticipated timescales for delivering the full set of Packages, it is likely that the procurement options available to the scheme promoters, particularly in terms of specific contracts, will change during the lifecycle of the project. Therefore, the commercial and procurement strategy will evolve as the programme develops.

Potential sponsors will include:

- TfSE
- Local Authorities
- National Highways
- Network Rail
- DfT

Viability Considerations

The Multi Criteria Assessment Framework applied at the OAR stage 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 range. 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 the 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 allocated 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 general 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.

Only the interventions which were assessed as being deliverable, namely were scored more highly, were progressed to the packaging of interventions stage and considered in this SPOC.

Viability Considerations

Risk Assessment

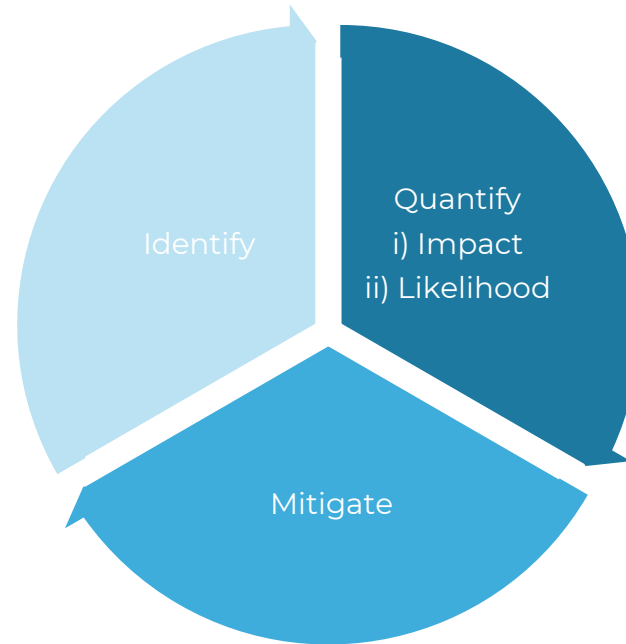
For each Package risks should be identified, quantified and mitigated in line with the methodical approach outlined within HM Treasury's Green Book.

The scheme risks can largely be grouped into the following categories:

- Risks to the project programme
- Political risks
- Risks to scheme cost
- Risks to scheme funding
- Risks to operations
- Design and information risks
- Health and safety risks
- Reputational risks

Risk should be quantified by assessing the likelihood (or probability) of them occurring, denoted as 'P', and the severity of impact on the project, denoted as 'I'. Using a 5-point scale from 1 (low) to 5 (high) the significance of these factors can be scored. These scores are multiplied by each other ($P \times I$) to determine the total risk score, which ranges from 0-25.

Figure 5.1: Approach to Risk Assessment



An illustration of an approach to risk assessment is shown in **Figure 5.1**.

Following the initial assessment of scheme risks, a systematic approach should be adopted to respond to risks and allocate responsibility to the most appropriate party in line with the governance arrangements.

One of the following four strategies can be adopted for each risk when developing a suitable response plan:

- **Accept or tolerate** consequences in the event that the risk occurs, where a) the cost of taking any action exceeds the potential benefit gained; or b) there are no alternative courses of action available
- **Treating the risk:** continuing with the activity that caused the risk by employing four different types of control – preventative, corrective, directive and detective controls
- **Transferring the risk:** risks transferred to a third party e.g. insurer or contractor
- **Terminating** the activity that gives rise to the risk

Following the implementation of these strategies, if a risk can be treated and its effects mitigated, the risks should be 're-scored', and this new score included in the risk register.

Management of Risks

Governing Principle

The governing principle, as described by HM Treasury, is that specific risks should be allocated to the party best able to manage it, subject to the risk premium.

This is intended to share risk between the promoter, stakeholders and potential service providers. As the development of the Packages of Interventions progresses and the commercial strategy to support their delivery is developed, the following principles should be taken into account:

- The public sector should consider transferring risk to the private sector when the service provider is better able to influence the outcome than the procuring authority.
- The degree to which risks may be transferred depends on the specific proposal under consideration.
- The private sector should be encouraged to take the risks it can manage more effectively than the public sector; particularly where it has clear ownership, responsibility and control.
- The successful negotiation of risk transfer requires a clear understanding by the procuring authority of the risks presented by a proposal; the broad impact that these risks may have on the service provider's incentives and financing costs (cost drivers); and the degree to which risk transfer offers Value for Money.

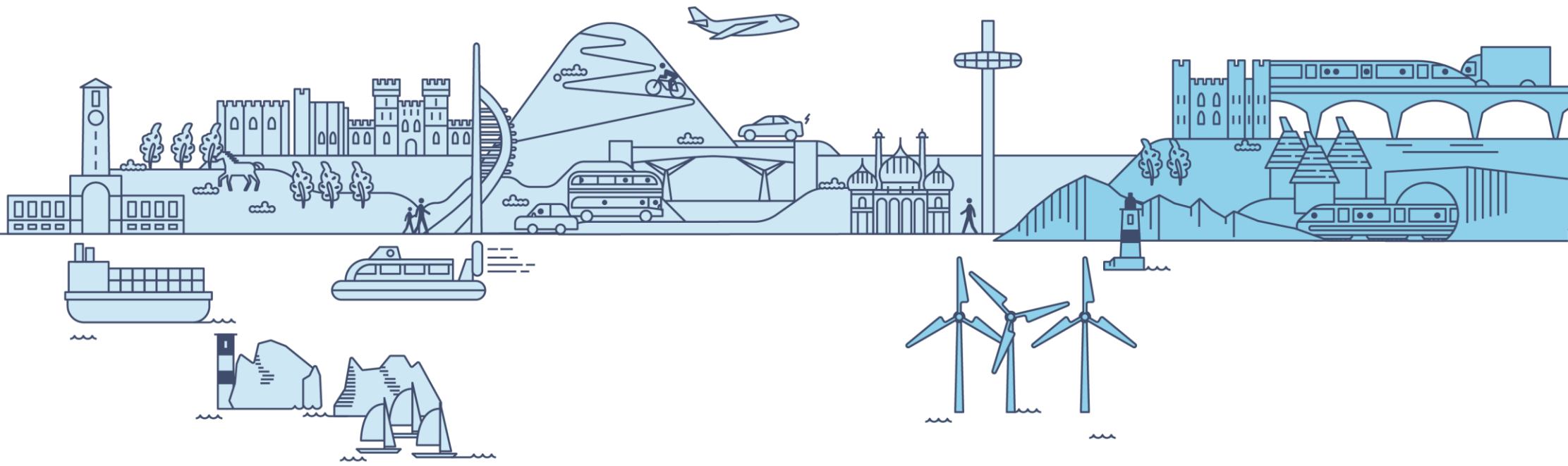
Consideration of Risks

TfSE should seek to apportion or share the different types of risks between parties, with risks allocated to the party best placed to manage them subject to achieving value for money.

The delivery of the Packages should be set in a way that:

- allocates risk appropriately across contracts;
- incentivises the intended outcomes in terms of performance, efficiency and innovation;
- facilitates the delivery of the project to time and budget; and
- secures the targeted economic, social and environmental benefits of the project as discussed with stakeholders and agreed with decision makers.

A Draft Risk Register for this SPOC is presented in the Management Case.



Part 5b

Procurement Options

Procurement Options

Sourcing Options

In place of the Official Journal of the European Union's Tenders Electronic Daily (OJEU/TED), the Find a Tender Service (FTS) is the new UK e-notification service where notices for new procurements are required to be published.

All public-sector tenders valued above £4,551,413 (for infrastructure projects) must be advertised. Furthermore, Public Contract Regulations PCR 2021 indicate that:

- Minimum thresholds for sub-central governments is £25,000
- Public supply and services contract and their design context threshold is £213,477

There are several procurement procedures available to schemes to which the FTS/OJEU values apply. These each have particular benefits and use cases, as follows.

Open Procedure

This procedure allows an unlimited number of interested parties to tender against defined parameters. There are no restrictions (e.g. pre-qualification) on the parties who are permitted to tender, meaning that some parties may not be suitable to carry out the work. This procedure is straightforward and transparent but can attract a large number of potential bidders (which will require a greater degree of assessment and resource requirements).

This route is not usually recommended for construction projects due to the high number of tenders that could be expected and the particular skills and experience that may be required of potential bidders.

Restricted Procedure

This is a two-stage procedure. The first stage allows the contracting authority to set the minimum criteria relating to technical, economic and financial capabilities that the potential bidders must satisfy. Following evaluation of the responses to the first stage a minimum of five bidders (unless fewer qualify) are invited to tender in the second stage. This process is typically used to appoint consultants or contractors on traditionally procured projects.

Accelerated Restricted Procedure

As for the Restricted Procedure, but used where, for reasons of urgency, the contracting authority must procure the contract in a reduced time frame. Any contracting authority wishing to use this procedure must be able to demonstrate the reasons of urgency.

Procurement Options

Competitive Dialogue Procedure

This procedure is appropriate for complex contracts where contracting authorities:

- Are not objectively able to define the technical means capable of satisfying their needs or objectives, and / or
- Are not objectively able to specify the legal and/or financial make-up of a project.

This is a multi-stage procedure. The first stage is a pre-qualification to select the potential bidders to participate in the dialogue. In the second stage, the contracting authority enters into a dialogue with the potential bidders to identify and define the means best suited to satisfying their needs. Any aspect of the contract may be discussed, including technical requirements for the works to be delivered and the commercial / contractual arrangements to be used. The dialogue may be conducted in successive phases with the remaining bidders being invited to tender.

By the end of the dialogue phase the contracting authority's requirements will have been determined such that the scheme can be tendered. In the final stage, the remaining bidders from the dialogue phase are invited to tender for the scheme.

Competitive Procedure with Negotiation

Within this procedure, bidders initially submit tenders based on the information issued by the contracting authority. The contracting authority is then able to review the tenders it has received and negotiate with the bidders, following which the tenders will be resubmitted. This procedure may therefore be useful where the requirements are well developed initially, and full tender documents can be produced but it is felt that there may be advantage in retaining the ability to hold negotiations if there are certain aspects which bidders raise.

Preferred Procurement Procedure

Considering the size, complexity and value of the Packages and Interventions within the SPOC, it is likely that a combination of the above procurement procedures will be used to procure the necessary services to support the delivery of TfSE's Transport Strategy.

As the SPOC interventions will be delivered using a programme approach, the opportunity to deliver individual interventions or packages of work within the programme will dictate the procurement and sourcing options for individual packages of work.

Procurement Options

Programme Prioritisation

The need to prioritise the Packages of Interventions could present itself. For this purpose a framework for programme prioritisation could be based on:

- objective fit / benefit impact / cost-benefit analysis;
- deliverability – ease of delivery based on sponsor funding and staffing resource availability;
- profitability – potential of revenue generation;
- by nature of intervention - geography, value, ongoing liability; and
- link to wider benefits; and
- Interdependencies with other Packages and Interventions.

Further consideration of the programming of the interventions will be addressed in the Strategic Investment Plan.

Challenges/Blockers

The risks identified during the viability review should be taken forward through procurement. Risk should be captured in contracts and passed on where possible. Additional risks related to the chosen procurement method should also be considered.

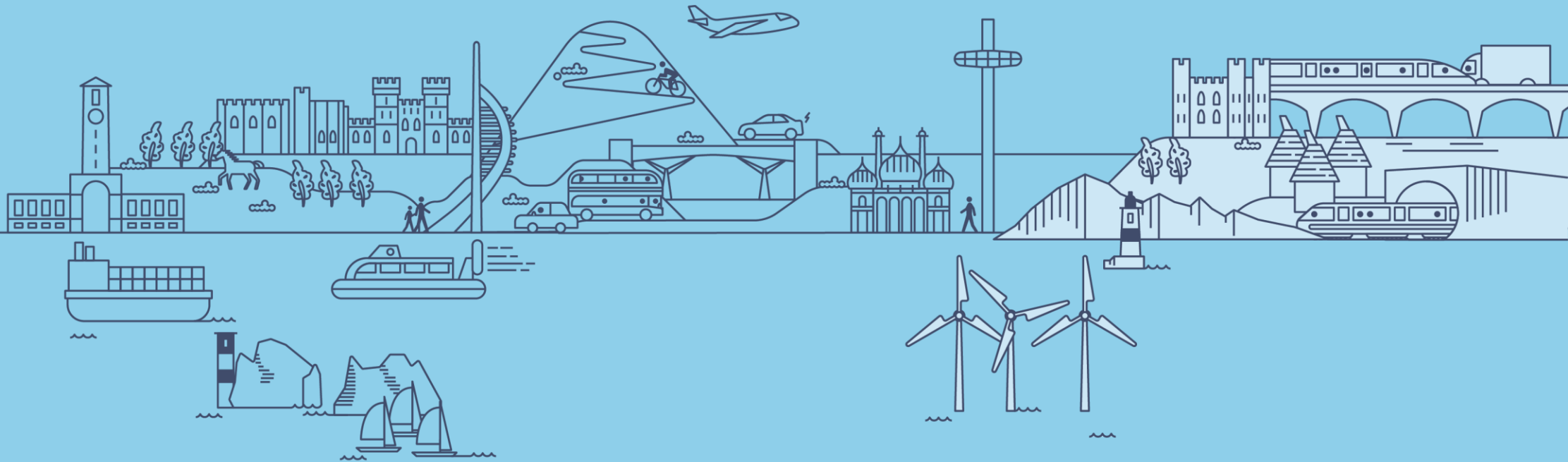
Additional Resourcing

TfSE will provide resource where appropriate. This could involve:

- business case and scheme development, including use of analytical framework;
- scheme prioritisation, (securing) funding, and advocacy;
- procurement and sourcing supply chains for development / planning and construction / operations; and
- staff resource and resource funding to support the above as well as build capacity and capability within scheme promoters' own organisations.

In addition, Transport for the South East has recently been awarded funding by the Department for Transport to support Local Transport Authorities in the delivery of their Local Transport Plans. The support will help LTAs to enhance their capability in key areas, such as the development of business cases, scenario planning and undertaking carbon impact assessments. The initial stage of the work will involve identifying the capability gaps, with the latter stages providing support to address these areas.

This work will form the initial stages of the development of our Centre of Excellence proposal and will help to determine how TfSE supports the proposals identified by local transport authorities over the rest of the financial year.



Part 6

Management Dimension

Management Case

Overview

The Management Dimension sets out the proposed approach for managing the delivery of the SPOC Packages.

The Management Dimension identifies the need for robust arrangements to be in place for:

- Delivery
- Monitoring and evaluation of the scheme (including feedback into the organisation's strategic planning cycle)

For each Package of Interventions, there will need to be a **Management Plan** to ensure that each intervention is being managed in accordance with best practice, government guidance, subjected to independent assurance and that the necessary arrangements are in place for:

- Change and contract management
- Risk management
- Benefits realisation
- Lessons management
- Data information security
- Project closure

Contents

Part 6a Governance Arrangements

This identifies the considerations for establishing:

- Programme management
- Governance structure
- Communications plan

Part 6b Delivery Plan

Outlines the areas to address to ensure the successful delivery of the SPOC Packages, including:

- Project plan
- Benefits realisation plan

Part 6c Delivery Risks

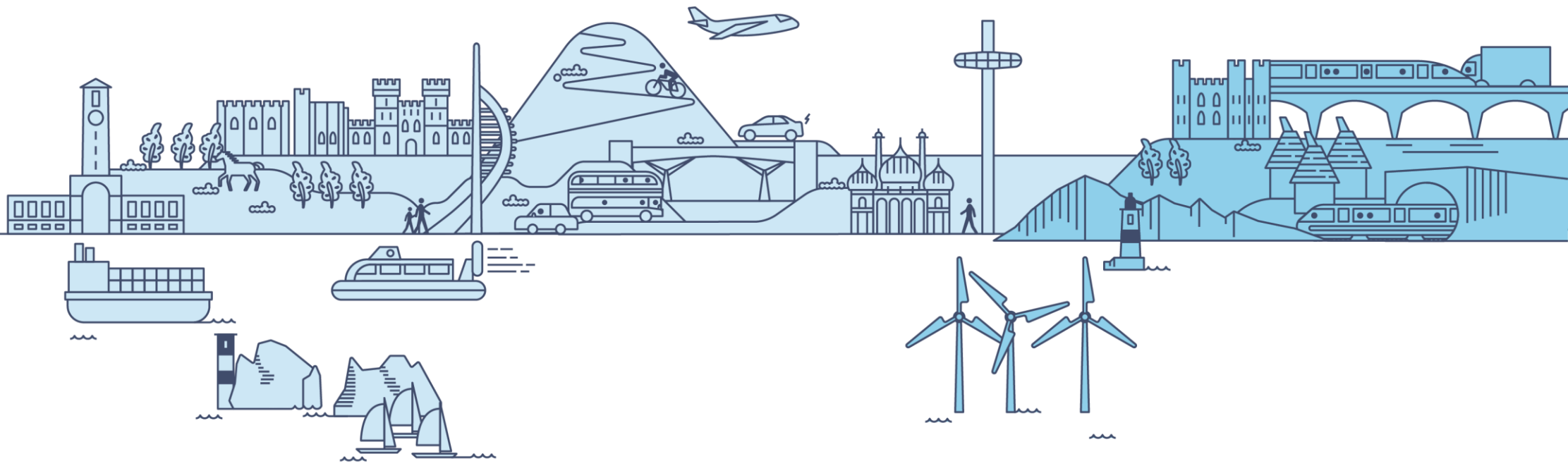
Addressing management of delivery risks in terms of planning, strategies and mitigation.

Alignment with Department for Transport Business Case Guidance

The table below sets out the DfT's requirements for the Management Dimension and the level of detail expected at Strategic Outline Case stage. The final column shows where the Management Dimension addresses each requirement.

TAG Issue	TAG Requirement	Progress at SOC*	Reference
Introduction and objectives	Outline the approach taken to assess if the investment is deliverable	Complete	Part 6a
Evidence of similar projects	Provide evidence of similar projects that have been successful to support the recommended project approach.	Complete	To be included at further business case stages
Governance, organisational structure and roles	Describe key roles, accountability's, roles and responsibilities and how they are resourced	Complete	Part 6a
Assurance	Assurance strategy and plan with key assurance and approval milestones	Complete	To be included at further business case stages
Programme or project reporting	Describe the reporting arrangements including delegated authorities, exception reporting, tolerances and change control	Outline	Part 6b
Programme or project scope, dependencies and constraints	Set out deliverables and decisions that are provided/ received from other projects and any constraints	Outline	To be included at further business case stages
Project implementation	Summarise the key-work packages, product and work break down structures for executing work	Outline	Part 6b
Programme or project plan	Outline a plan with key milestones, progress and include a critical path	Outline	Part 6b
Stakeholder engagement and communications	Set out the communications strategy and plans that accounts for all stakeholders, aligning with those outlines in the strategic dimension	Outline	Part 6a
Risk and issues management	Provide arrangements for risk management and issues that are likely to affect delivery and implementation	Outline	Part 6c
Lessons management	Produce a strategy and plan for learning from other proposals, learning throughout the proposal and sharing lessons with other teams.	Outline	To be included at further business case stages
Benefits management	Produce a longlist of prioritised benefits and a Benefits Logic Map to show how benefits contribute to strategic objectives.	Outline	Part 3e
Data Information Security	Explicitly address the protection of critical systems, digital assets and commercially sensitive data	Outline	To be included at further business case stages
Benefits management and evaluation	Set out the approach to managing the realisation and a credible plan for the evaluation of benefits including a set of Benefit Profiles	Outline	Part 6b
Project Closure	Summarise arrangements for project closure and how data will be captured for future benchmarking	Outline	To be included at further business case stages

***Note:** Given the early stage of the work not all requirements have been completed at this stage.



Part 6a

Governance Arrangements

Programme Management and Governance

Managing, Successful Programmes

The Cabinet Office’s recommended methodology for the delivery of programmes is **Managing Successful Programmes (MSP)**.

MSP represents proven good practice for successfully delivering transformational change and is drawn from the experiences of both public and private sectors.

TfSE’s approach will align with it.

TfSE Future Capability Requirements

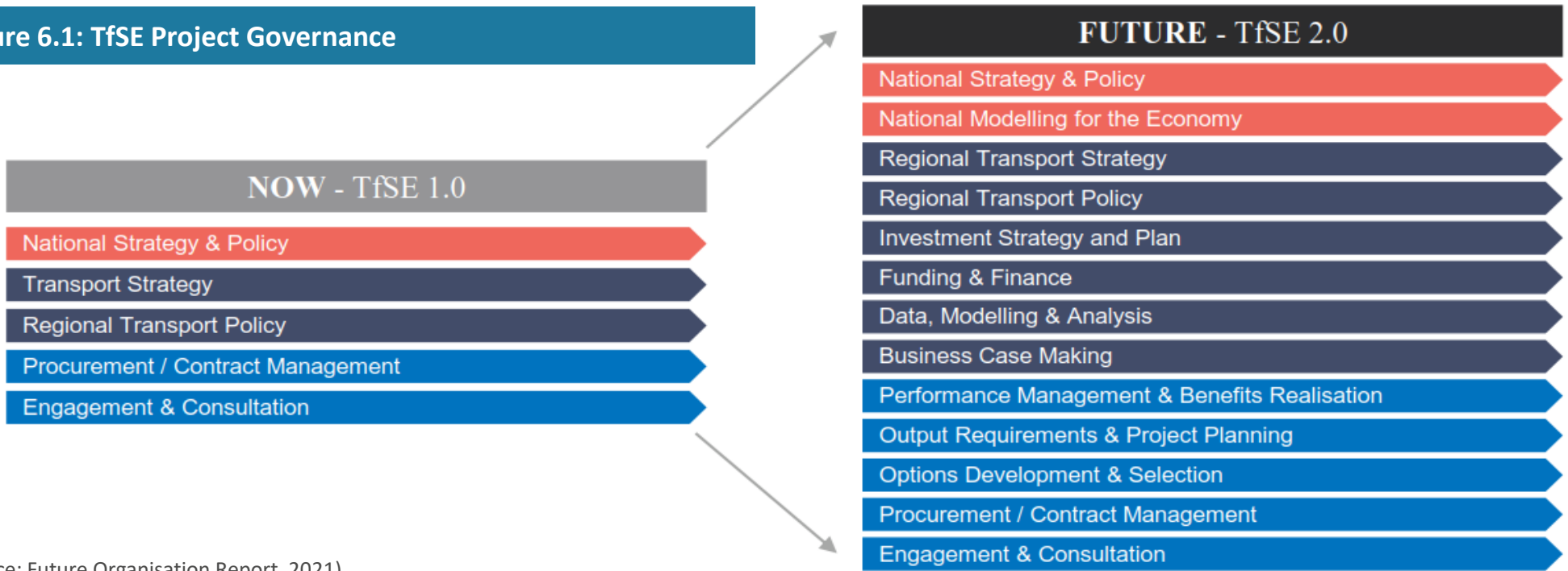
To deliver the Transport Strategy and successfully manage the SPOC Programme it is recognised that TfSE will need to grow and develop new capabilities to undertake a greater range of activities, including the governance of major programmes.

This is captured in the Future Organisation Report and an example structure for TfSE is shown in **Figure 6.1**.

An organisational set up such as TfSE 2.0 would enable TfSE to lead and work more directly on the Package of Interventions Delivery Plans, monitor benefit realisation plans and take Senior Responsible Officer roles where suitable.

The successful delivery of the programmes and projects will build upon the experience of the delivery partners.

Figure 6.1: TfSE Project Governance



(Source: Future Organisation Report, 2021)

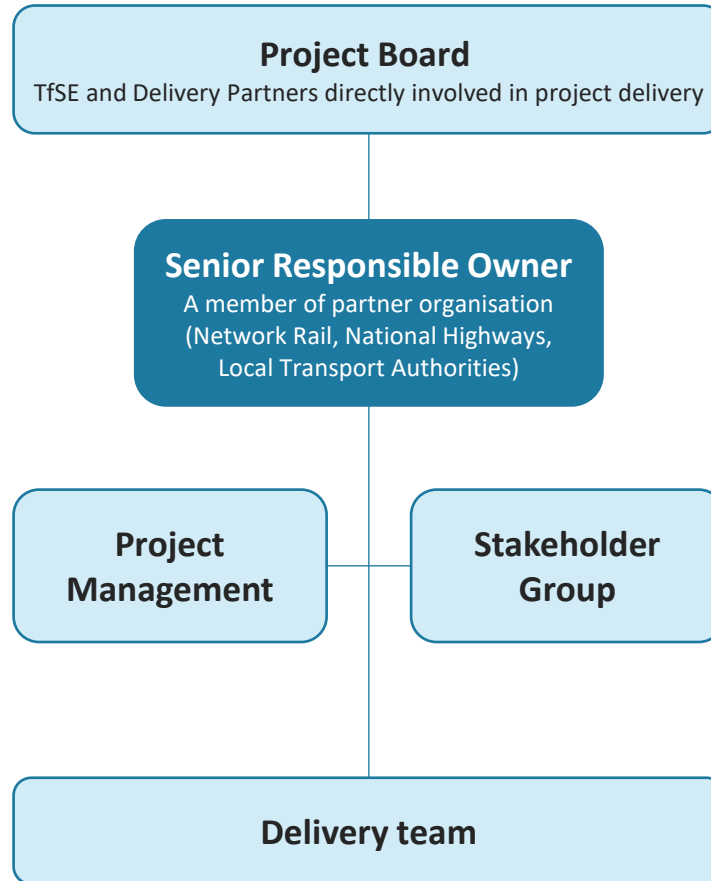
Programme Management and Governance

Governance Structure

Project specific governance will need to be defined for each project. The overall structure should include a Senior Responsible Owner (SRO), a Project Board, and key stakeholder group. An example structure is shown in Figure 6.2.

- The SRO will be the Sponsor of the Project and, as such, will be responsible for the project outcomes and delivery.
- The SRO can be a member of the project delivery partner organisation (e.g., Network Rail, National Highways, Local Transport Authorities).
- The board should include members of TfSE and key delivery partners directly involved in the project delivery.
- The project board should meet regularly to review project progress and make decisions. The board will review the business case at appropriate project plan milestones.
- The stakeholder group will include organisations indirectly linked to the delivery of the project but interested in the project outcomes.

Figure 6.2: Project Governance Template



Strategy, Framework and Plans

For each Package of Interventions the Management Plan will include:

- estimated timing of the delivery of each intervention in the Package;
- identified 'owners' and/or 'sponsors' for each intervention;
- estimated costs for each intervention;
- governance frameworks (or options thereof) to support the delivery of the Packages; and
- key delivery risks.

Stakeholder Engagement

Stakeholders

The Area Study Programme has been supported by extensive stakeholder engagement activity.

As set out in the Introduction to this SPOC, at the outset of this study, TfSE and the Technical Advisor team undertook a stakeholder mapping exercise for the Kent, Medway and East Sussex Area to categorise key organisations and individuals according to their interest and influence.

This exercise enabled TfSE to define four distinct tiers of stakeholder. For each of these tiers, a tailored engagement approach has been followed.

Stakeholder and Communication Plan

Building on the stakeholder engagement to date, it is proposed that a Stakeholder and Communications Plan be developed to support the delivery of the Strategic Investment Plan.

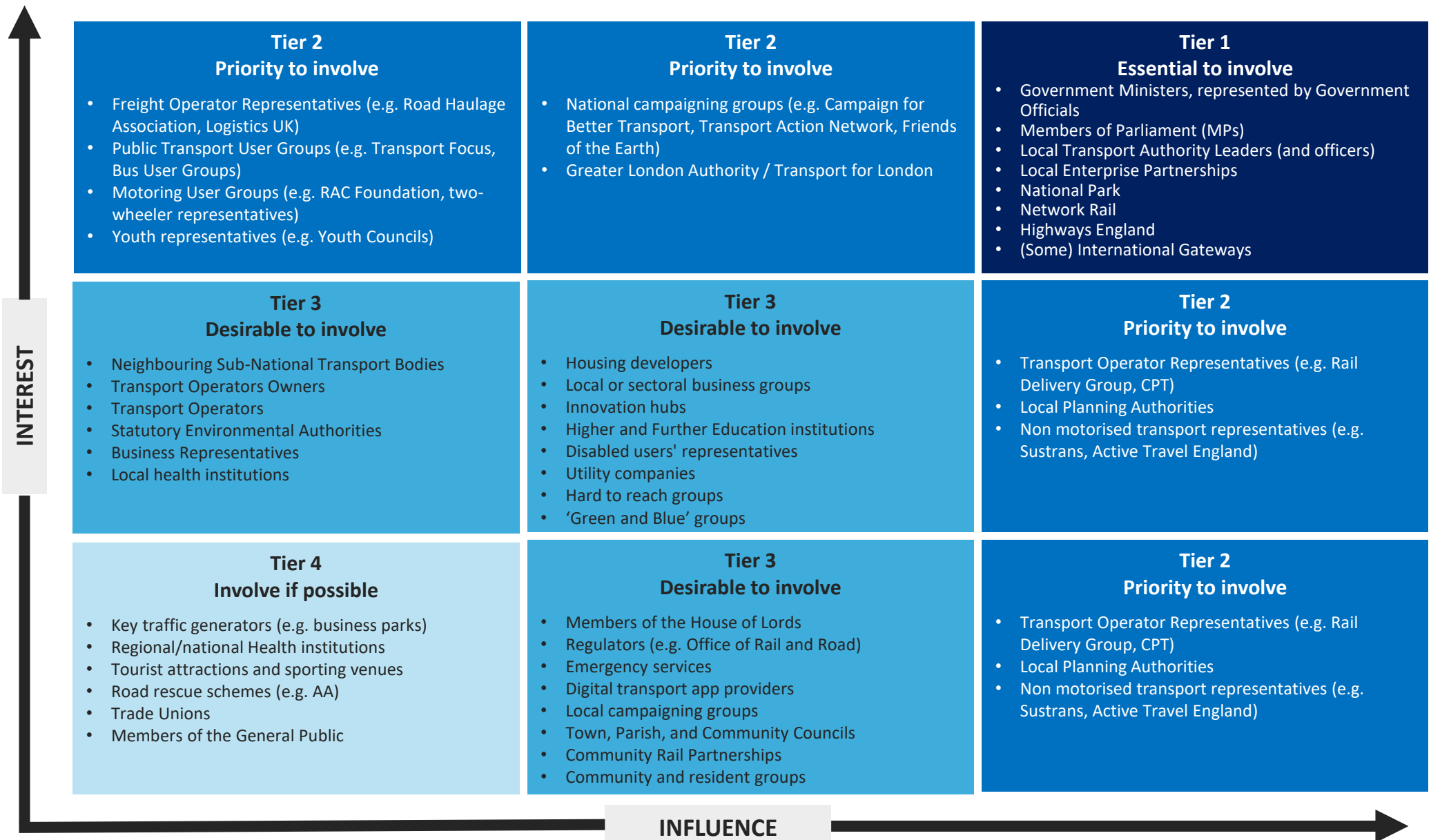
Given the wide range of stakeholders across the region, their differing views and specific local contexts, this Stakeholder and Communications Plan will reconfirm the stakeholders and their tiers, set out how and when and by whom they will be engaged, and the input sought from them and its purpose in the overall project programme.

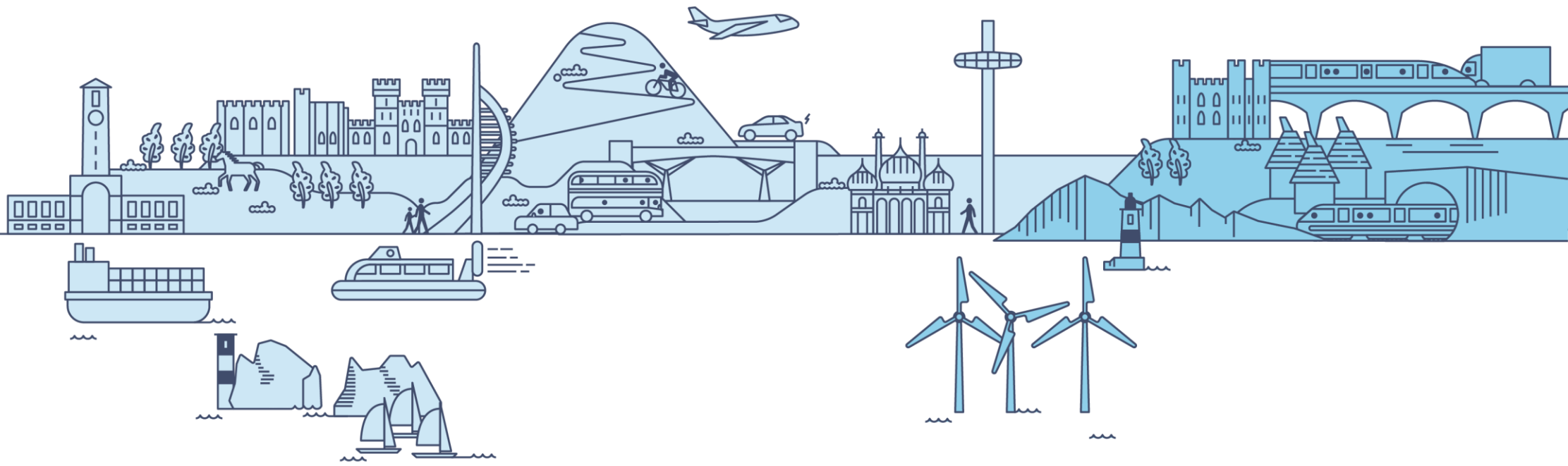
This is summarised in **Figure 6.3** overleaf.

The profile of stakeholders who will need to be engaged in future stages may be different to those involved at earlier stages. For example, there will likely need to be more engagement with potential funders and delivery partners (developers, constructors, operators, etc) to ensure the development of the Packages of Interventions are informed by the best available advice.

Stakeholder Mapping

Figure 6.3: Stakeholder Tiers





Part 6b

Delivery Plan

Delivery Plan

Project Management

PRINCE – PRojects IN Controlled Environment (PRINCE2) represents proven good practice in project management and is drawn from the experiences of both public and private sectors over many years.

PRINCE2 is the Cabinet Office’s recommended methodology for the delivery of projects and will be appropriate for the programme and project framework for the further development of the SPOC Packages and their successful delivery and realisation of forecast benefits.

In developing the Package Delivery Plans, consideration will be given to:

- project structure
- reporting arrangements
- governance arrangements
- key roles and responsibilities
- appointed personnel and any vacancies

A Senior Responsible Owner will be identified in the Delivery Plan.

Senior Responsible Owner

The SRO is accountable for the programme (at the SPOC level and Package level as appropriate), and for ensuring that it meets its objectives and delivers the expected benefits.

The individual who fulfils this role should be able to lead and champion the programme and must be empowered to direct the programme and take decisions; for example, whether to delay or stop any part of the programme. The SRO must have sufficient seniority and authority to provide leadership to the programme and take on accountability for delivery.

The day-to-day leadership may be undertaken by a Programme Director, but this is not an alternative to the SRO role.

The Package programme business case will identify an SRO as suitable based on the project type and availability. It is anticipated that SRO could be sourced from:

- Network Rail for rail related projects and possibly DfT and TfSE;
- National Highways and possibly DfT for Strategic Road Network related projects; and
- Local Authorities or TfSE for local highway, placemaking or policy related projects.

Programme Plan

The Programme Plan is used to control and track the progress and delivery of the programme and resulting outcomes.

It supports the Delivery Plan and describes how, when and by whom a specific project, milestone or set of targets will be achieved. It is the detailed analysis of how identified programme targets, milestones, deliverables and products will be delivered to timescales, costs and quality.

The current assumptions for the indicative durations for the different types of interventions comprising the different Packages are presented overleaf in the tables over. Planning timescales needs to reflect the scale and complexity of the scheme and its current stage (e.g. pre-SOBC, SOBC, OBC etc) and what powers and consents are required along with major considerations such as securing funding and land assemblage.

For each Package a Programme/Project Plan will be developed indicating milestones and critical paths.

Delivery Plan – Assumption Summary (Rail and Mass Rapid Transit)

Category	Sub-Category	Timeframe	Implementation
Rail	New Offline Rail Infrastructure	15-20 years	5 years
Rail	New Online Rail Infrastructure	5-10 years	2 years
Rail	Service Improvement	2-7 years	1 years
Rail	Reinstating Line	10-15 years	4 years
Rail	Level Crossing Removal	5-7 years	1 years

Category	Sub-Category	Timeframe	Implementation
MRT	New BRT/MRT	5-10 years	3 years
MRT	New Ferry/Waterway	5-8 years	2 years
MRT	Service Improvement	2-5 years	1 year
MRT	New Strategic Mobility Hub	3-5 years	2 years
MRT	Infrastructure Improvement	3-5 years	1 year

Delivery Plan – Assumption Summary (Active Travel and Highways)

Category	Sub-Category	Timeframe	Implementation
Active Travel	New Cycleway/Footways	2-5 years	1 year
Active Travel	Improved Cycleways/Footways	1-3 years	1 year
Active Travel	Service Improvement	0-2 years	1 year
Active Travel	Mobility Hubs	2-3 years	1 year
Active Travel	Online Road Improvements	2-3 years	1 year
Active Travel	Offline Road improvements	3-5 years	1 year
Active Travel	New Cycleway/Footways	3-5 years	1 year

Category	Sub-Category	Timeframe	Implementation
Highways	Junction Improvement	3-5 years	1 year
Highways	Widening	3-5 years	1 year
Highways	New Online Infrastructure Improvement	3-5 years	1 year
Highways	Bridge/Tunnel	15-20 years	5 years
Highways	Bypass/Relief Road	10-15 years	4 years
Highways	Lorry Park	5-7 years	2 years
Highways	Service Improvement (e.g. CAZ)	3-5 years	1 year

Benefits Realisation Plan

Benefits Management

A benefit is defined as *“the measurable improvement resulting from an outcome perceived as an advantage by one or more stakeholders, which contributes towards one or more organisational objectives”*.

In the TfSE Transport Strategy, goals, priorities and principles are outlined to achieve a sustainable transport strategy which has the potential to deliver £450 billion GVA backing high growth sectors and create 475,000 jobs.

To support the realisation of this benefits management should be undertaken throughout the project lifecycle and into operations/business-as-usual, not just during investment decision-making. The identification of benefits should happen before a project is even initiated, informed by a defined problem, strategy or policy.

At a strategic level TfSE has undertaken this benefit identification within the Transport Strategy. These benefits are then developed throughout the project lifecycle, and then typically measured during project delivery and after the project has closed.

Best Practice

For benefits management to be successful the SROs should consider applying the following principles throughout the lifecycle:

- Benefits management should be integrated into other project management activities and should be a regular, continuous activity.
- Project benefits should be identified, quantified and managed in line with the programme to ensure consistency between projects.
- Benefits management should be evidence-based and driven by data.
- As far as practicable, benefits should be specific enough and isolated enough so that their realisation can be directly attributed to the project/programme.

Outputs, Outcomes, and Impacts



The TfSE Transport Strategy KPIs should form the basis from which the Package business case should develop the initial desired outputs, outcomes and impacts for the Packages of Interventions programme.

These desired outputs, outcomes and impacts are the actual benefits that are expected to be derived from the programme:


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

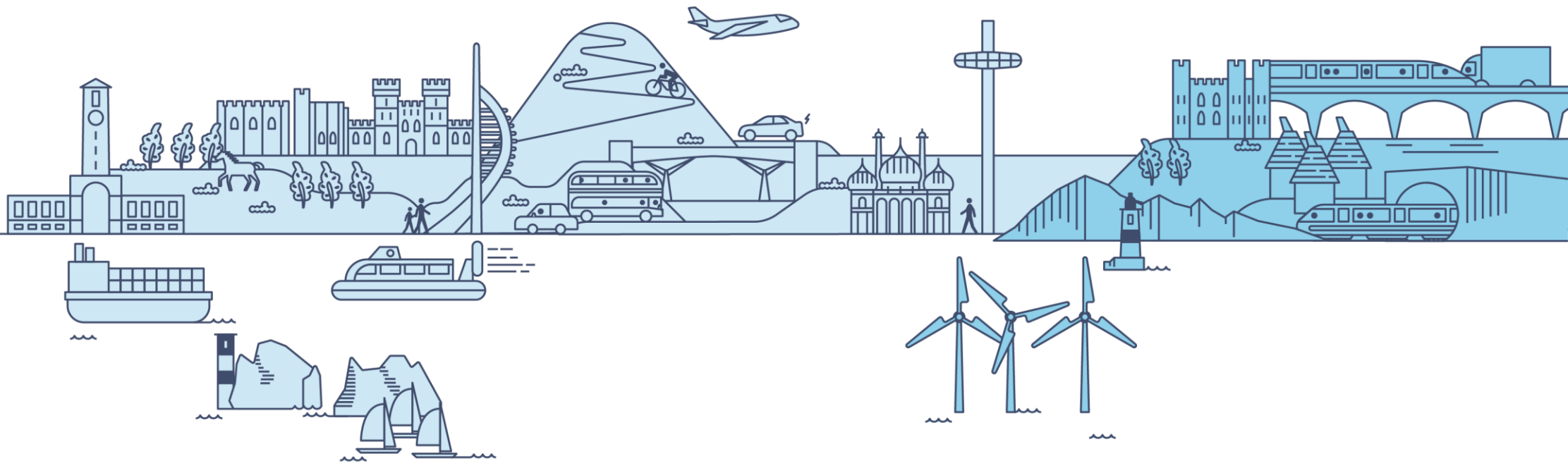
The TfSE Transport Strategy KPIs, as set in ‘A bold vision for a brighter future’ monitoring section are set out below. These describe the desired outputs, outcomes and impacts in the Economic, Social and Environmental dimensions.

Benefits Realisation Plan - – Priorities and Indicators

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

Benefits Realisation Plan – Priorities and Indicators

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



Part 6c

Delivery Risks

Delivery Risks

Planning Risk Management

Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the policy, programme or project lifecycle.

Its purpose is to support better decision making through understanding the risks inherent in a proposal and their likely impact.

Effective risk management supports the achievement of wider aims, such as:

- effective change management;
- the efficient use of resources;
- better programme and project management;
- minimising waste and fraud; and
- innovation.

Risk Management Strategy

Strategies for the proactive and effective management of risk involve:

- identifying possible risk in advance and putting mechanisms in place to minimise the likelihood of them materialising with adverse effects;
- having processes in place to monitor risks, and access to reliable, up-to-date information about risks;
- the right balance of control to mitigate against the adverse consequences of the risks if they should materialise; and
- decision making processes supported by a framework for risk analysis and evaluation.

Risk management strategies for individual policies, programmes and projects should be adopted in a way that is appropriate to their scale.

Risk Mitigation and Management

Recognised methods for the mitigation of risk throughout the lifespan of the policy, programme or project include:

- early consultation;
- avoidance of irreversible decisions;
- pilot studies;
- flexible design;
- precautionary action;
- procurement and contractual mitigation;
- manage reliance on technology; and
- alternative options.

Programme risk registers should be developed for each Package of Interventions to include the risks to the project delivery and consideration of the above-mentioned mitigation methods.

A draft programme risk register has been developed and is presented below.

Draft Risk Register (1 of 3)

Risk	Impact	Likelihood	Mitigation	Owner	P	I	Risk
Project Programme Inter - Dependencies	Benefit realisation and programme delays due to dependencies between Packages of Interventions	Likely	Identify dependencies between packages either due to practical programme rationale (e.g. deliver station and cycle interchange prior to opening MRT) or benefit realisation (e.g. passengers unable to reach MRT station due to missing first/last mile links)	TfSE	3	5	15
Political Risk	Policy is driven by political agenda and changes in political leadership might impact the realisation of project and benefits	Likely	Keep all political stakeholders apprised of programme benefits and progress	TfSE	5	3	15
Design, Information & Engagement	High level nature of specification of package interventions inherently carries risks associated with implications of ultimate design, which will be confirmed at a later stage and stakeholder opposition	Very Likely	Set up and keep updated a package specific risk register as soon as practical and communicate benefits clearly	TfSE	3	5	15

Draft Risk Register (2 of 3)

Risk	Impact	Likelihood	Mitigation	Owner	P	I	Risk
Project Programme Inter - Dependencies	Benefit realisation and programme delays due to dependencies between Packages of Interventions	Likely	Identify dependencies between Packages either due to practical programme rationale (e.g. deliver station and cycle interchange prior to opening MRT) or benefit realisation (e.g. passengers unable to reach MRT station due to missing first/last mile links)	TfSE	3	4	12
Political Risk	Policy is driven by political agenda and changes in political leadership might impact the realisation of project and benefits	Likely	Keep all political stakeholders appraised of programme benefits and progress	TfSE	4	3	12
Design and information	High level nature of specification of Package interventions inherently carries risks associated with implications of ultimate design, which will be confirmed at a later stage	Very Likely	Set up and keep updated a Package specific risk register as soon as practical	TfSE	4	3	12

Draft Risk Register (3 of 3)

Risk	Impact	Likelihood	Mitigation	Owner	P	I	Risk
Operational	Package of Interventions need to be defined in more detail to confirm operating company's interest in participating in their delivery	Likely	Define the scope of the intervention in further detail and consult operating companies on viability and interest	TfSE	3	3	9
Reputational Risk	Risk related to misperceptions over timescales, nature of interventions and their impacts	Likely	An information management plan should be drafted including the level of information access and protection of sensitive information, with clear definition of roles and responsibilities for disseminating information	TfSE	3	3	9
Health and Safety	Risk of project delays and costs resulting from exposure to future waves of COVID-19 and health and safety of staff working on Package development	Likely	Each organisation involved should keep a risk register and sign up to TfSE risk management processes. Each organisation should follow UK government advice on COVID-19 related practices in relation to the work environment	TfSE and other parties involved	3	2	6

**For further information
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