

South Central Radial Area Study Evidence Base Report

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Introduction

Background

The South Central Radial Area is one of the most prosperous and dynamic areas of the South East. Its transport networks perform a key link between the Sussex Coast, the Gatwick Diamond, and London. It is home to some of the fastest growing communities in the UK. However, some communities and sections of society risk being left behind by the area's prosperity.

Introduction

At first glance, the South Central Radial Area is an objectively prosperous area served by high quality transport networks. Indeed, the Brighton Main Line and M23/A23 corridors are among the best performing transport corridors in the South East. However, as this report will show, underneath these headlines are significant **issues** that this Area Study will need to consider. These include:

- **Low levels of economic and transport resilience** – the area is highly dependent on a relatively small number of industries, and one that is highly dependent on a single transport corridor;
- **Pressure points** – the housing market is unaffordable to many and risks undermining the area's economic potential, while there are also pressure points at key bottlenecks on the transport system; and
- **Spreading prosperity and connectivity** – communities that are “off the beaten track”, particularly on the coast, risk being left behind by the area's success.

A route to post COVID-19 recovery

At the time of writing, the South Central Radial Area, along with the rest of England, was in a “lockdown” in response to the COVID-19 pandemic. This has had a dramatic impact on the region's development and will continue to have a marked impact upon the region over the coming years. The economic consequences will leave a significant legacy on the area.

Some already underlying trends (such as a shift to home working) appear to have accelerated markedly, while others (such as an increased use of cars against a backdrop of levelling out car use in recent years) have seen notable reversals.

Whether these trends continue in the anticipated direction or revert back to pre-pandemic norms as the impact of COVID-19 subsides, is challenging to predict.

There have been some “upsides” from the experience of 2020. For example, the region has attracted people to visit and take “staycations”. The COVID-19 pandemic has therefore underlined the importance of the natural landscape and re-emphasises the importance of protecting and enhancing the natural and historic environment.

Looking ahead into 2021 – it is clear that the economic impacts of the pandemic will be significant, and dramatic. They may force policy makers to look again at commitments made prior to 2020 and reflect whether these are appropriate for a post COVID-19 economy.

However, major historical events such as the COVID-19 pandemic are, thankfully, rare, and when they occur, they can offer unprecedented **opportunities** for social transformation and progression. There is an opportunity to capitalize on these structural changes and guide the area to reach their decarbonisation and wider sustainability goals.

Structure of this Report

This report provides a common understanding of the current and future context for Transport for the South East's (TfSE) South Central Radial Area Study. As well as presenting the evidence base, this report summarises the key issues and opportunities in this area, describes a vision for the area, and sets objectives for the study. This study has four parts:

Part 1 summarises the current evidence base underpinning this area study.

It presents research and analysis sourced from policy documents, publicly available data and maps, scheme promoters, and insights from stakeholders. It is presented in six parts:

- **Part 1a** summarises the national, regional, and local policies relevant to this study (more detail is provided in the Appendix).
- **Part 1b** describes demographic and economic trends.
- **Part 1c** describes social trends, including deprivation, accidents, and air quality.
- **Part 1d** describes environmental characteristics, including protected areas, heritage, flood risk, and landscape.
- **Part 1e** describes the area's road, railway, and international gateway networks.
- **Part 1f** presents analysis of the accessibility and connectivity of the public transport networks serving the area.
- **Part 1g** summarises our analysis of Travel To Work patterns in the area.

Part 2 summarises evidence that shows how the future of the area may evolve.

It is presented in four parts:

- **Part 2a** summarises the demographic projections based on Local Plan development data provided by Local Planning Authorities.
- **Part 2b** describes the results of the South East Economic and Land Use Model (SEELUM) which estimates the impact of a "Preferred Scenario" of the future (developed by TfSE and its stakeholders in 2018/19) on socioeconomic and transport outcomes in the South Central Radial area.
- **Part 2c** lists the key highways, railways, international gateway, and local transport schemes under development in the area. It does not comment on whether the balance of schemes by modes and geography is right – this will be considered later in the options phase of this project.
- **Part 2d** explores the impact of the COVID-19 pandemic on the South East's economy and transport demand.

Part 3 presents our analysis of the key issues affecting the South Central Radial Area.

It is presented in two parts:

- **Part 3a** summarises some of the issues and opportunities we have identified that are relevant to the South Central Radial Area.
- **Part 3b** presents the results of our SWOC (Strengths, Weaknesses, Opportunities and Challenges).

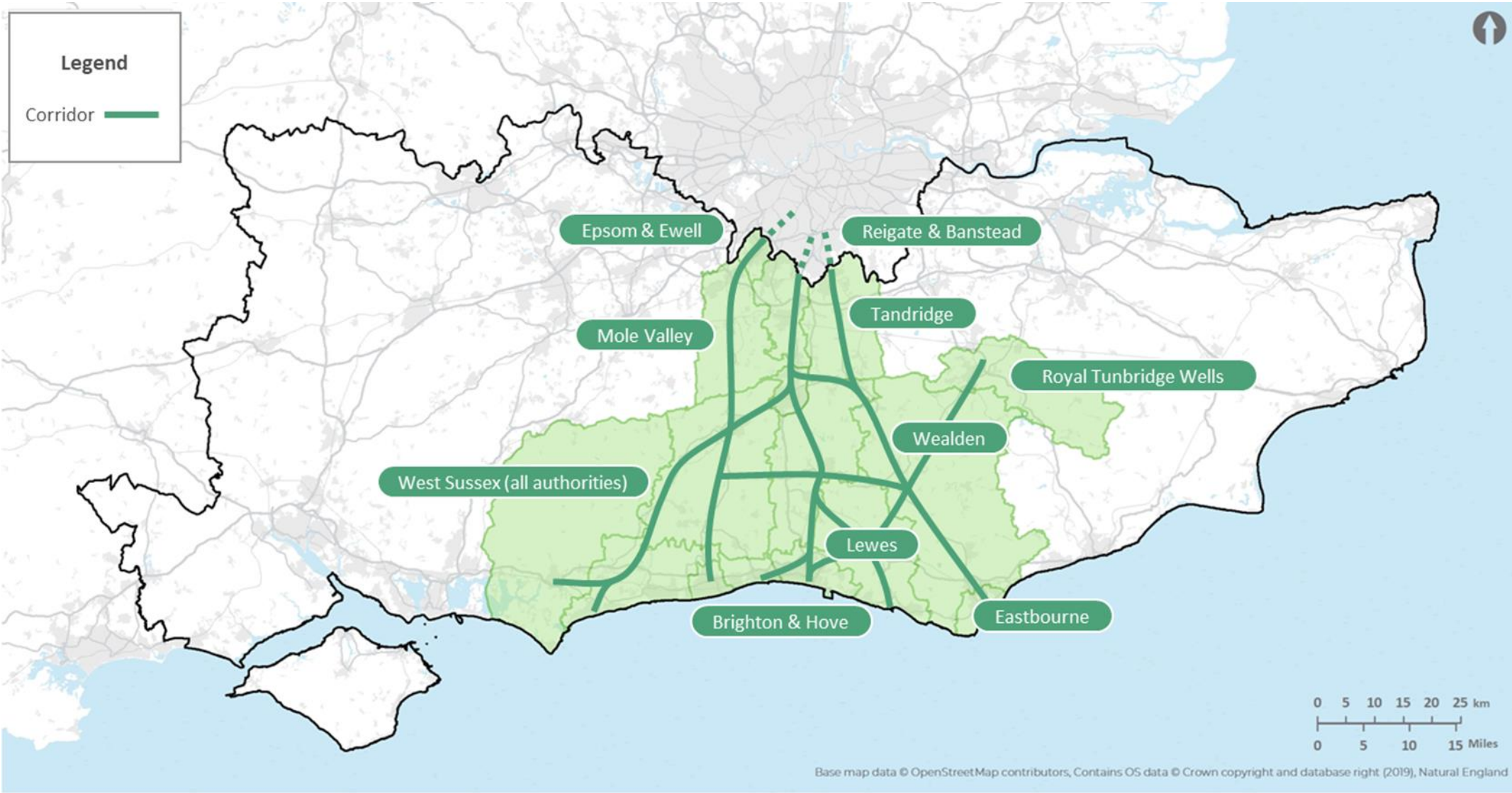
Part 4 sets a vision and objectives for the South Central Radial Area Study.

It is presented in three (short) parts:

- **Part 4a** describes the Vision Statement for the South Central Radial Area study.
- **Part 4b** lists the objectives of the South Central Radial Area study.
- **Part 4c** summarises the next steps of the South Central Radial Area study.

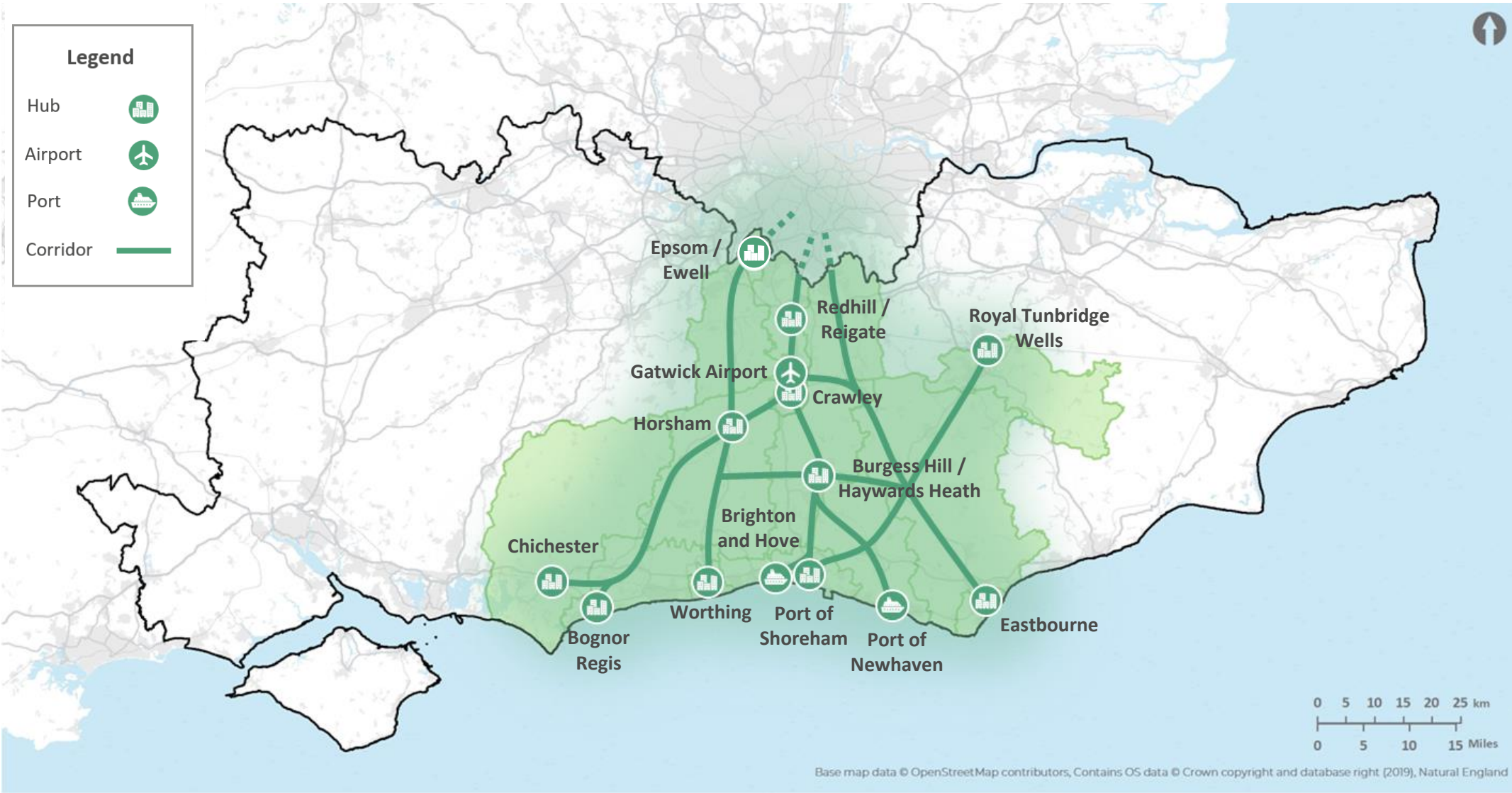
Definition of the South Central Radial Area

The South Central Radial Area Study encompasses the strategic radial corridors between South London and the Sussex coast. The Local Transport Authorities in this area include Brighton and Hove City Council, East Sussex County Council, Kent County Council, Surrey County Council, and West Sussex County Council. The Local Planning Authorities that are included in this area are labelled on the map below.



Major Economic Hubs and International Gateways

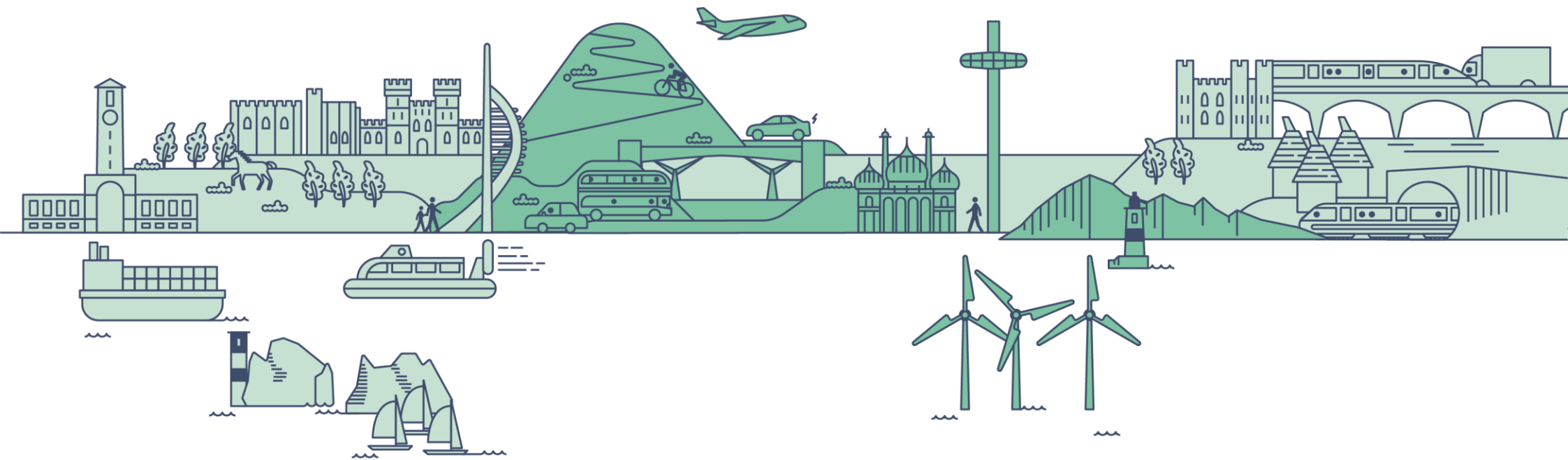
The South Central Radial Area encompasses a cluster of Major Economic Hubs on the Sussex Coast (Chichester, Bognor Regis, Worthing, Brighton and Hove, and Eastbourne), a cluster of Major Economic Hubs in the “Gatwick Diamond” area (Burgess Hill / Haywards Heath, Crawley / Gatwick, Horsham, and Redhill / Reigate), as well as Royal Tunbridge Wells in Kent and Epsom / Ewell in Surrey.





Part 1

Current Context



Part 1a

Policy Context

National and International Policy Context

National and international policies 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. A complete list of the policies reviewed for this South Central Radial Area study is provided in **Appendix A**. Key themes are discussed below:

Climate Change/Decarbonisation Policies

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

Decarbonising Transport, Setting the Challenge (2020), sets out the broad framework within which this context sits, and will provide the foundation for future DfT policies in this area. It comes in the wake of several other critical national (e.g. the **Clean Growth Strategy**) and international (e.g. the **Paris Accords**) documents which are helping to set the overall direction for decarbonisation.

Clearer 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.

Planning Reform

Planning in England is governed at a national level by a **National Planning Policy Framework**, which promotes the importance of sustainable development and has several clear environmental themes. This planning framework guides the 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 and has laid out its plans 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** and delivered (in part) by the **Housing Infrastructure Fund**.

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. The **Economic Connectivity Review**, undertaken by TfSE, 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, as identified by Network Rail in their published **London South East Market** study and the **West Sussex Connectivity Modular Strategic Study**.

Many stakeholders in the South East wish to see their own major economic hubs, which include some of the largest conurbations in England, establish themselves as self-contained, high-performing Major Economic Hubs that can thrive in their own right. 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 South Central Radial 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 highway schemes may be needed to support immediate housing needs and congestion hotspots in the South Central Radial Area.

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

Local Response to COVID-19

The COVID-19 pandemic has caused a significant rise in uncertainty around local planning. Local budgets are coming under increased pressure, and behavioral changes mean that traditional planning approaches are poorly suited to the current context.

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. The government has outlined its steps for recovery in the Our Plan to Rebuild document released in Spring 2021, and additional funds have been released through the Levelling Up Fund and the Towns Fund.

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 1b

Demographic and Economic Context

Population

The population of the South Central Radial Area was just over 2.0 million in 2019.

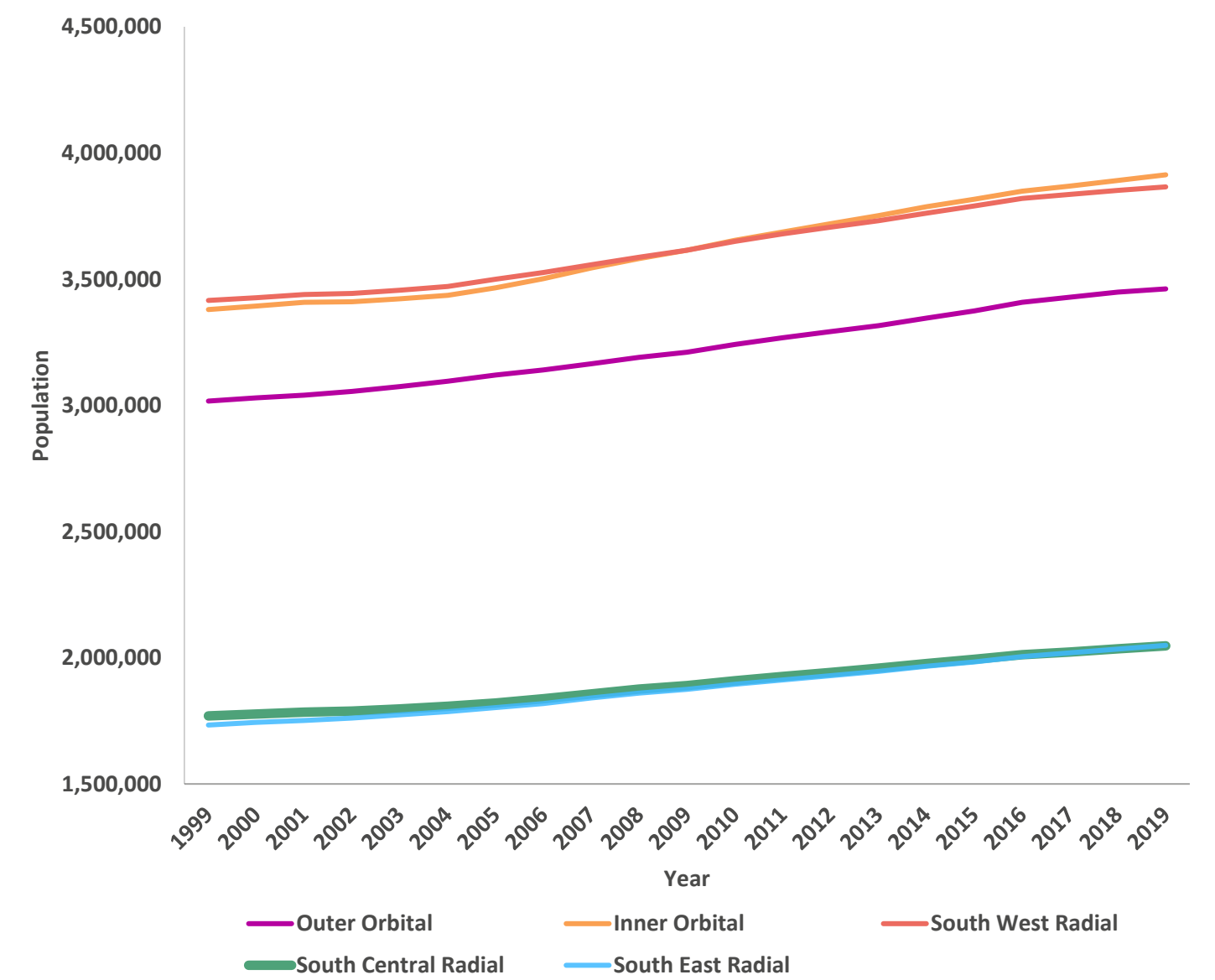
The South Central Radial Area has the smallest population of the five areas in the South East Region. **Figure 1.1** indicates that the area experienced a population growth in line with other regions in the South East, experiencing an 8.3% growth in the past decade, compared to the regional average of 8.0%.

Figure 1.2 shows the population density in the South Central Radial Areas. This shows that the two largest population centres are focussed on the Sussex Coast and the Gatwick Diamond.

The fastest growing areas along this corridor in the past decade include Horsham (10.8%), Epsom and Ewell (10.3%) and Reigate and Banstead (10.2%). In contrast, the slowest growing areas include Mole Valley (3.0%), Tunbridge Wells (5.3%), Adur (5.4%) and Eastbourne (5.6%).

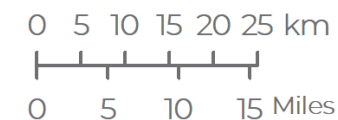
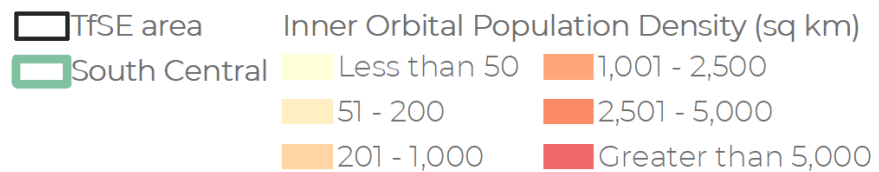
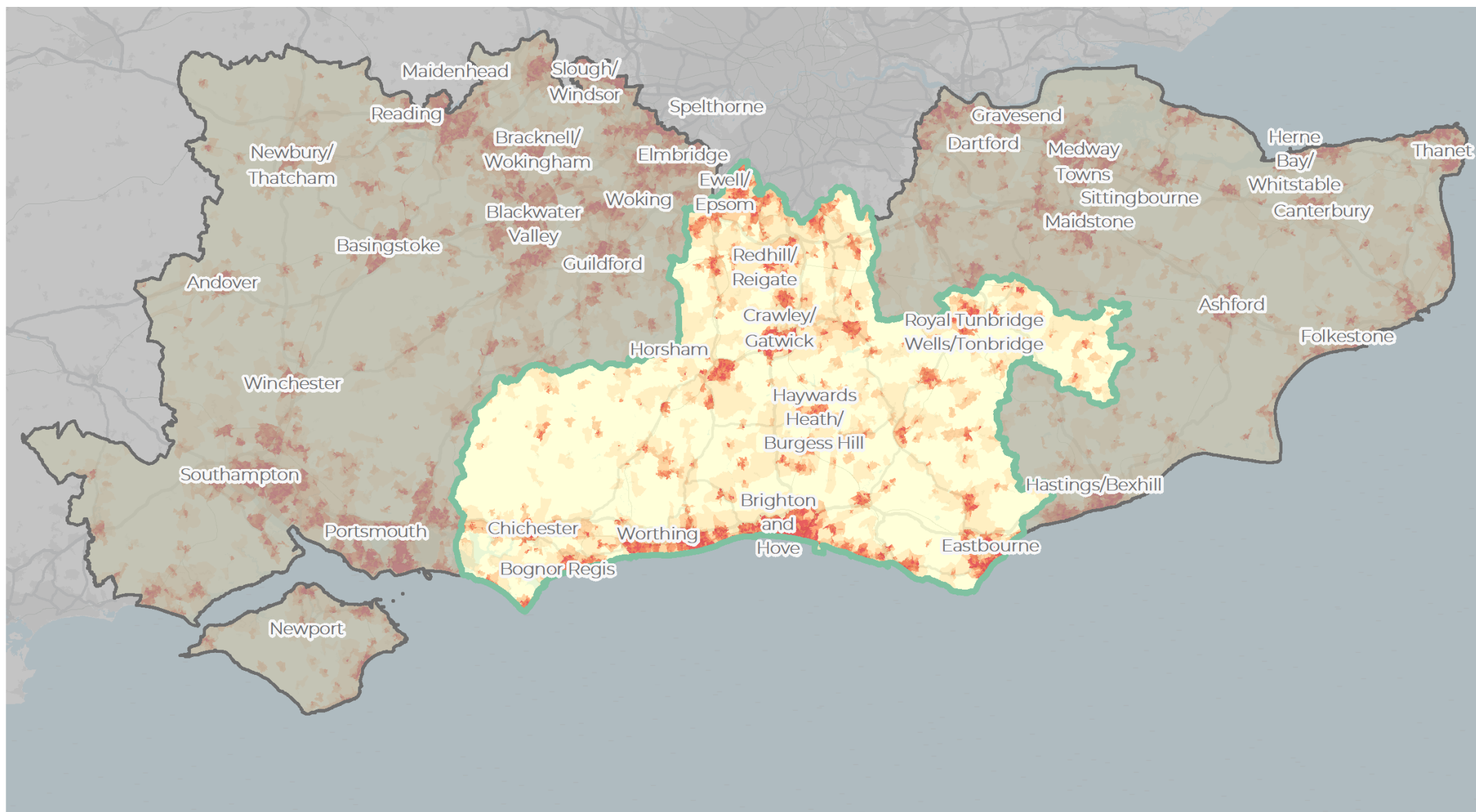
Modelling undertaken by Steer suggests the population in the South Central Radial Area will continue to increase to around 2.3 million residents by 2050 (see page 73). Planners will need to ensure appropriate housing and infrastructure is available to support growth, being mindful of potential changes in government forecasts.

Figure 1.1: Population growth over time in the South East



Source: NOMIS Official Labour Market Statistics, Population Estimates (2019)

Figure 1.2: Population Density



Sources: © OpenStreetMap contributors, Contains OS and ONS data © Crown copyright and database right (2021), Natural England

Employment

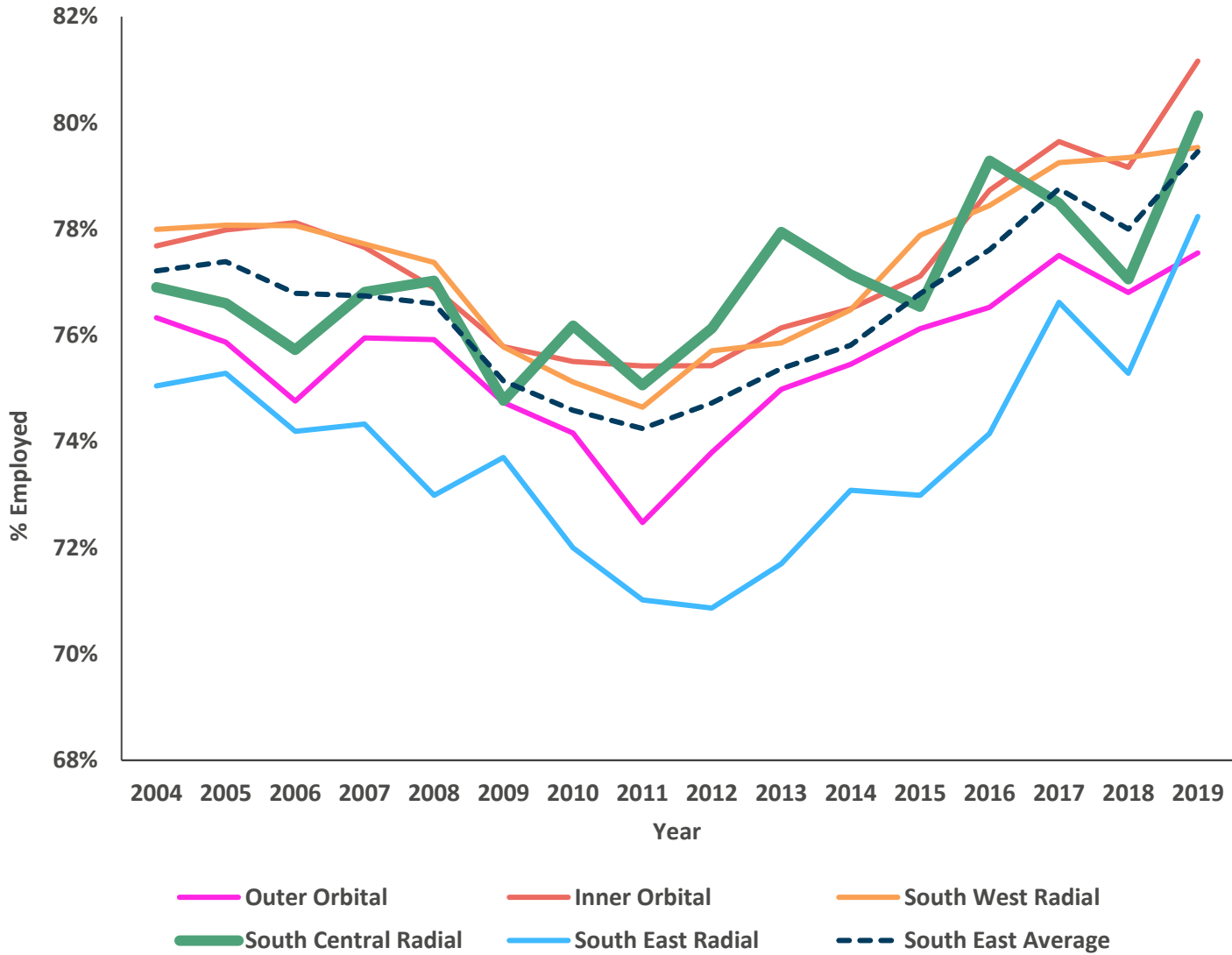
In 2019, 80% of the eligible workforce in the South Central Radial Area was in employment. This is higher than the South East (79%) and national (76%) average.

Figure 1.3 shows employment trends for each of the five areas. In 2017, 863,835 jobs were available in the South Central Radial Area, 26% of all jobs in the wider South East.

Historically, the employment rate in the South Central Radial Area has fluctuated in comparison to the rest of the South East. The area initially recovered faster than other areas following the 2008 financial crisis, but has since seen a noticeable fall in unemployment between 2014-15, and again in 2017-18. Sadly, it is expected that unemployment will rise sharply in 2020 and 2021 due to the economic fallout driven by the COVID-19 pandemic.

Within the South Central Radial Area, the Adur district has experienced the highest increase in employment in the past decade, with 91% of all eligible employed in 2019. Other areas with high employment include Mole Valley (87%) and Chichester (85%). All three of these areas have experienced a significant increase in the percentage employment in the past decade. In contrast, Lewes and Eastbourne have the lowest levels of employment, with only 73% of the eligible population being employed in 2019. Modelling undertaken by Steer suggests the number of jobs in the South Central Radial Area will grow to 1 million jobs by 2050 (see page 73).

Figure 1.3: Percentage of the eligible working population employed in the South East



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

Priority Industrial Sectors

In 2017, 11.5% of all jobs available in the South Central Radial Area were priority industrial sector jobs.

This is in line with the wider South East area. In 2018, TfSE identified industrial sectors that were deemed to be high value, high growth industries. Employment by each key sector in the South Central Radial Area is listed in **Table 1.1**.

The South Central Radial Area is particularly strong in the following priority industrial sectors:

- **Transportation**, this is mainly generated by the number of technical aviation roles required to operate Gatwick Airport, the second largest airport in the UK. The airport also indirectly generates roles in the travel and tourism sector.
- **IT services**, which includes a large proportion of technical computer programming roles which are in very high demand
- **Financial services**, particularly in larger settlements with good links to London, such as Brighton and Hove.
- **Manufacturing**, including computing and electrical products, food, vehicles and pharmaceuticals.

Brighton and Hove is a hub for start-ups – in 2015 this Major Economic Hub generated the 6th highest rate of business start-ups per 10,000 population (Source: Centre for Cities, 2015).

A large proportion of the 100,000 planned jobs in the area by 2050 will be in priority sectors.

Table 1.1: Priority sector jobs in the South Central Radial Area

Priority industrial sector	Number of jobs	% of South East*
Transportation	25,740	29%
IT Services	23,770	20%
Financial Services	17,775	90%
Manufacturing	16,150	32%
Travel and Tourism	5,050	44%
Media and Publishing	4,920	60%
Electricity and Gas	4,315	54%

* Number of jobs in the South Central Radial Area as a proportion of all jobs in the given priority industrial sector in the South East area. E.g. the South Central Radial Area provides 29% of all transportation roles in the South East area. Source: BRES data (2018).

Transport sub-sector	Number of jobs	% of South East*
Land transport and transport via pipelines	1,450	6%
Water transport	50	1%
Air transport	9,120	91%
Postal and courier activities	725	9%
Warehousing/transportation support	14,345	34%

Earnings

In 2019, the average resident in the South Central Radial Area earned £32,640.

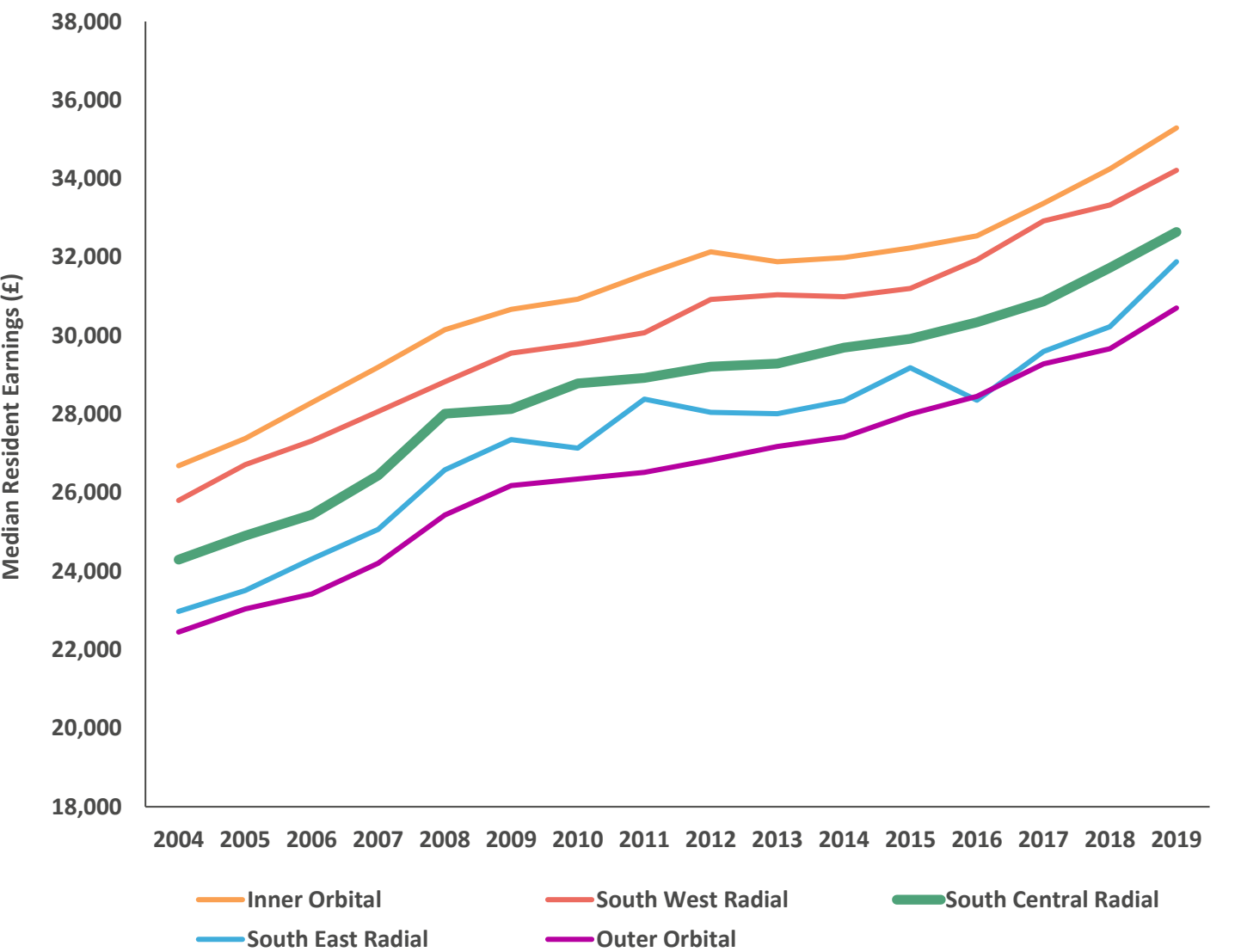
This is in line with the rest of the South East, where the average resident earns £33,110, and far higher than the UK average of £30,350.

Figure 1.4 shows the average earnings for residents from 2004 to 2019. Earnings growth in the South Central Radial Area is in line with the other areas in the South East Region. However, there are significant variations in earnings and earnings growth between the local authorities in the South Central Radial Area.

Areas closer to London tend to have higher resident earnings, with the average resident earning over £38,000 in the authority of Reigate and Banstead. However, this discrepancy is closing, with the areas experiencing the highest increase in resident earnings in the past 10 years all situated along the South Coast. These areas include Adur (31%), Chichester (28%) and Eastbourne (25%).

In contrast, other areas have experienced little growth in the last 10 years. The average resident in Mole Valley has only experienced a 1% increase in earnings. This is due to the area historically being home to high earners.

Figure 1.4: Average resident earnings over time in the South East Region



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

Housing Affordability

In 2019, the average home in the South Central Radial Area cost almost eleven times the average income in this area. This is the highest of the five sub-regions in the South East, where housing is 9.4 times as high as the average income.

Figure 1.5 shows the affordability ratio for each area in the South East from 2002 to 2019.

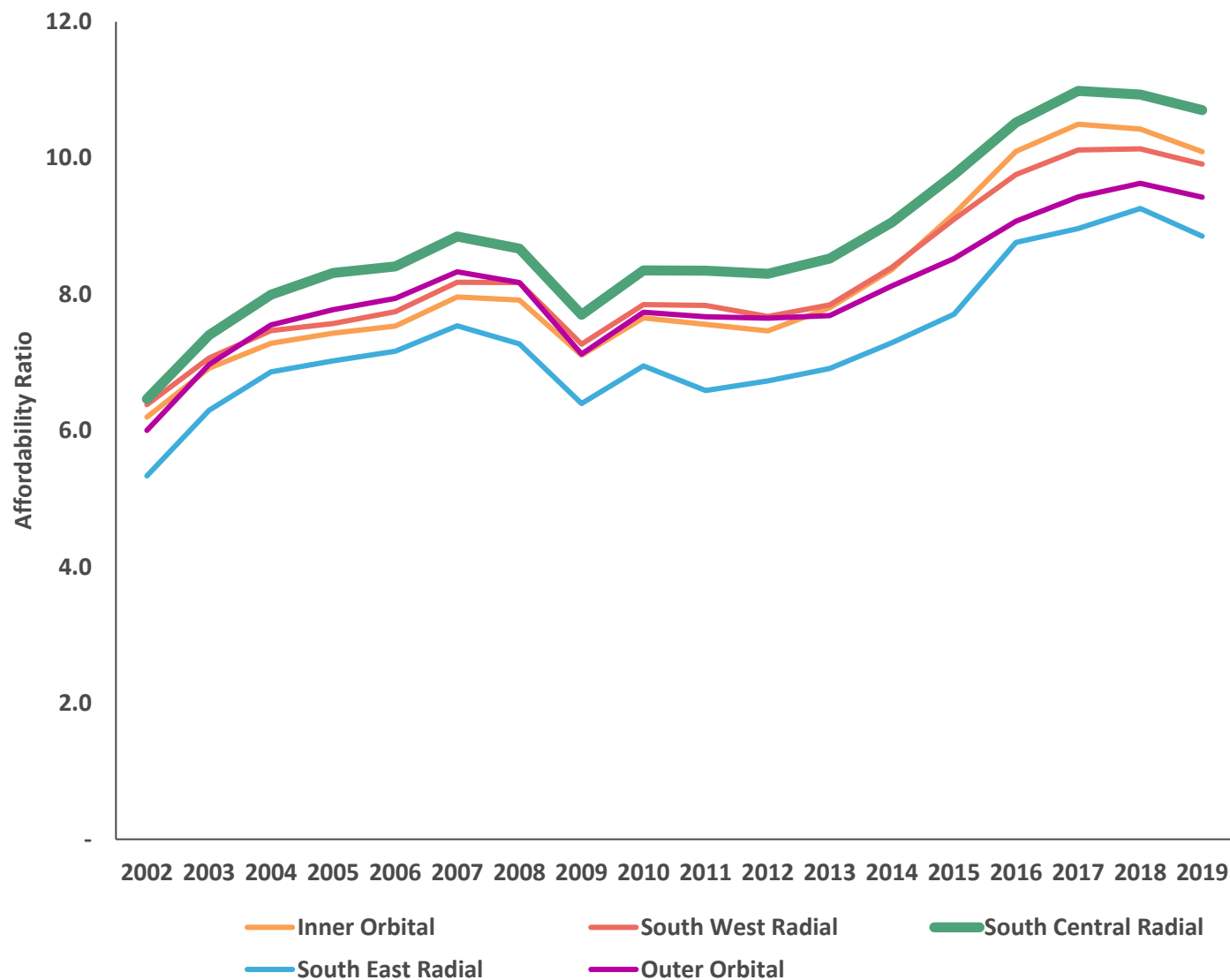
The affordability ratio is calculated using the median house price divided by the median resident earnings. This ratio has been growing for all corridors in the past decade, indicating that housing is becoming more unaffordable.

This increase is predominantly driven by the supply of housing not meeting demand. This has subsequently led to house prices increasing almost twice as fast when compared with resident earnings.

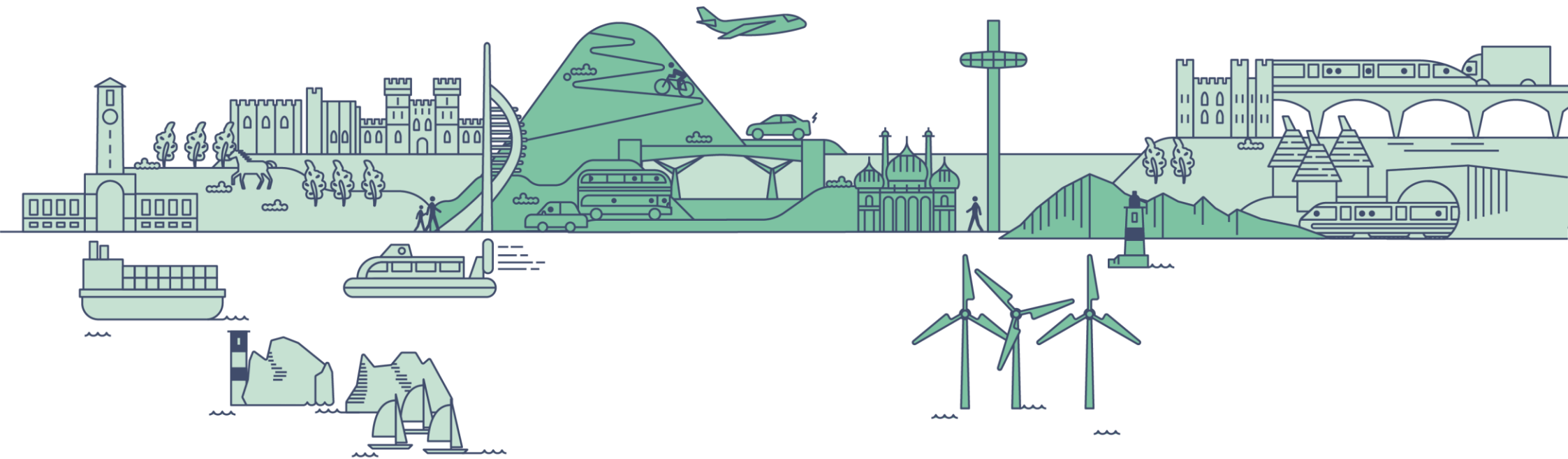
In 2019, the least affordable housing in relation to earnings were in the areas closest to London, with the ratio in Mole Valley being in excess of 15:1, and Tandridge and Epsom and Ewell being in excess of 12:1. The ratio is also high in Brighton and Hove, in excess of 11:1.

In contrast, the most affordable housing is in Eastbourne, with a ratio of 8:1, however, prices here have still significantly increased over the past two decades.

Figure 1.5: Housing Affordability ratio over time in the South East Region



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



Part 1c

Social Context

Social Context

Deprivation

This area has generally low levels of deprivation, although there are pockets of deprivation in urban areas on the coast.

Figure 1.6 highlights the most deprived areas of the South Central Radial Area. While deprivation is relatively low in this area, there are some highly concentrated areas of significant deprivation in urban areas on the South Coast (and some areas in Crawley).

However, it is important to recognise that, these figures might not capture the full extent of deprivation in the area. For example, Brighton and Hove is ranked in the top 30 local authorities in the UK for the number of homeless people per capita.

Poor transport connectivity can be a factor which significantly limits an area's prosperity, acting as a barrier to employment opportunities and services. It is therefore important that these areas are prioritised for transport investment. However, it is acknowledged that transport investment, on its own, is rarely enough to address long standing socioeconomic problems. That the majority of these deprived 'pockets' are in urban areas likely means that connectivity is not a major issue.

Air Quality

There are significant air quality challenges in the South Central Radial Area, particularly in urban areas.

Figure 1.7 shows the location of Air Quality Management Areas (AQMAs) in the South Central Radial Area.

There are multiple AQMAs in this area, particularly around the urban areas along the coast (notably Brighton and Hove) and around the northern end of the area (Redhill and Reigate). These are two of the most heavily urbanised areas of the corridor, and therefore have the highest densities of housing, transport and industry.

High levels of motorized travel, particularly diesel engine vehicles, are one of the highest contributors to poor air quality, and many of the poorest air quality is found where large interurban corridors and strategic roads pass through urban areas, where particulate matters cannot readily dissipate. This is particularly at Redhill, where the M25 meets the M23.

That said, in general, the South Central Radial Area has relatively good air quality. This is thanks to the large number of rural and/or designated protected areas that are present in this area.

Safety

Highway collisions are a significant problem in some parts of the South Central Radial Area, especially around the largest urban areas.

Figure 1.8 shows the location of collision hotspots in the South Central Radial Area. There are several hotspots distributed along the corridor, particularly in and around urban areas.

There are a significant number of hotspots in Brighton and Hove and Worthing. There are also hotspots in town and city centres in Bognor Regis, Chichester, Crawley, Eastbourne, Hailsham, and Royal Tunbridge Wells. There are also several hotspots on major roads in Epsom and Ewell.

This relatively high concentration of accidents around urban areas is likely reflective of the fact that there are more junctions and intersections, and therefore more opportunities for collision around these urban areas. There are also high concentrations of traffic in these areas, which means that the probability of collisions is higher. Infrastructure interventions to improve road safety, appropriate speed limits, and lower car usage, is likely to improve the rates of accidents around these urban areas.

Figure 1.6: Indicators of Multiple Deprivation

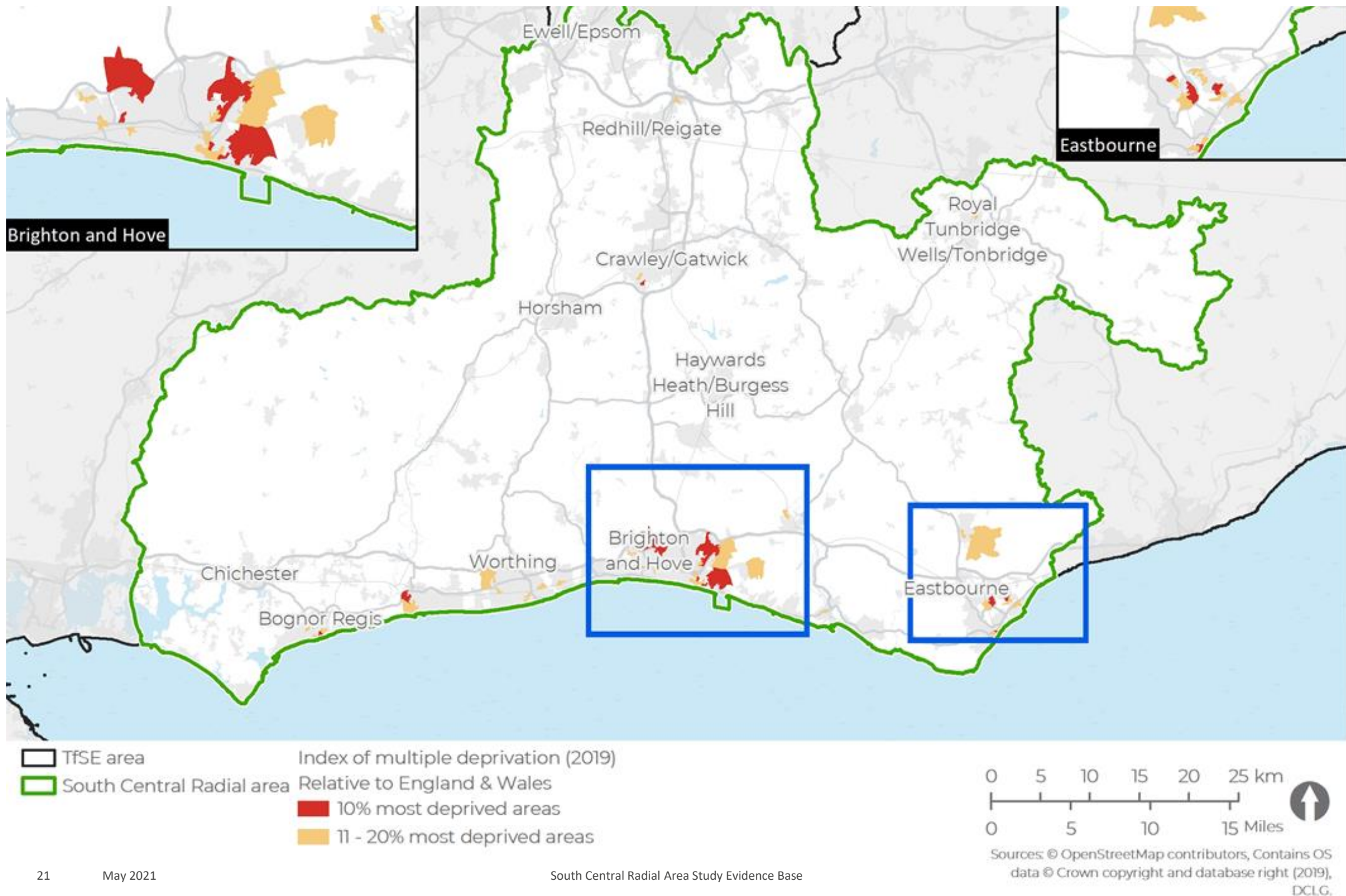


Figure 1.7: Air Quality Management Areas

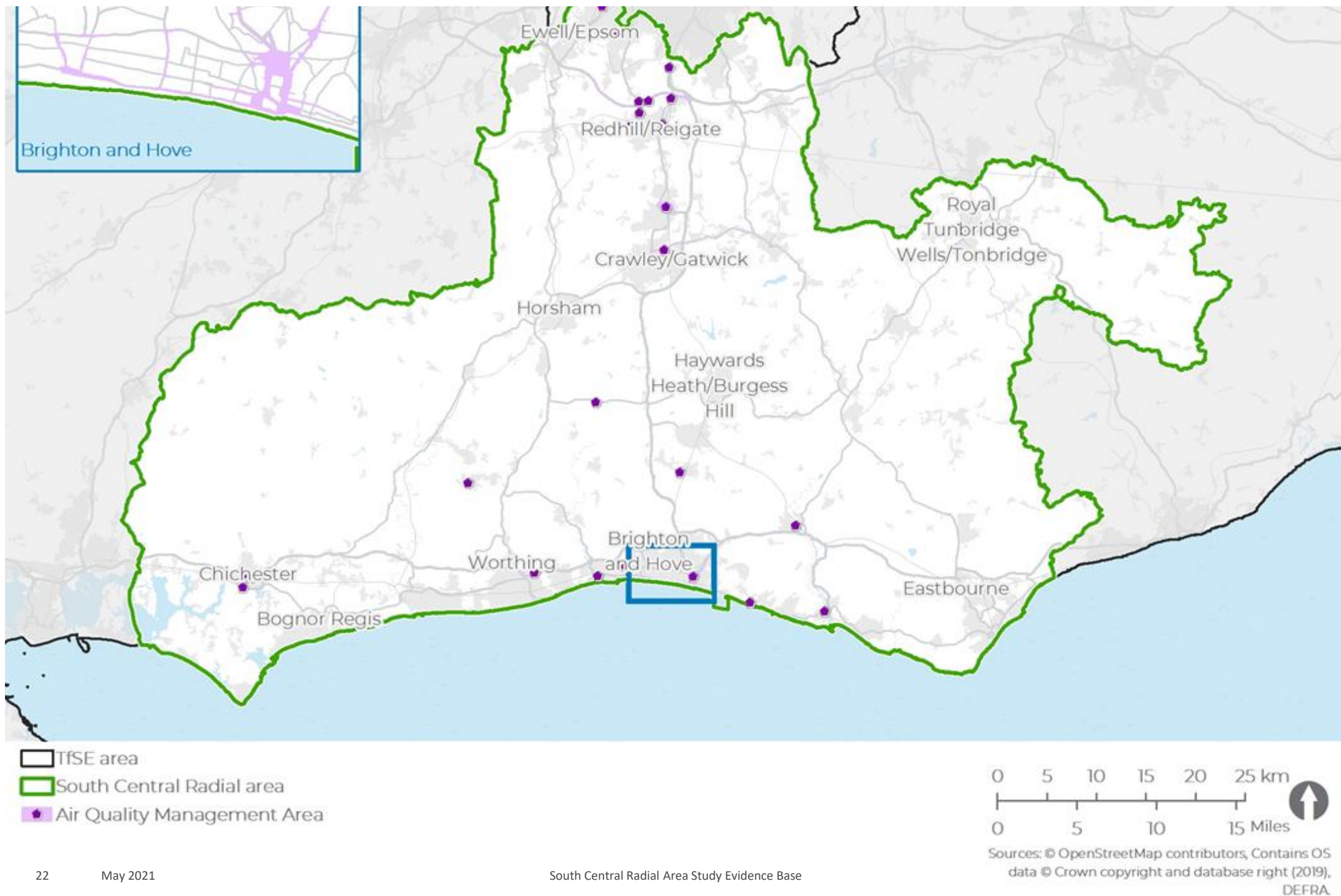
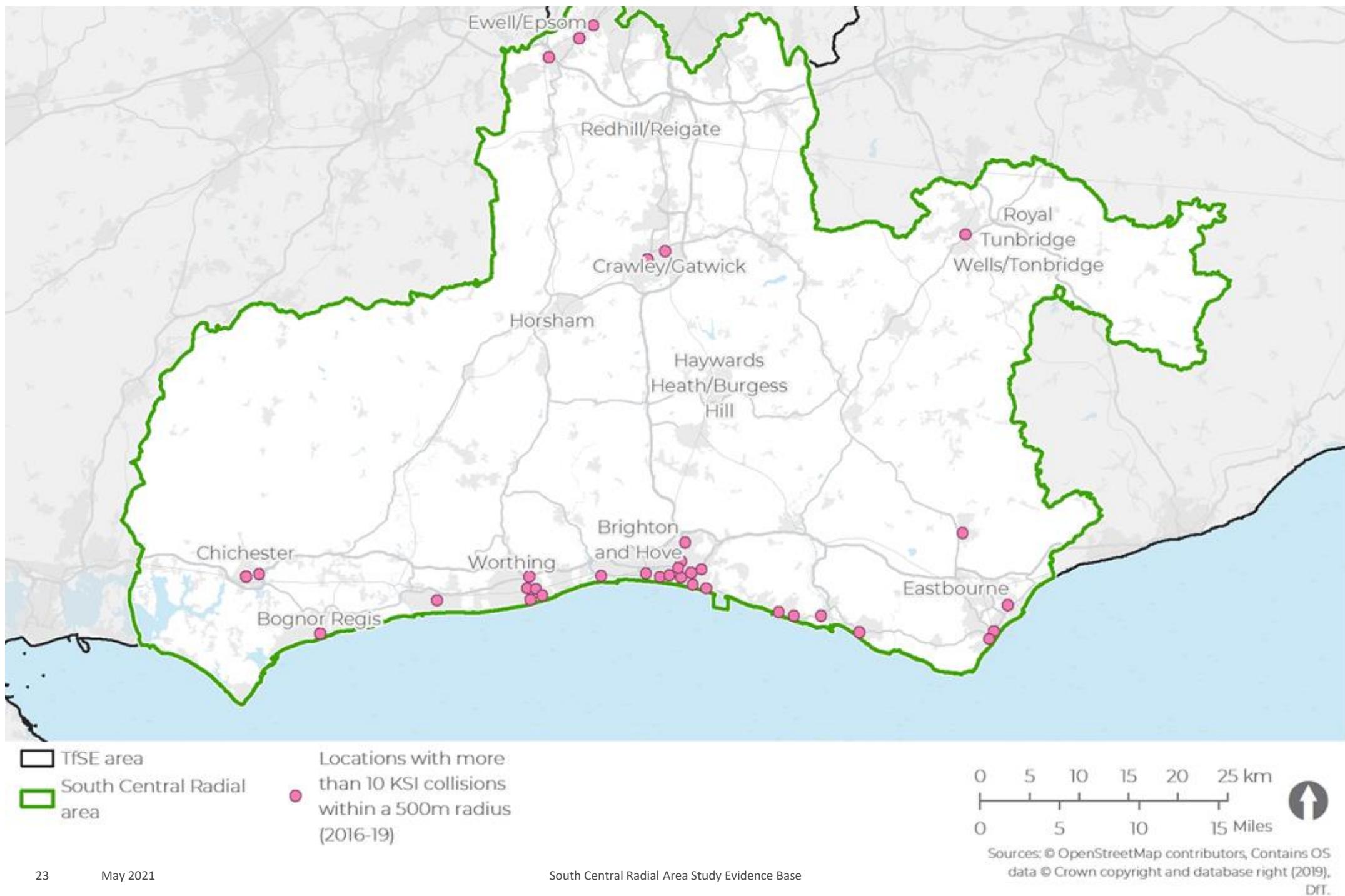


Figure 1.8: Collision hotspots





Part 1d

Environmental Context

Environmental Context

Protected Areas, Landscapes, Ecology

The South Central Radial Area has a rich natural environment that is cherished by local residents and visitors.

Figure 1.9 shows Protected Areas and **Figure 1.10** shows Landscape Character Areas of the area. Key features of this area include:

- 1 UNESCO Biosphere Reserve;
- 1 National Park;
- 2 Areas of Outstanding Natural Beauty;
- 4 Marine Conservation Areas;
- 4 Ramsar sites;
- 5 Special Protection Areas;
- 7 National Nature Reserves;
- 13 Special Areas of Conservation;
- 155 Sites of Special Scientific Interest; and,
- 3,182 Ancient woodland sites.

The South East (as a whole) has more than 60% of the nation's vegetated shingle resource; more than 15% of its coastal and floodplain grazing marsh; 16% of coastal lagoons; and over 10% of England's intertidal mudflats. It is also home to 40% of Europe's offshore chalk exposure, including well known landmarks at Beachy Head.

Heritage

The area has a very rich natural and historical heritage.

As **Figure 1.11** shows, the area has a rich cultural heritage. The area is home to:

- 1 registered battlefields: Battle of Lewes (1264);
- 1 Heritage Coast area (Sussex Coastline);
- 87 registered parks and gardens;
- 429 conservation areas;
- 705 scheduled monuments; and,
- 16,737 listed buildings.

The area is also home to:

- Several historic towns and cities, including Chichester, Arundel, Lewes, Royal Tunbridge Wells, Midhurst, Petworth, Selsey, Steyning, Storrington, Old Hastings, and Rye;
- The Bluebell Railway, the East Sussex Heritage Railway, and the Spa Valley Railway; and
- Internationally renowned festivals such as Glyndebourne, Brighton and Hove Pride, and Goodwood Festival.

Providing access to and from these areas and events is fundamental for the region's development and wellbeing of citizens.

Flood Plains

There are major flood risks on large sections of the corridor.

As illustrated by **Figure 1.12**, in addition to the flood risks along the coast, the corridor is home to numerous rivers, contributing to several areas at high risk of flooding.

The floodplains alongside the River Adur and River Ouse are both susceptible to flooding during extreme weather events. A flood defence scheme protecting communities along the river Adur was completed in March 2019.

To the west of the area, there are potentially major flood risks around Chichester and Bognor Regis. The Chichester Harbour contains numerous small areas with potentially high flooding risk. The Manhood peninsula in West Sussex was affected by significant flooding in July 2012. Other parts of this county were also adversely affected by this event.

To the east of the area, there are areas of flood risk around the Pevensey Levels.

There is a consensus in the scientific community that incidents of extreme weather will only increase as the impact climate change starts to materialise globally, meaning that there is an increasing likelihood of severe flooding in the area.

Figure 1.9: Protected Areas

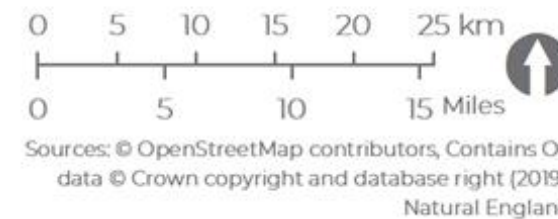
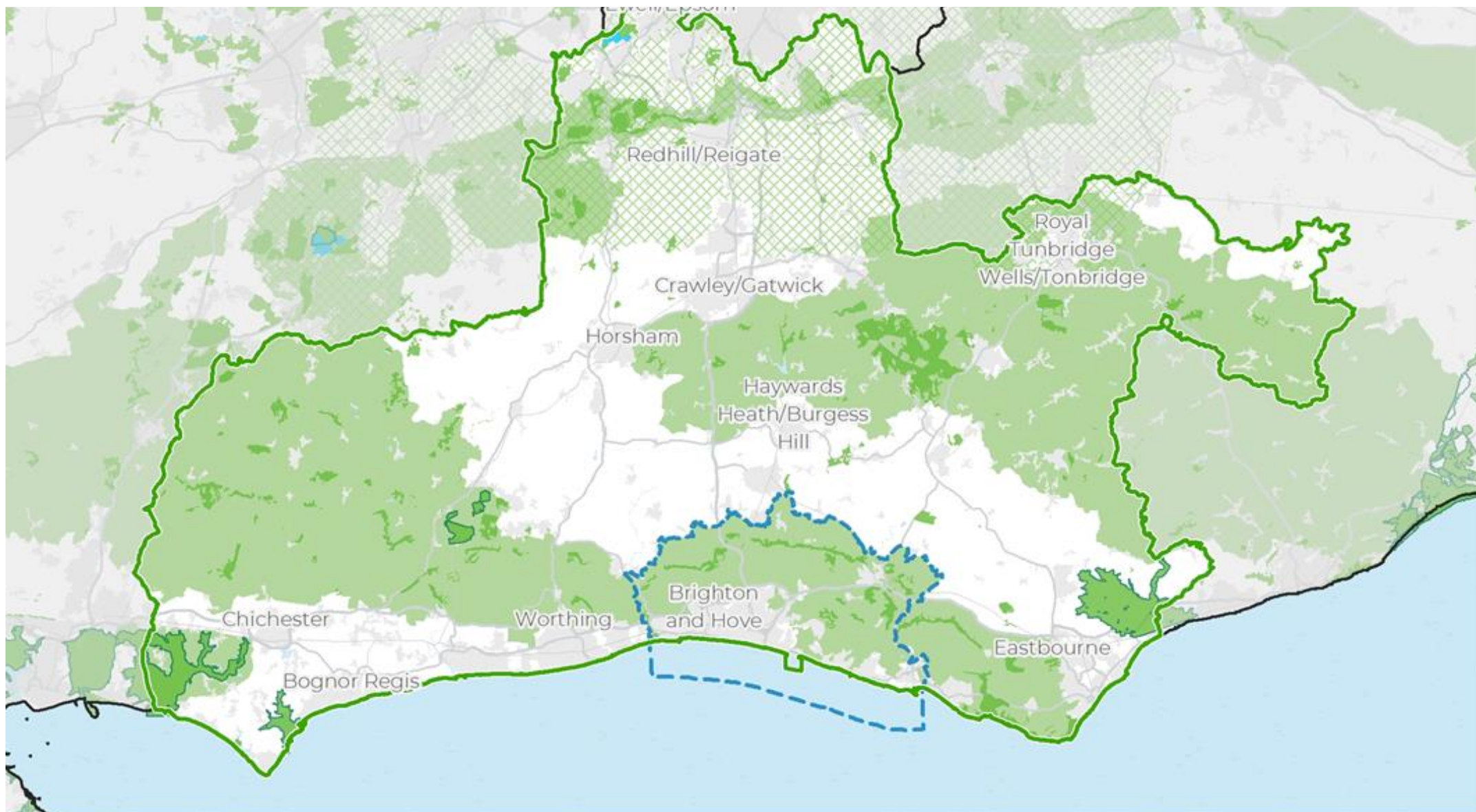


Figure 1.10: Landscape Character Areas

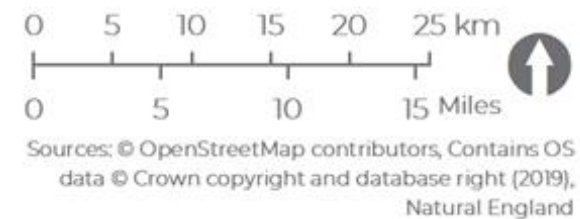
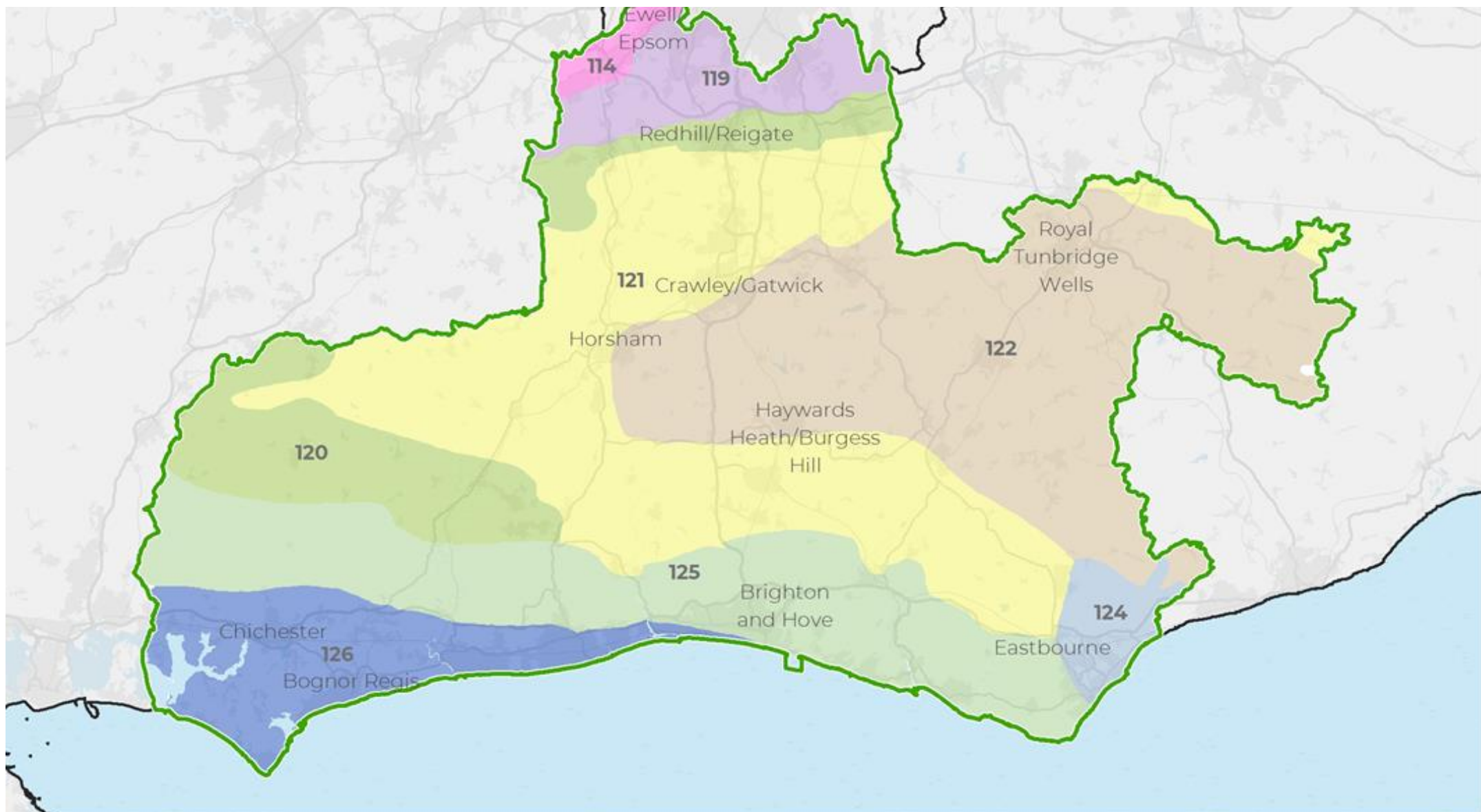


Figure 1.11: Heritage

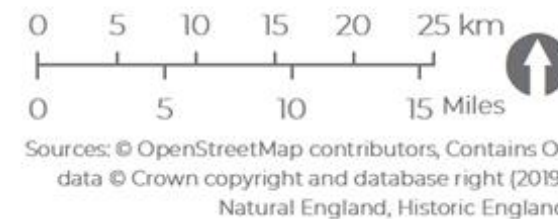
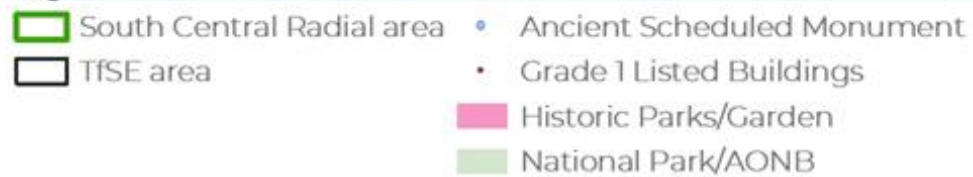
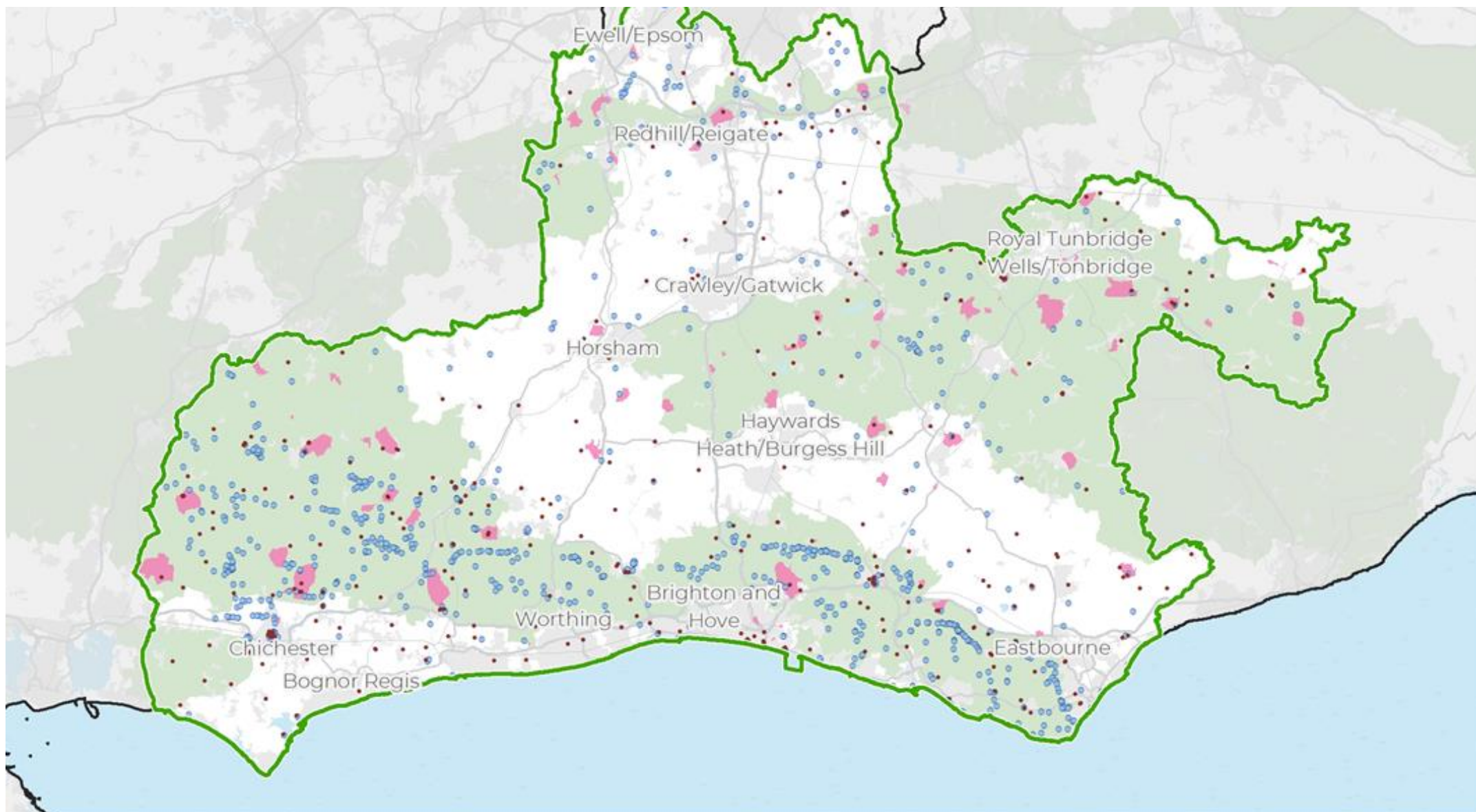
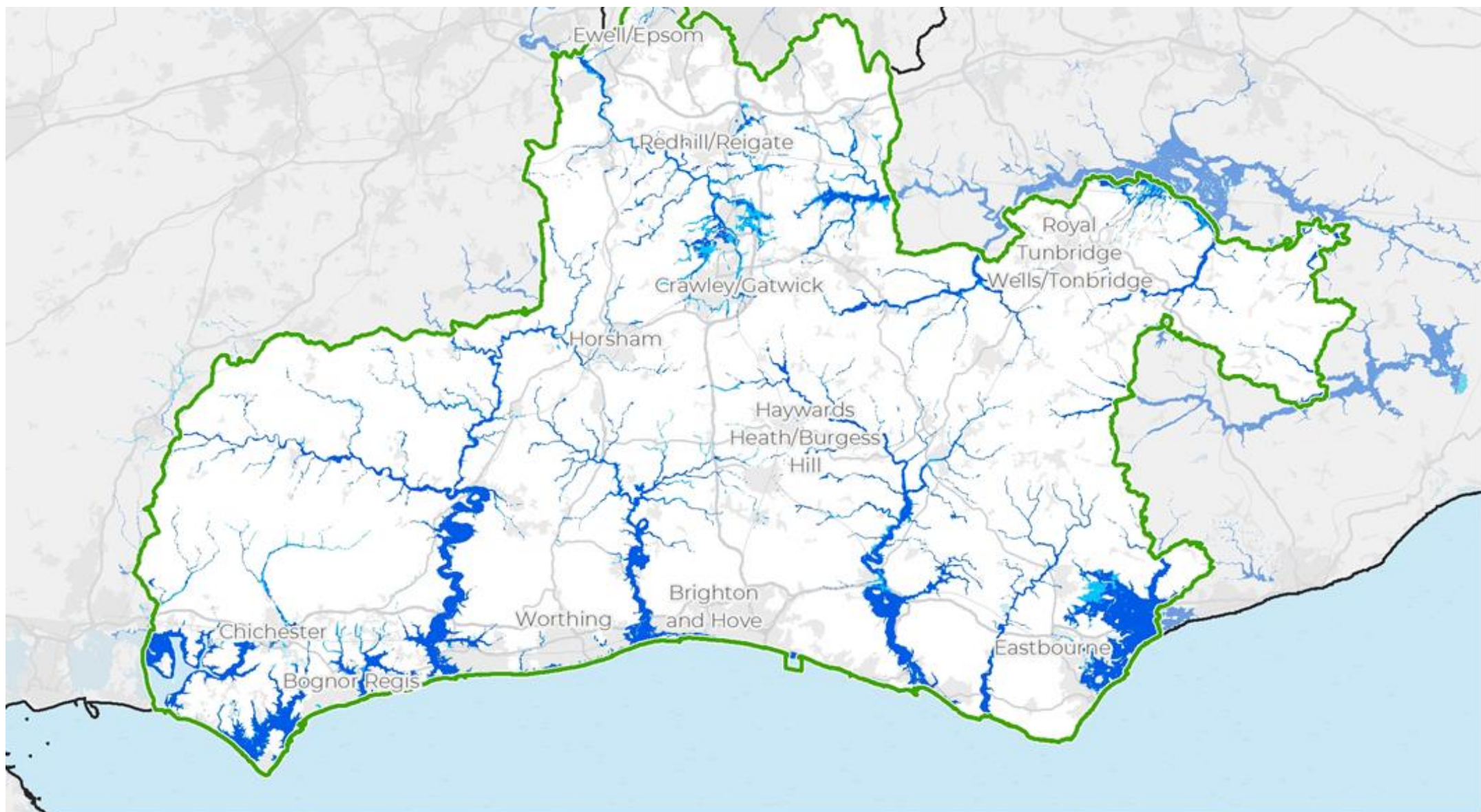
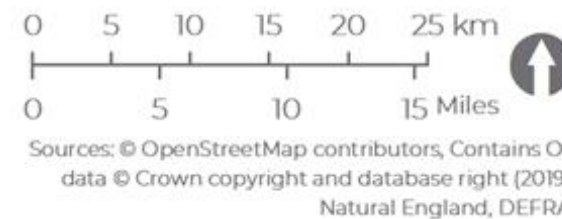


Figure 1.12: Flood Risk Areas



- TfSE area
- South Central Radial area
- Flood zone 2
- Flood zone 3

Zone 2 - 0.1 - 1% chance of flooding each year
 Zone 3 - > 1% chance of flooding each year from rivers, or >0.5% chance of flooding each year from sea



The Carbon Challenge

Current Carbon Emissions

In 2018, the South Central Radial Area’s transport network emitted less carbon per capita than the South East overall.

3,746kTCO₂ were emitted by transport in 2018 in the South Central Radial Area, making up 45% of total carbon emissions. This is in line with other sub-regions in the South East. **Figure 1.13** 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/lower levels of transport demand along these roads.

Current Carbon Trajectory

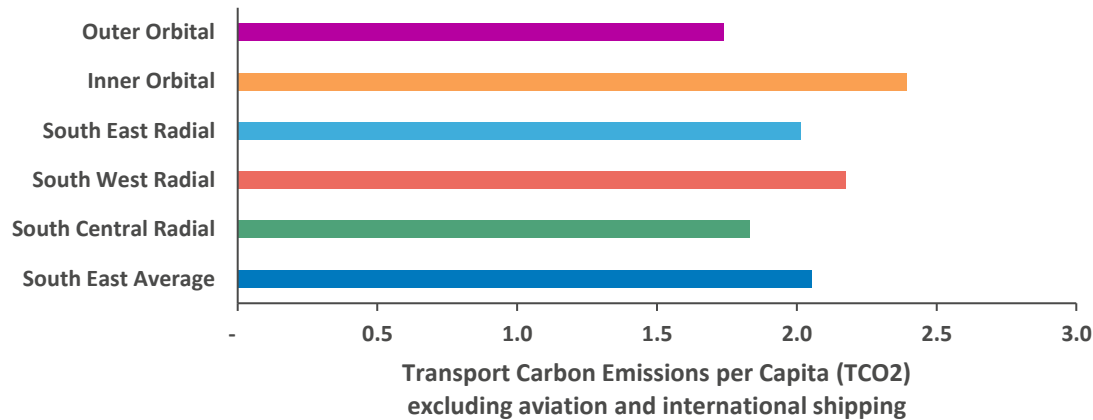
As **Figure 1.14** shows, reaching a net zero carbon transport network by 2050 (yet alone 2030) will be very challenging.

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

Economic growth and carbon emissions have become decoupled at both a national and regional scale (since 1990 the UK Economy has grown 72% while the country’s carbon emissions have dropped by 42%) meaning that decarbonisation should be seen as an economic opportunity, rather than a burden.

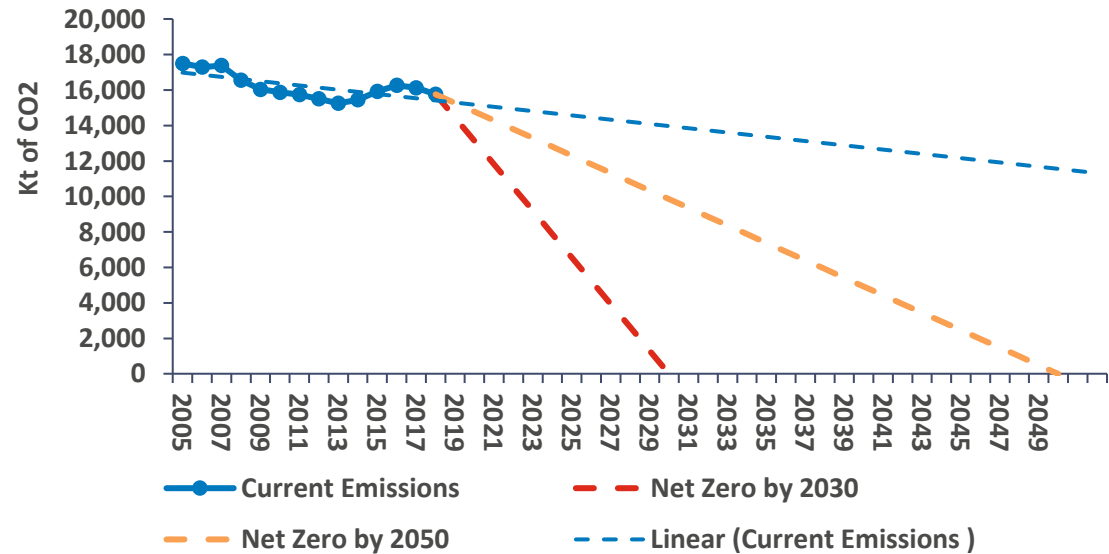
At the time of writing in March 2021, 17 of the 20 local authorities (upper and lower tier) in the South Central Radial Area have declared Climate Emergencies and set targets to reach net-zero carbon emissions by 2050 (in some cases, much earlier).

Figure 1.13: Transport Carbon Emissions South East Area

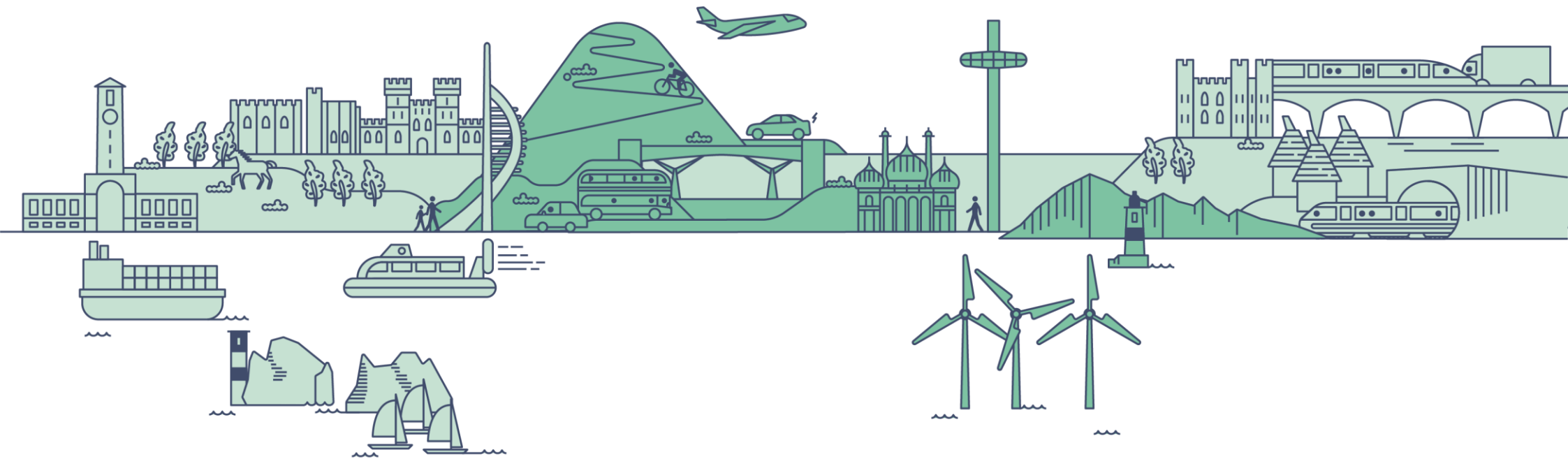


Source: BEIS (2018)

Figure 1.14: Carbon Emissions Trajectory for the South East Area



Source: BEIS/DEFRA (2019)



Part 1e

Transport Networks

Transport Networks

Highways

The South Central Radial Area is heavily dependent on the M23/A23 corridor.

Figure 1.15 shows the key highways in the South Central Radial Area and highlights several congestion hotspots on strategic/major roads.

The A23/M23 is the primary artery along this corridor connecting London and the M25 with Gatwick Airport, Crawley, and Brighton and Hove. Other radial corridors include the A22 and A24 which connect London and the M25 with Eastbourne and Worthing respectively.

The A24 performs a similar role to the A23 between the M25 and Worthing. This highway, which has been improved recently, provides relatively high capacity (much of it is dualled).

The A22 connects the M25 to Eastbourne via East Grinstead and Hailsham. This highway is more developed at the southern end, but is much more constrained at the northern end.

The A272 and the A264 highways connect the A22, A23, and A24. They also serve fast growing towns such as Horsham and Burgess Hill.

TfSE's vision for planning for people and places, as opposed to planning for vehicles, means any future highway investment will need to deliver wider, sustainability objectives.

Railways

The Brighton Main line forms the railway spine of the South Central Radial Area.

This predominantly four tracked railway line supports fast and local services between London with Gatwick Airport, Crawley, Haywards Heath and Brighton. Many services continue along the South Coast to Eastbourne and Worthing via the East and West Coastway lines. Supporting radial railway lines in this area include the Mole Valley and Arun Valley line, which connect Dorking, Horsham, Chichester and Littlehampton to London. The Oxted line, serving East Grinstead and Uckfield is partially unelectrified and features single track sections.

Figure 1.16 presents the average speed of rail journeys along rail corridors in the South Central Radial Area and highlights the disparity in speeds between the Brighton Main line and other railways. **Figure 1.17** presents a map of the rail network and station usage in 2019/20. In this year the busiest passenger stations were:

- Gatwick Airport – 21.2 million;
- Brighton – 17.3 million;
- Haywards Heath – 4.4 million;
- Epsom – 4.0 million;
- Tunbridge Wells – 3.8 million;
- Redhill – 3.8 million; and
- Three Bridges – 3.2 million.

International Gateways

The South Central Radial Area is home to Gatwick Airport, the second busiest passenger airport in the UK, serving 46.6 million passengers in 2019.

Figure 1.18 shows the international gateways in the area. Gatwick Airport is the busiest passenger gateway in the South Central Radial Area. This airport is generally well served by the transport network. It is directly served by the M23 motorway, which has recently been upgraded to a Smart Motorway, and Brighton Main Line railway, which connects the airport to several London termini, several major stations in the South East, and (via Thameslink) several destinations to the north of London. Gatwick is also served by the area's only Bus Rapid Transit network – “Fastway”.

Gatwick Airport has submitted plans to expand its capacity through improvements to runway capacity and operations. Despite the setback from COVID-19, Gatwick still has the ambition to develop a second runway to the South West of the existing site.

The corridor is home to the Port of Shoreham, which handled 2.0 million tonnes of freight in 2019, and Newhaven Port, which handled 0.8 million tonnes of freight and served 378,000 passengers in 2019.

Figure 1.15: Highway Network and Congestion

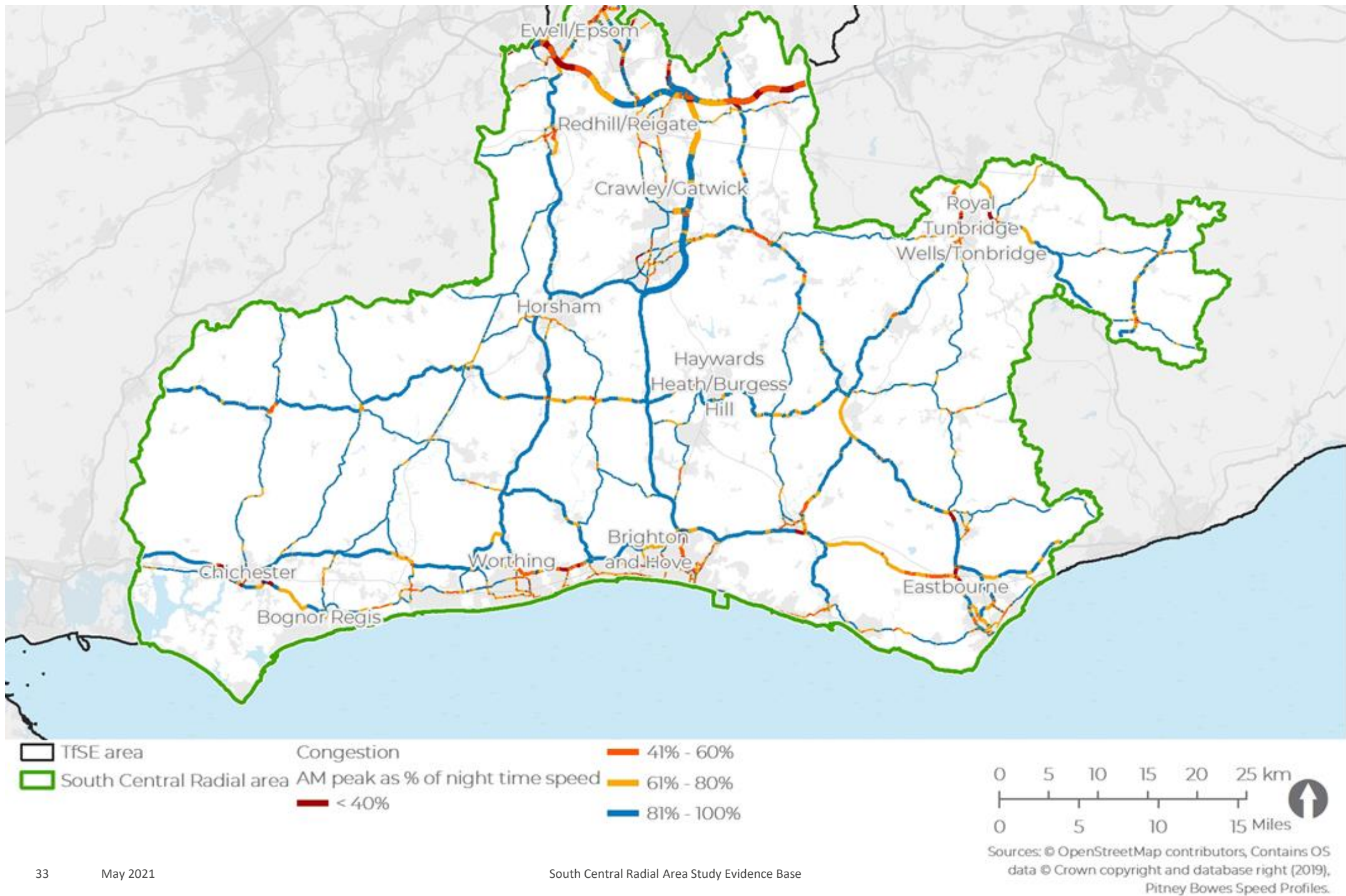
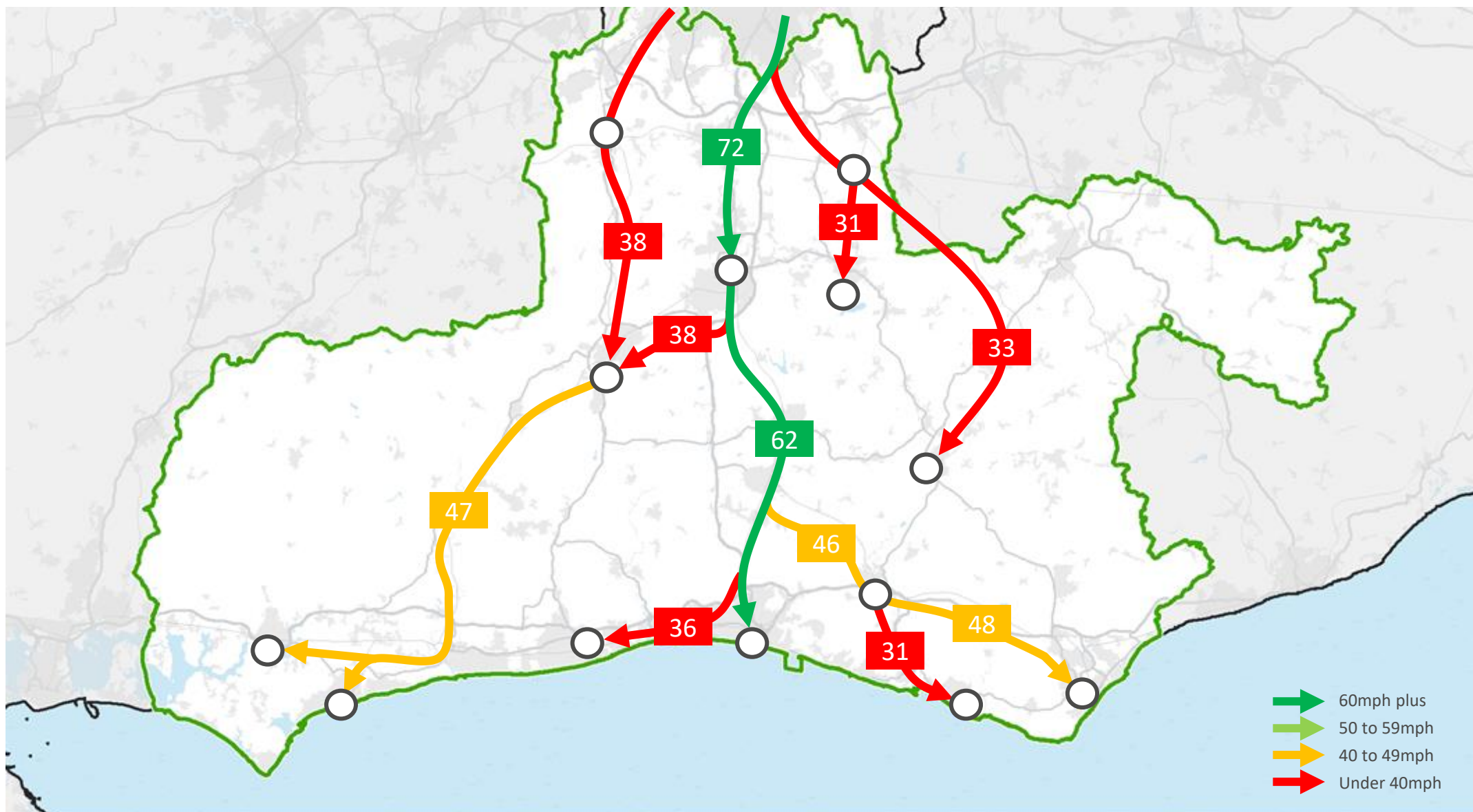


Figure 1.16: Average speed of rail journeys along rail corridors in the South Central Radial Area



TfSE area
 South Central Radial area

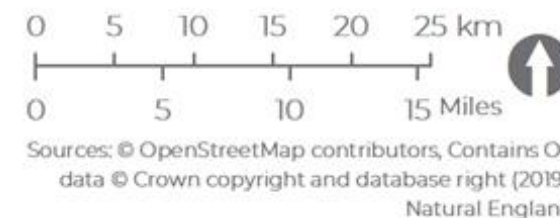


Figure 1.17: Railway Network and Station Entries and Exits

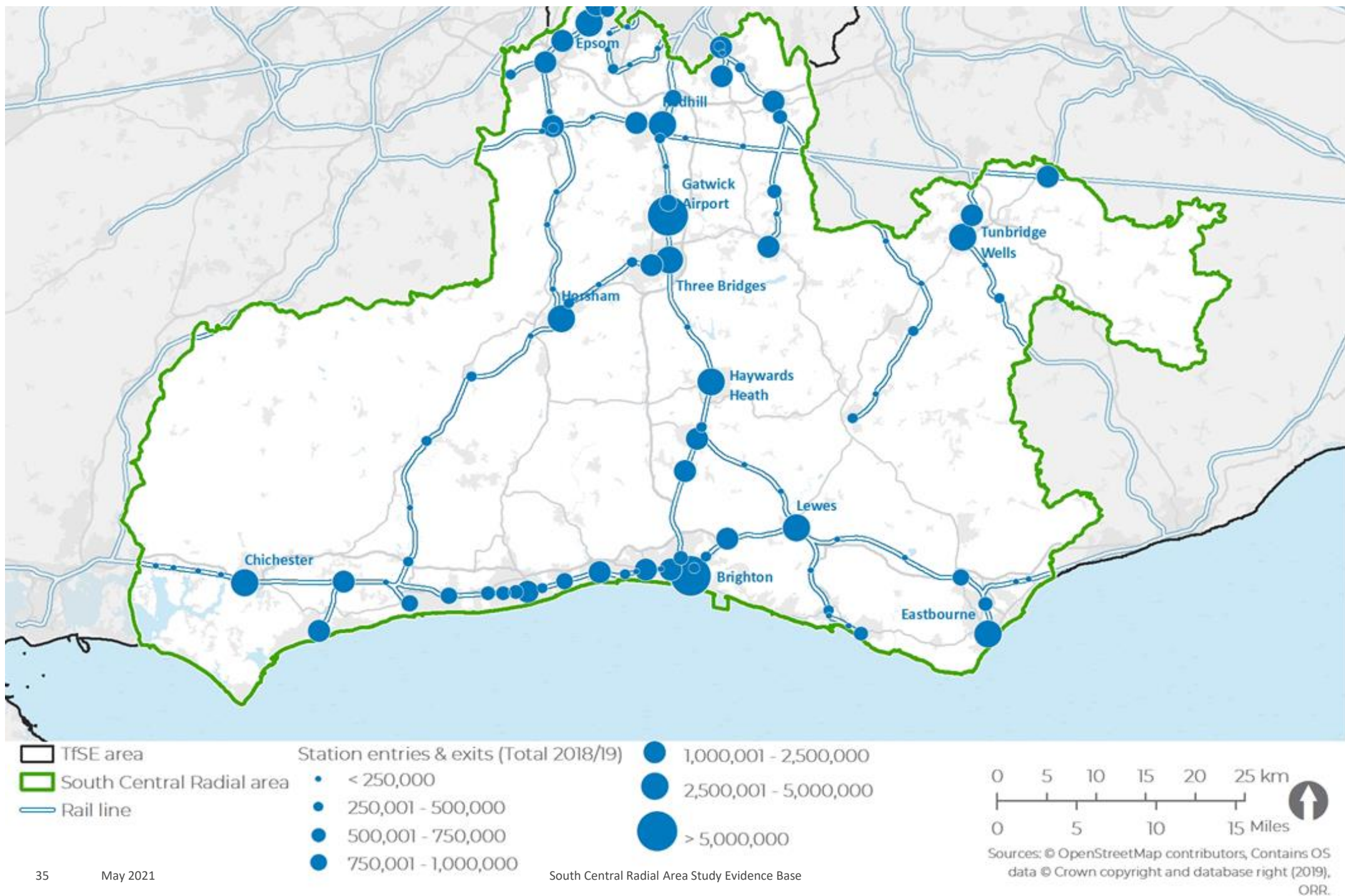
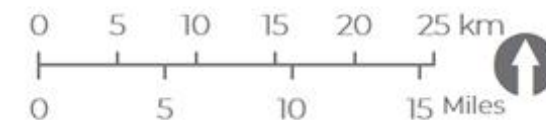
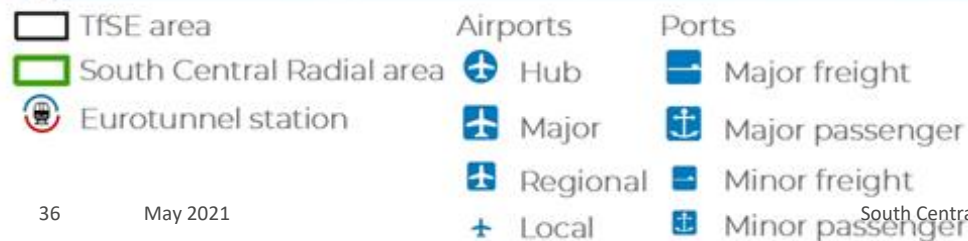


Figure 1.18: International Gateways



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Part 1f

Public Transport Access and Connectivity

Public Transport Access and Connectivity

Public Transport Access

As might be expected, urban areas generally enjoy better access to public transport services than rural areas – but there are some interesting exceptions.

Figure 1.19 shows the average minimum journey time to key services by public transport (plus walking). Key services are defined as providers of retail, education, and health services.

Unsurprisingly, access to these services is much faster in urban areas compared to rural areas.

Figure 1.20 shows the difference in journey time between car and public transport access to the same services considered in Figure 1.19. Not only do people living in rural areas need to travel further for these services, the quality of public transport provision tends to be more limited.

Figure 1.21 shows trends in bus use in the South Central Radial Area. This shows encouraging signs of growth in urban areas (e.g. Brighton) but significant decline in rural areas, most notably East Sussex. These differing trends could be due to a number of external reasons, such as an increase in the number of young people living in Brighton. However, it is worth noting that the fall in bus patronage in East Sussex may have caused operators to reduce the number of services, which in turn makes bus an unattractive mode of transport for potential passengers.

Catchment Analysis

To help better understand how Public Transport connectivity varies across the South East, we conducted analysis of Public Transport connectivity to key urban hubs.

Figures 1.22 and **1.23** show the areas of South East England that can be reached by public transport for the following large urban areas:

- Crawley/Gatwick (**Figure 1.22**);
- Brighton and Hove (**Figure 1.23**);

This analysis examines how easy/difficult it is to travel from a given point using public transport (and walking). Using isolines, it shows how far it is possible to travel by 0-30 minutes, 31-60 minutes, and 61-90 minutes.

In general, spaces where this catchment covers a larger area, it also likely includes a wider range of opportunities and amenities.

The results of this analysis clearly show that that Public Transport provision is not equitable between urban areas across the South East.

Crawley/Gatwick has excellent connectivity north and south, including excellent connectivity across all of the London urban area. However, it suffers from significantly poorer connectivity in an east-west direction.

Brighton has excellent connectivity north and towards London, but poorer connectivity along the coastline (both east and west).

Both areas illustrate challenges with east – west (sometimes referred to as orbital) movements. The Outer Orbital Area Study is examining east – west movements along the South Coast and the Inner Orbital Area Study will examine east – west movements on the M25 and nearby railway corridors. This South Central Radial study will consider east – west movements around the Gatwick Diamond areas.

Figure 1.19: Public Transport Access

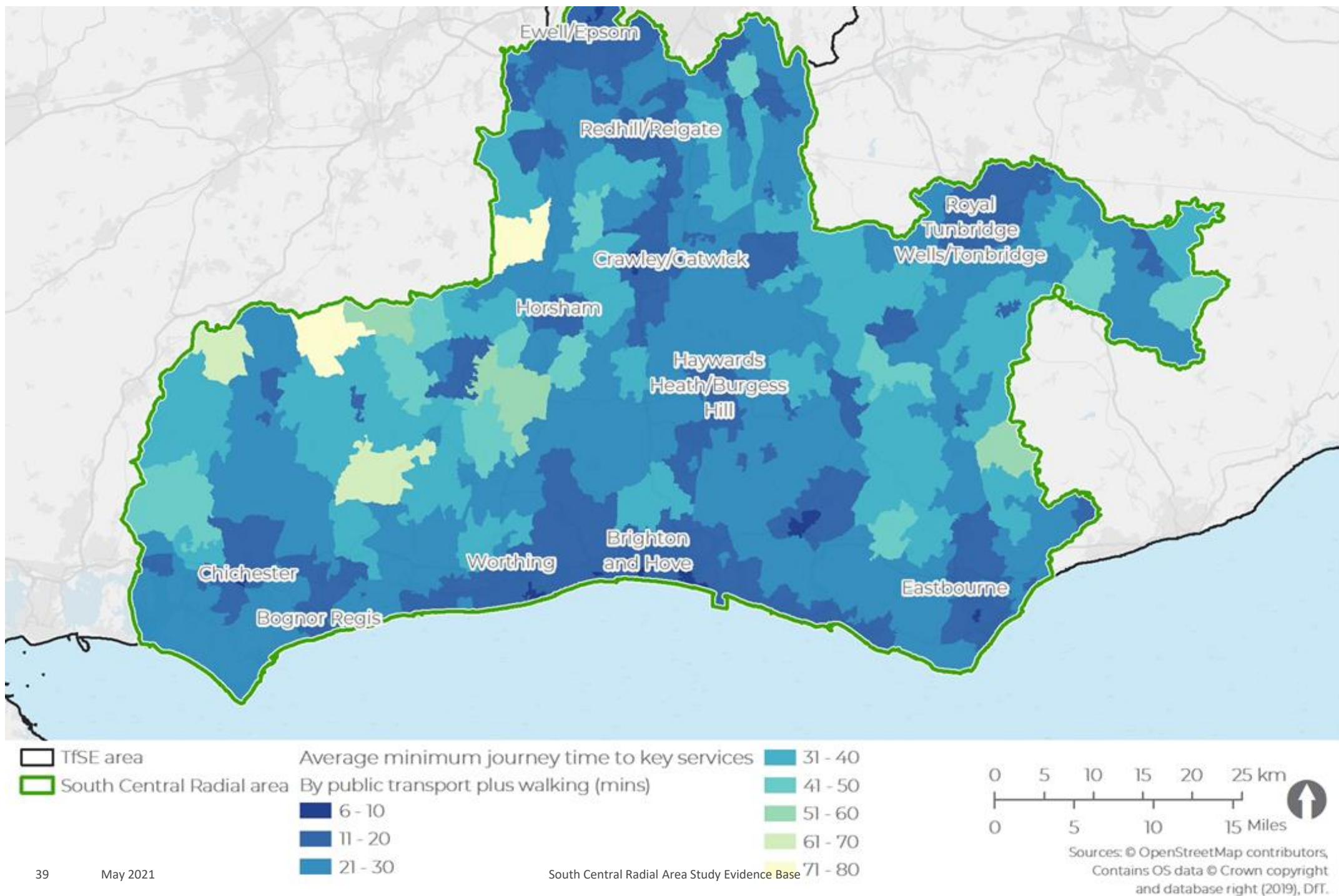


Figure 1.20: Comparison of Car and Public Transport options

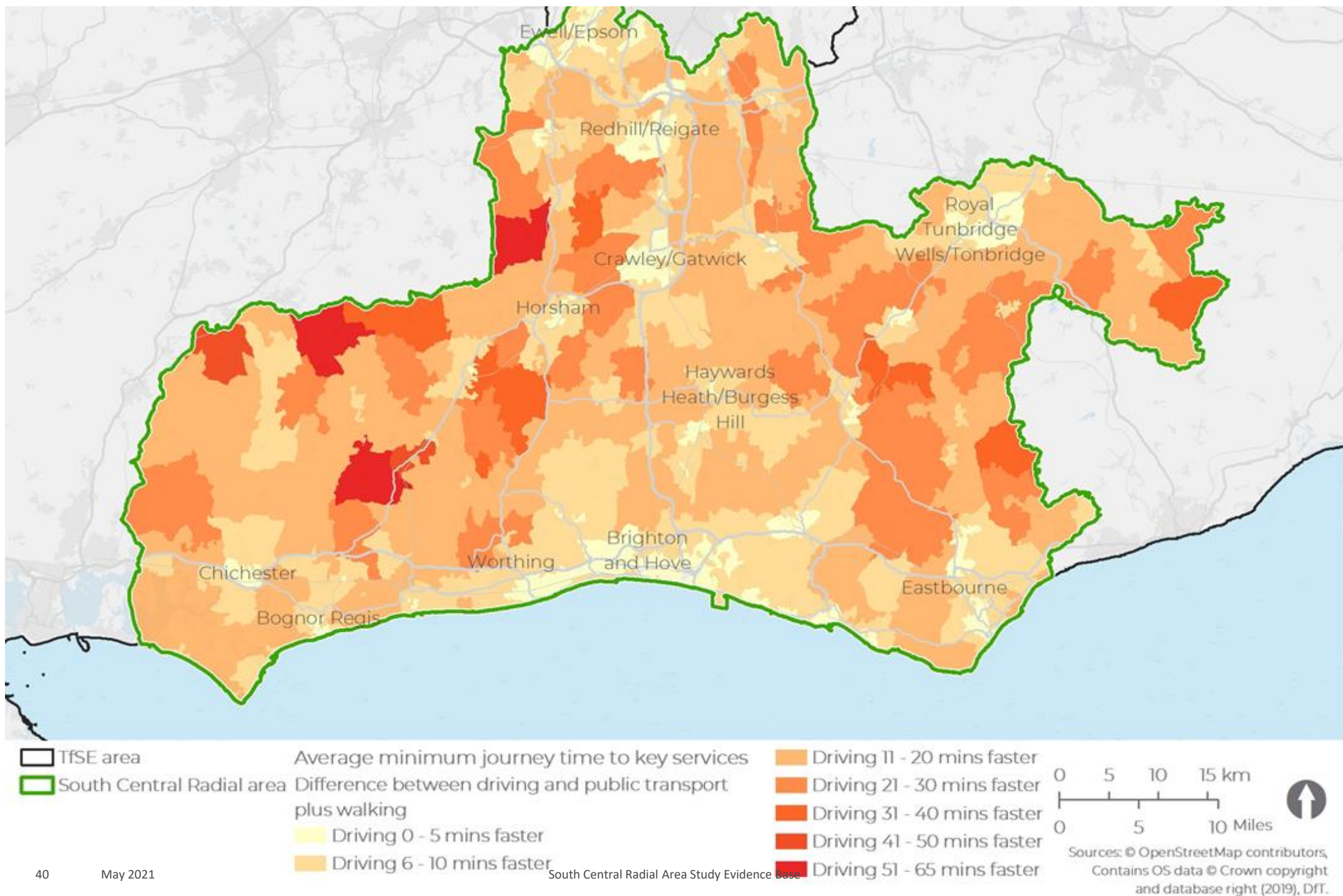


Figure 1.21: Annual Bus Passengers for Local Transport Authorities in the South Central Radial Area

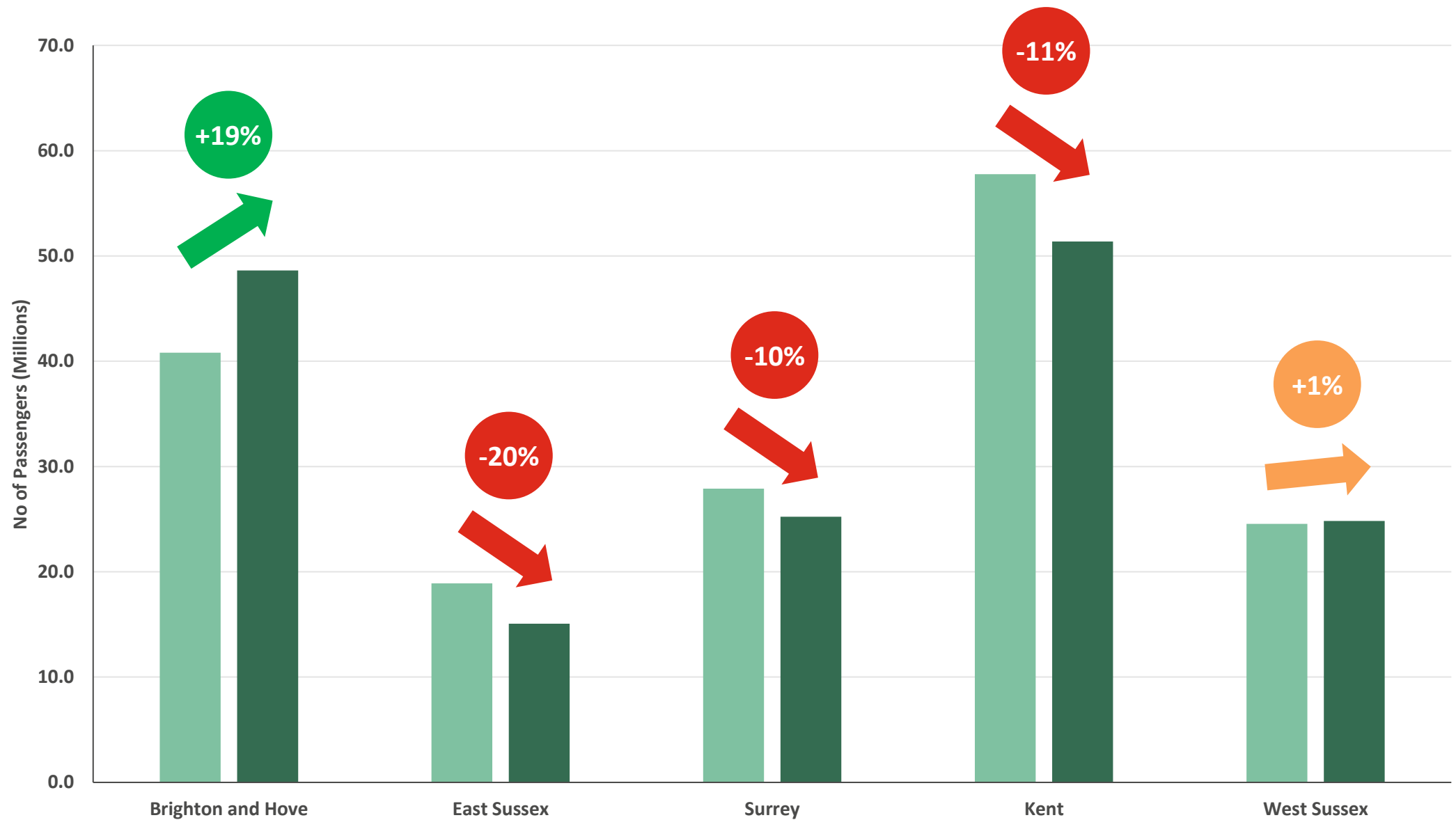


Figure 1.22: Crawley/Gatwick Public Transport Catchments

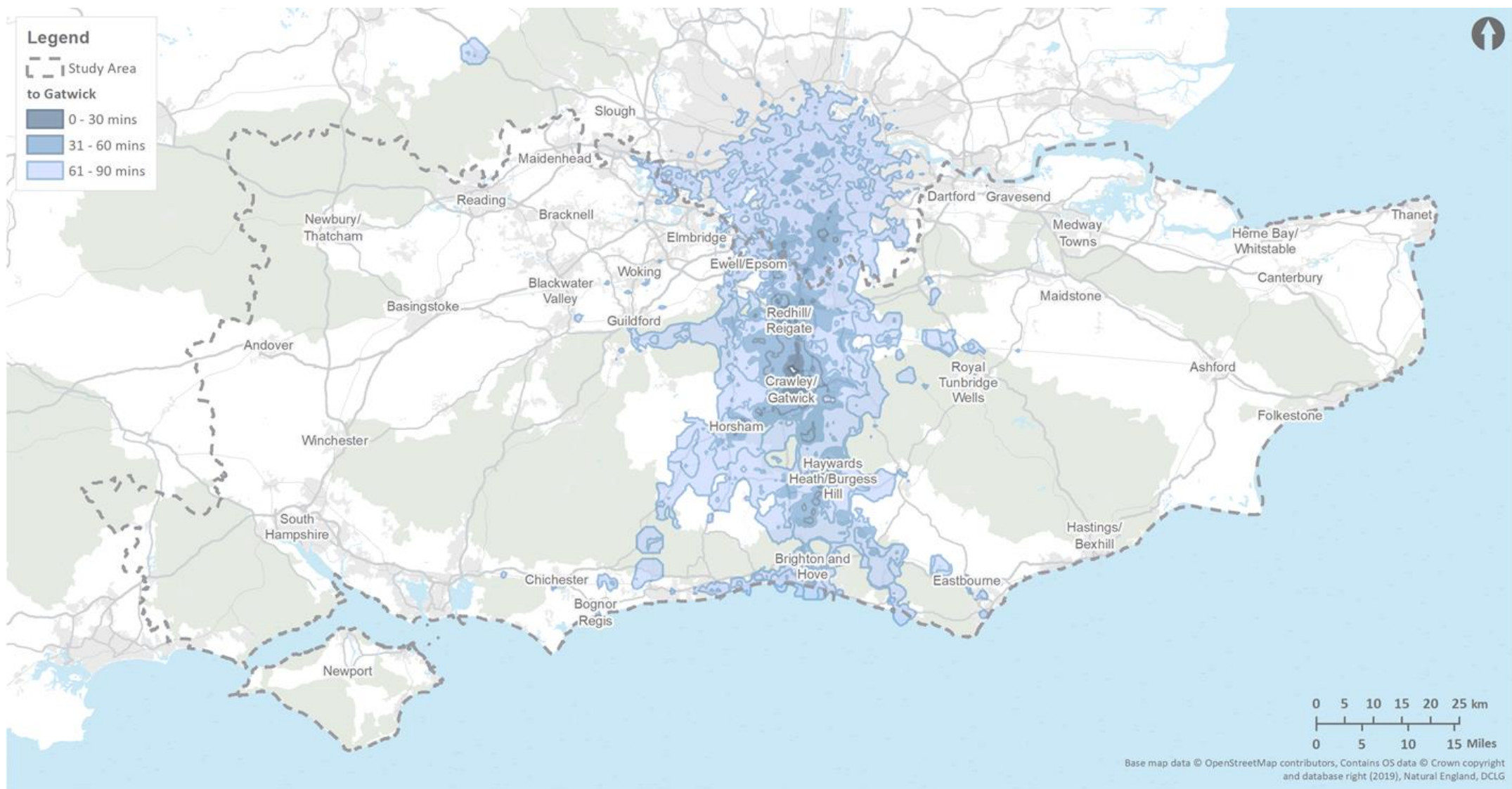
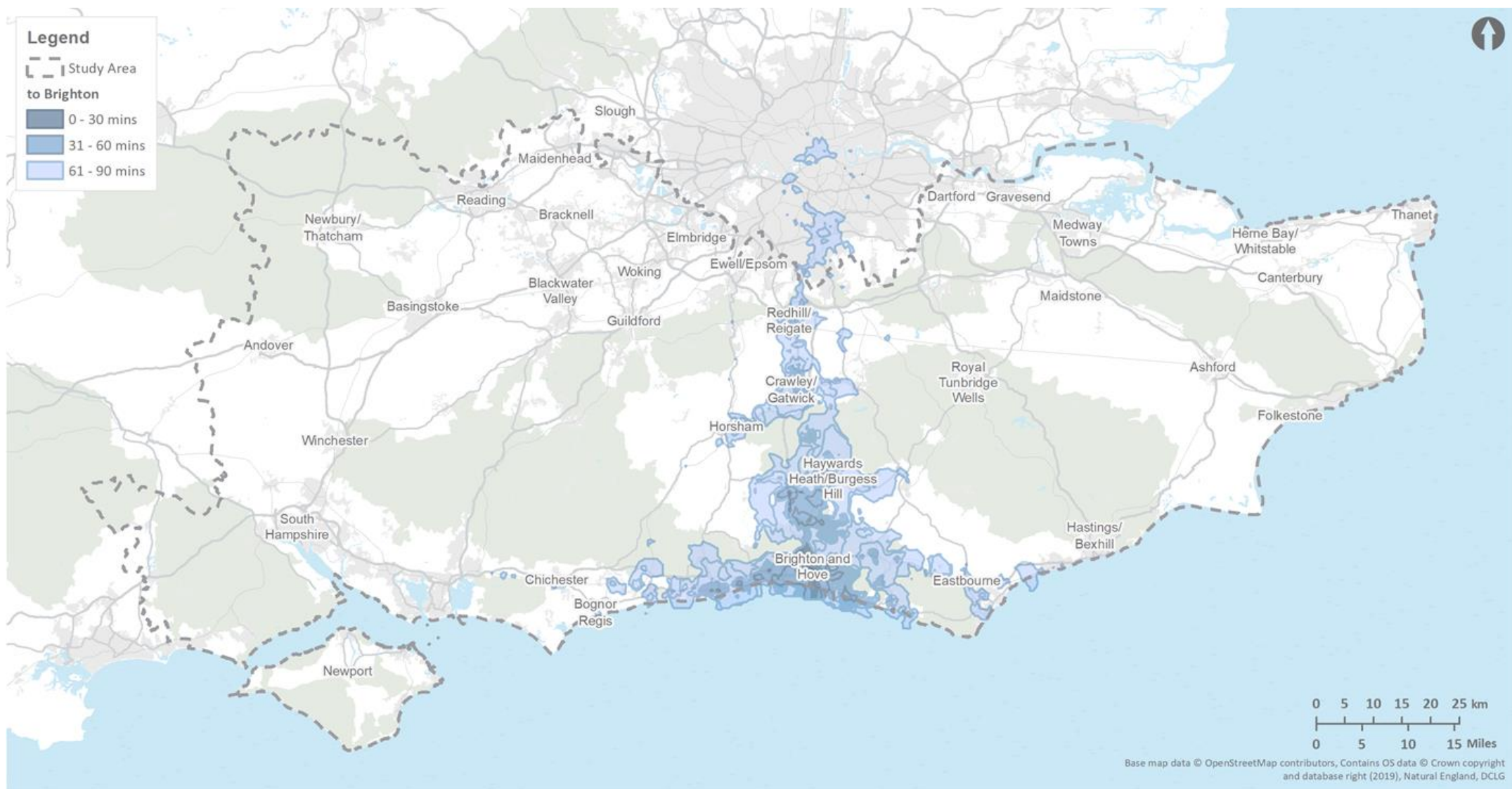
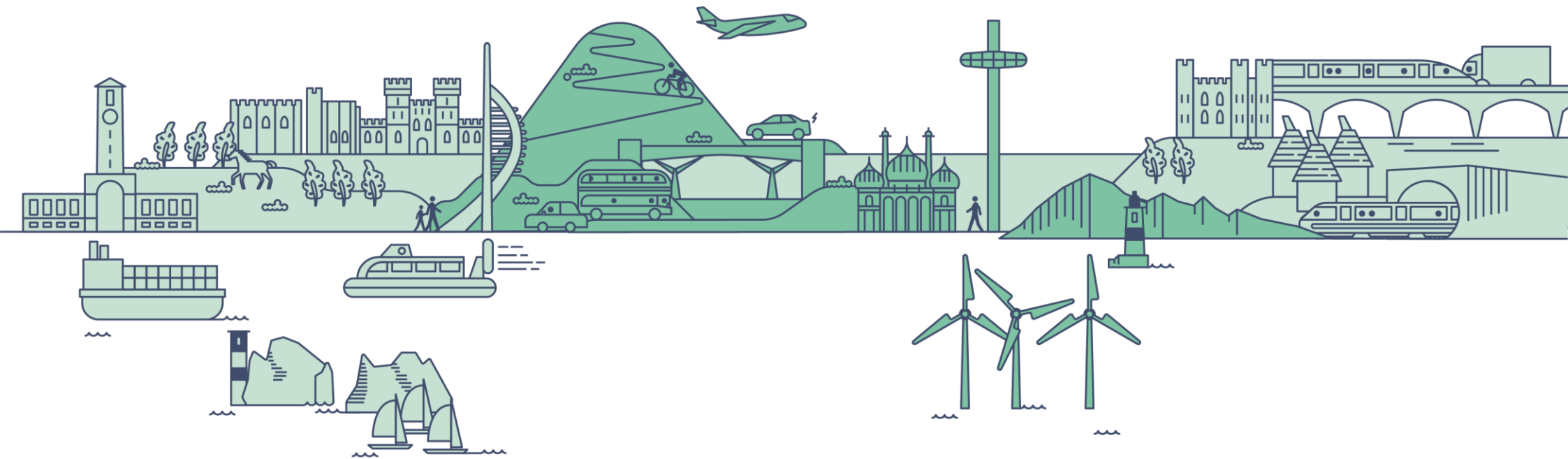


Figure 1.23: Brighton and Hove Public Transport Catchments





Part 1g

Travel To Work Analysis

Travel To Work Analysis

Travel To Work Flows

There are significant Travel To Work flows across the South Central Radial Area, particularly along its north – south axis.

Figures 1.24 – 1.29 show the largest Travel To Work Flows (sources from the 2011 Census) between the Major Economic Hubs in the South East. These include:

- Between Major Economic Hubs excluding South Hampshire and London (**Figure 1.24**);
- Between Major Economic Hubs and Greater London (**Figures 1.25 and 1.26**);
- Within and around the Brighton and Hove and Worthing Built Up Areas (**Figure 1.27**);
- Within and around the Gatwick Diamond area(**Figure 1.28**); and
- Between Burgess Hill and Haywards Heath (**Figure 1.29**).

While these flows focus on trips to and/from work, they illustrate some of the pressures on transport networks during peak hours.

The figures above highlight significant reliance of Travel To Work flows on the M23/A23 and Brighton Main Line corridors. This suggests public transport can support many large flows, although not all are easily accommodated by public transport (e.g. Burgess Hill <> Hassocks).

Public Transport Provision

Public transport provision for the largest Travel To Work flows in the South Central Radial Area is generally good.

Figure 1.30 presents the largest Travel To Work Flows presented in Figures 1.24 – 1.29. The colours of the arrows represent Steer’s assessment of the quality of public transport options serving each flow. This was determined by comparing journey times for car to public transport options. Flows with competitive public transport journey times are shown as having a “good” assessment, and those with much longer public transport journey times are shown as “poor”.

Figure 1.30 shows how influential the Brighton Main Line is for facilitating radial flows between Major Economic Hubs in the South Central Radial Area. In contrast, the weakest areas of provision appear to be for east – west flows and for flows that rely on highways and railways that are not reliant on the M23/A23 and/or Brighton Main Line.

Travel To Work Catchments

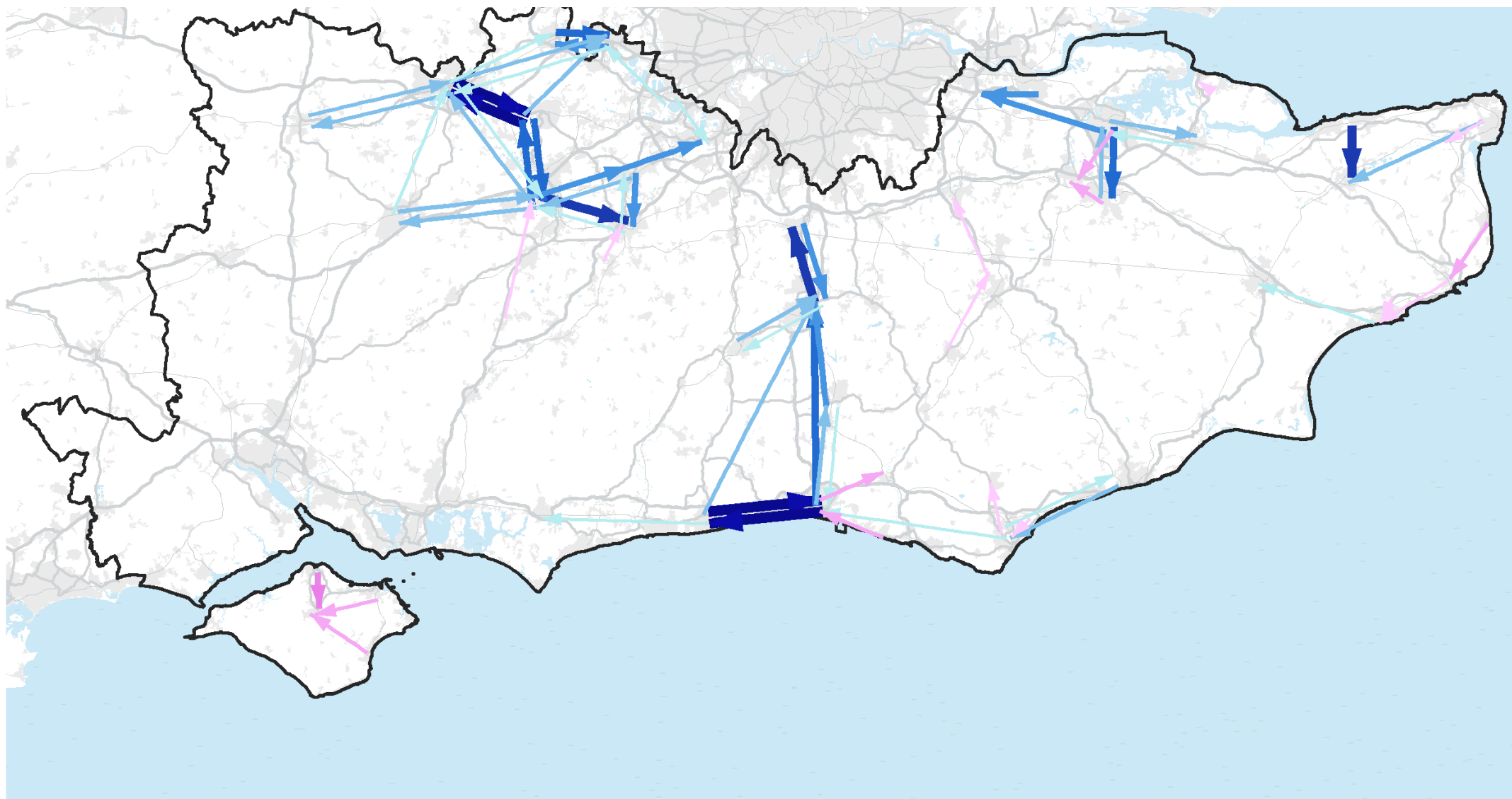
Travel To Work Catchment areas tend to reflect the geography and quality of the transport networks that serve them.

Figures 1.31 – 1.41 show the catchment areas for the South Central Radial Areas Major Economic Hubs. This shows output areas with ten or more journeys to/from the hubs on a typical working day. These include:

- Chichester (**Figure 1.31**);
- Bognor Regis (**Figure 1.32**);
- Worthing (**Figure 1.33**);
- Brighton (**Figure 1.34**);
- Eastbourne (**Figure 1.35**);
- Horsham (**Figure 1.36**);
- Crawley/Gatwick (**Figure 1.37**);
- Burgess Hill/Haywards Heath (**Figure 1.38**);
- Redhill/Reigate (**Figure 1.39**);
- Epsom/Ewell (**Figure 1.40**); and
- Royal Tunbridge Wells/Tonbridge (**Fig.1.41**).

The sizes and shapes of these catchment areas vary and seem to align with the public transport and highways that serve them (e.g. many stretch more north/south than east/west).

Figure 1.24: South East largest Travel To Work flows (Census, 2011) – excluding South Hampshire and flows to/from London



TfSE area Flows of greater than 1,500 journeys between Major Economic Hubs and other built up areas
→ 1,500 - 2,000 → 4,001 - 5,000
→ 2,001 - 3,000 → 5,001 - 6,000
→ 3,001 - 4,000 → Greater than 6,000

Flows of greater than 1,500 journeys between Major Economic Hubs
→ 1,500 - 2,000 → 4,001 - 5,000
→ 2,001 - 3,000 → 5,001 - 6,000
→ 3,001 - 4,000 → Greater than 6,000

South Central Radial Area Study Evidence Base

0 5 10 15 20 25 km
 0 5 10 15 Miles



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Figure 1.25: South East largest Travel To Work flows to London (Census, 2011)

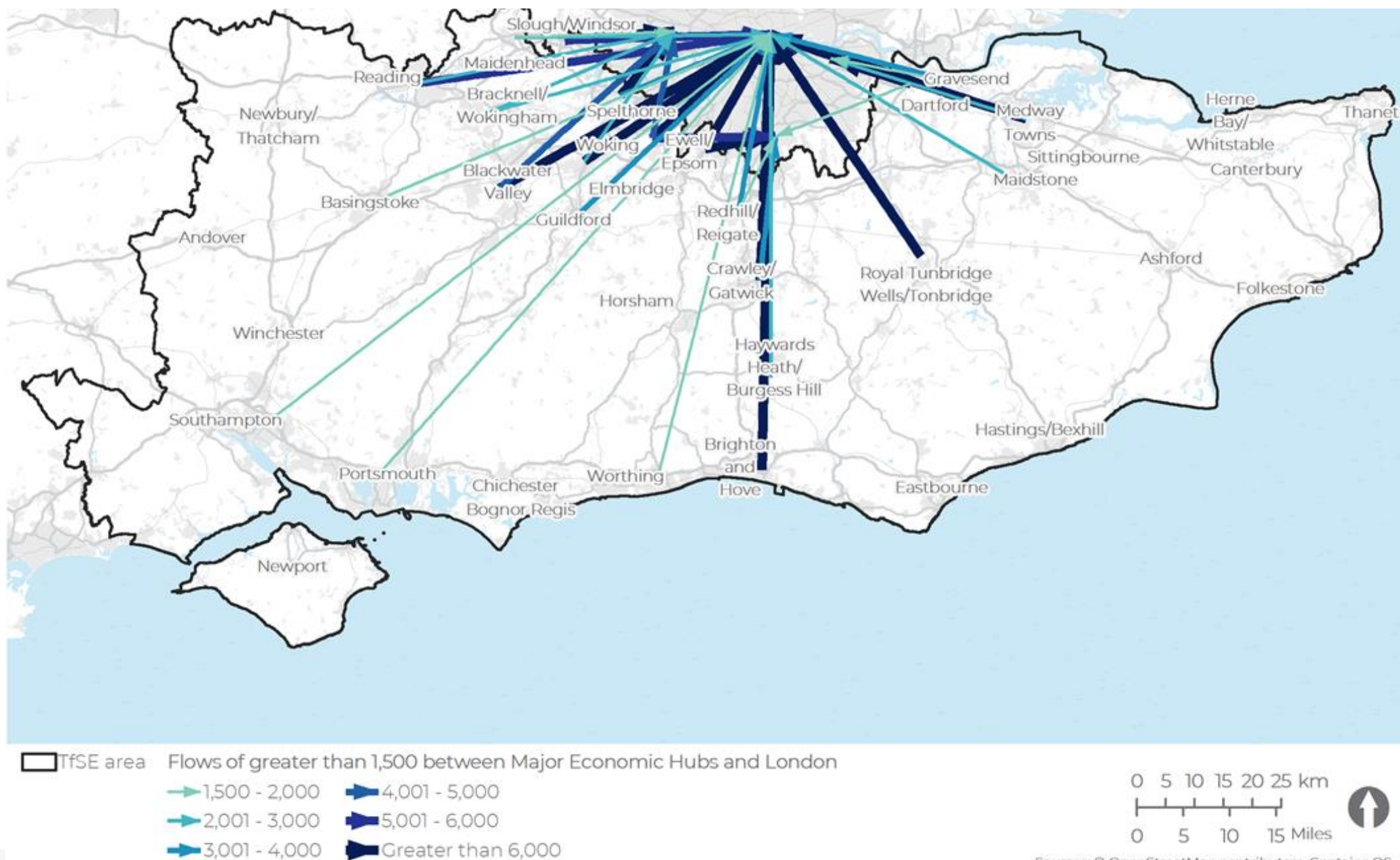
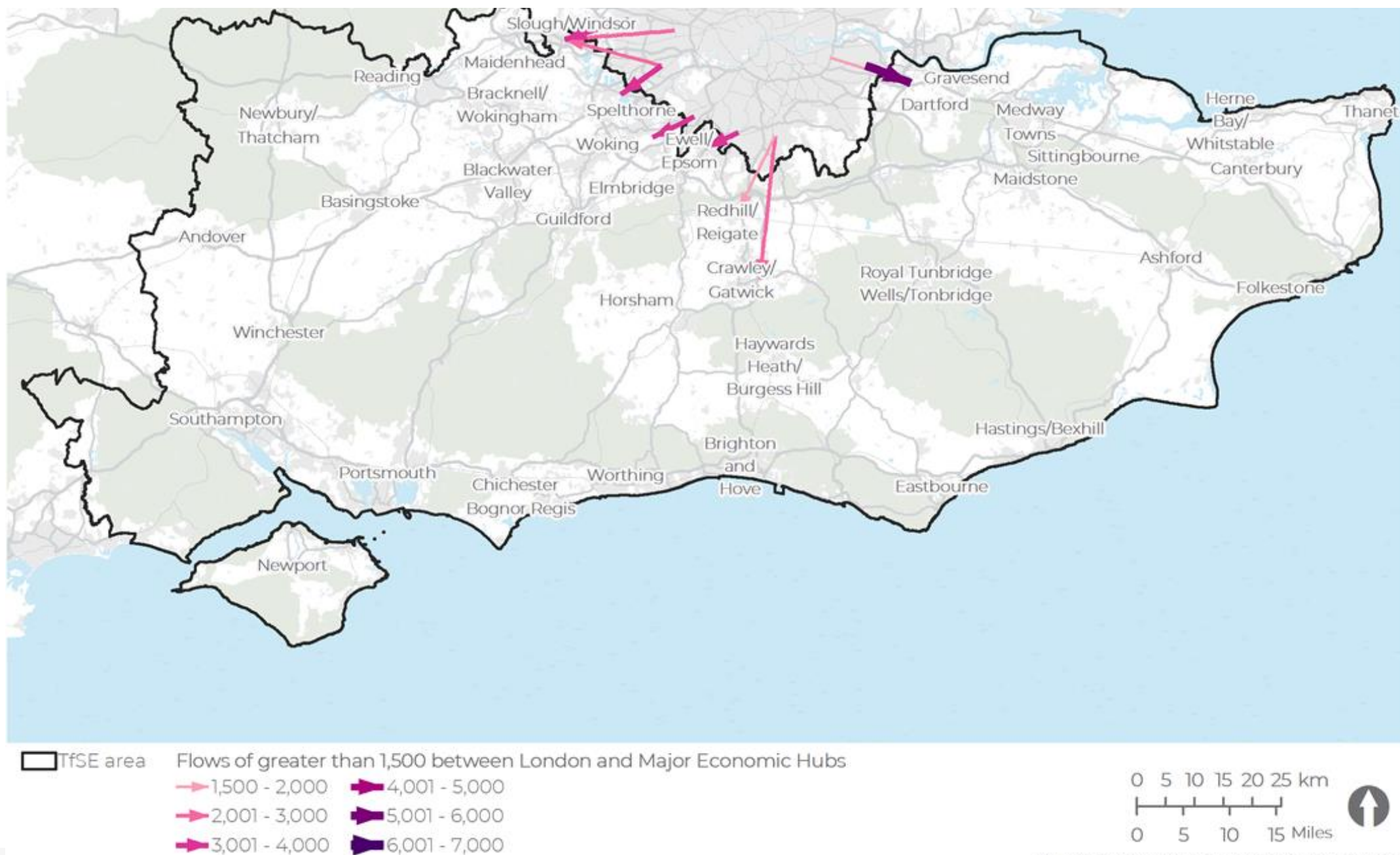
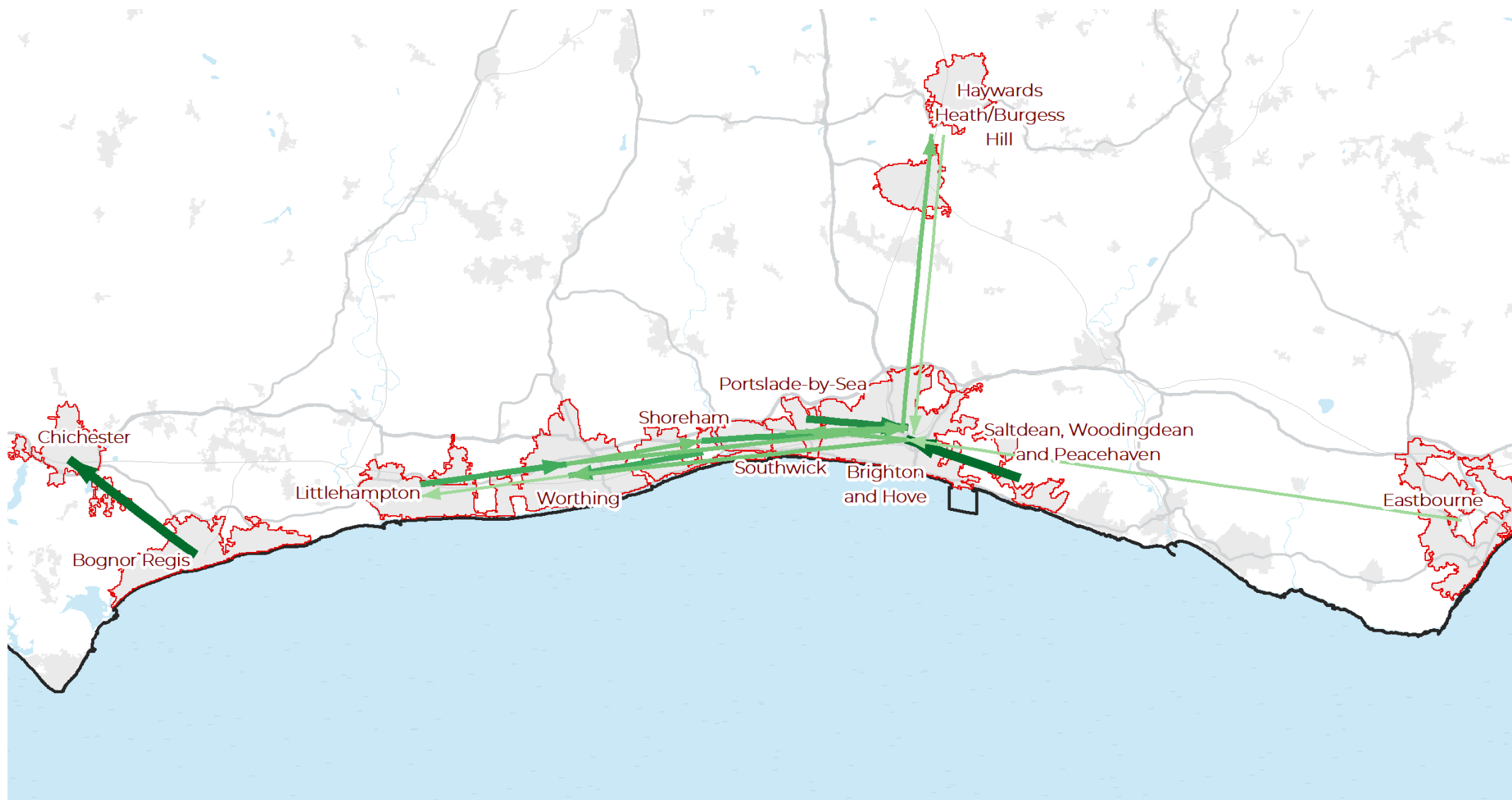



Figure 1.26: South East largest Travel To Work flows from London (Census, 2011)

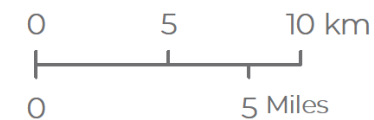
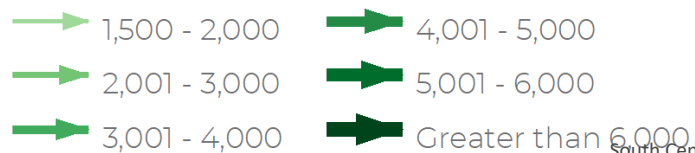


Sources: © OpenStreetMap contributors, Contains OS data © Crown copyright and database right (2019), Natural England

Figure 1.27: Sussex Coast largest Travel To Work flows (Census, 2011)



 TfSE area Flows of greater than 1,500 between Brighton, Worthing and built up areas



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Figure 1.28: Gatwick Diamond largest Travel To Work flows (Census, 2011)

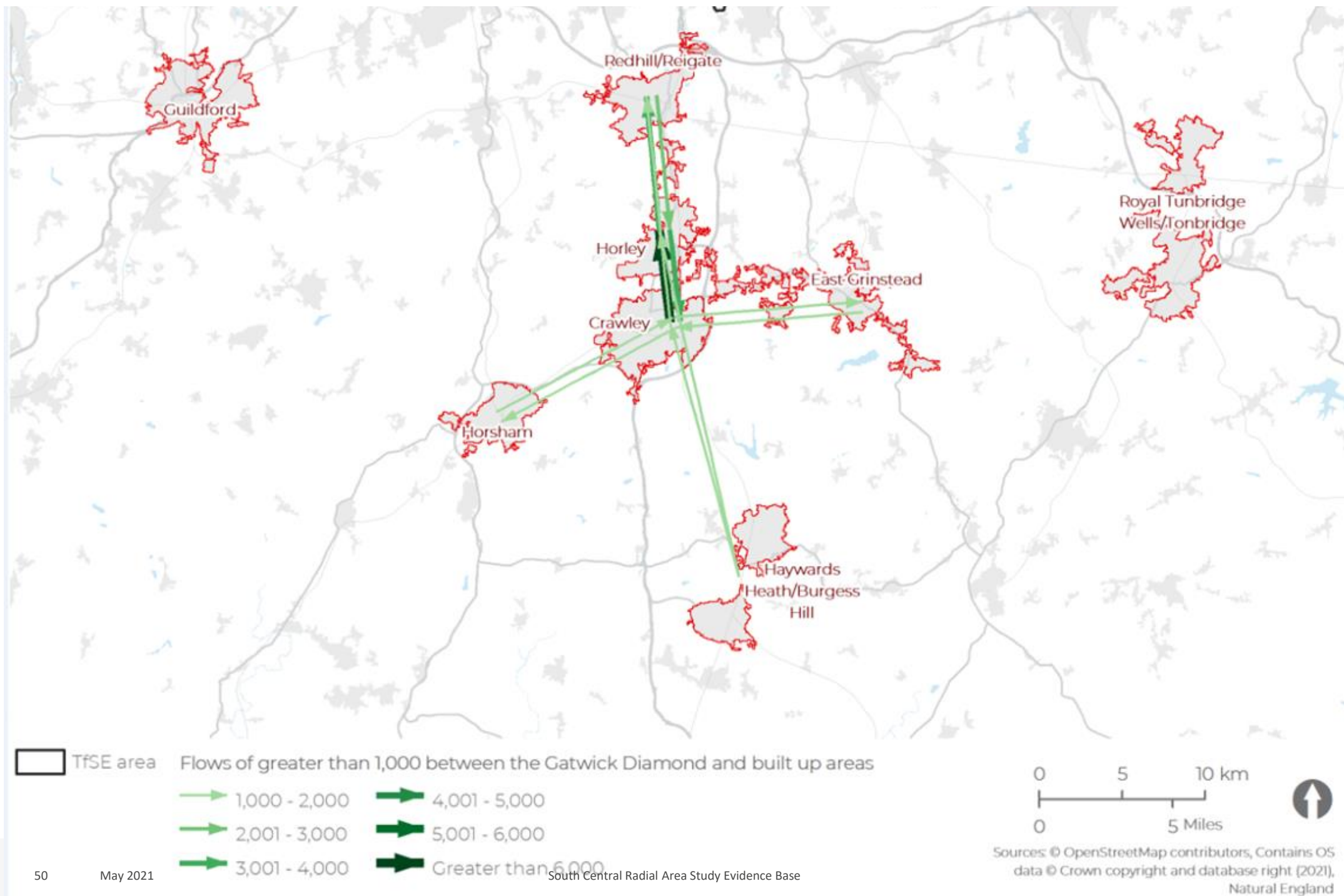
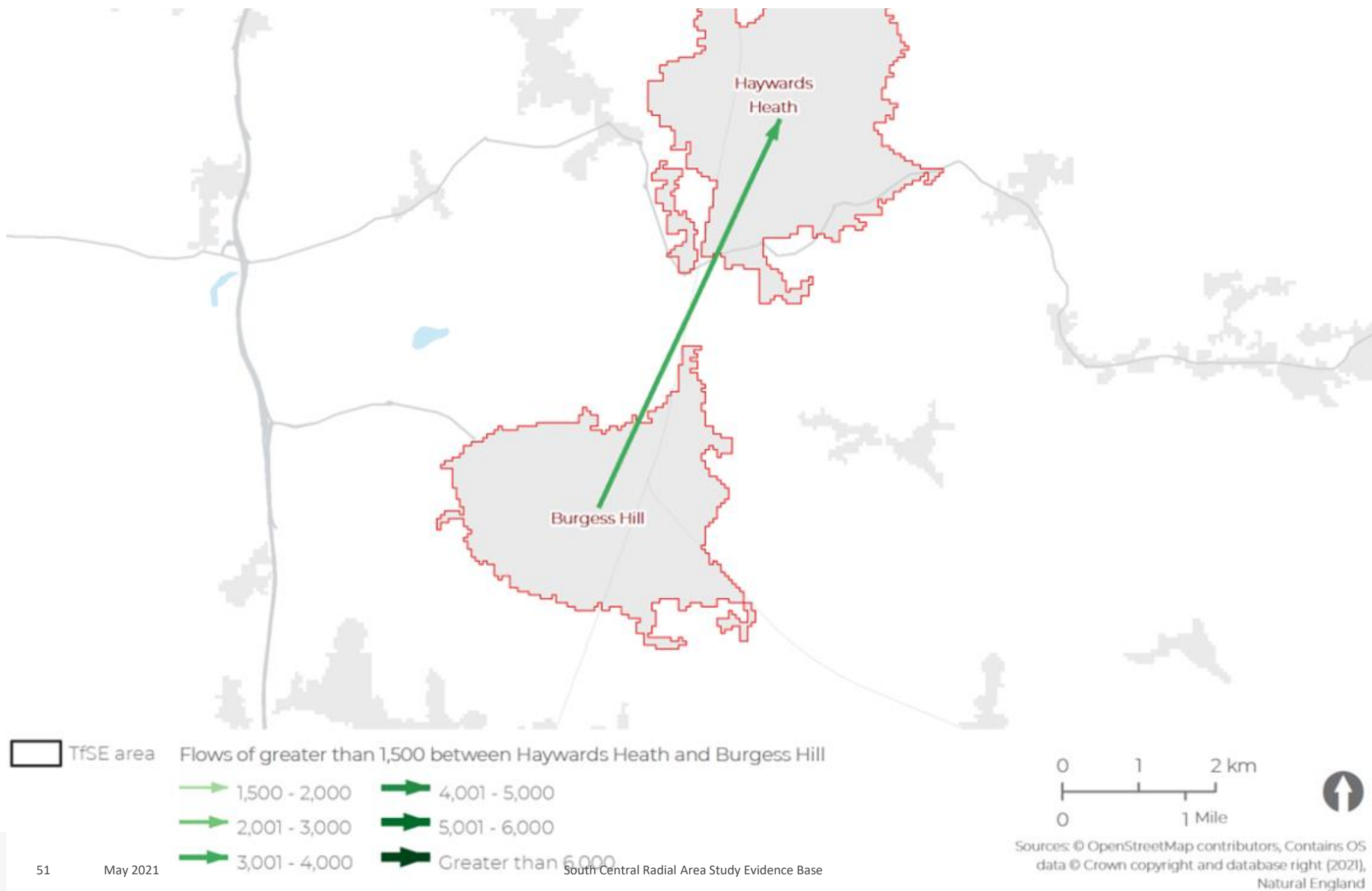
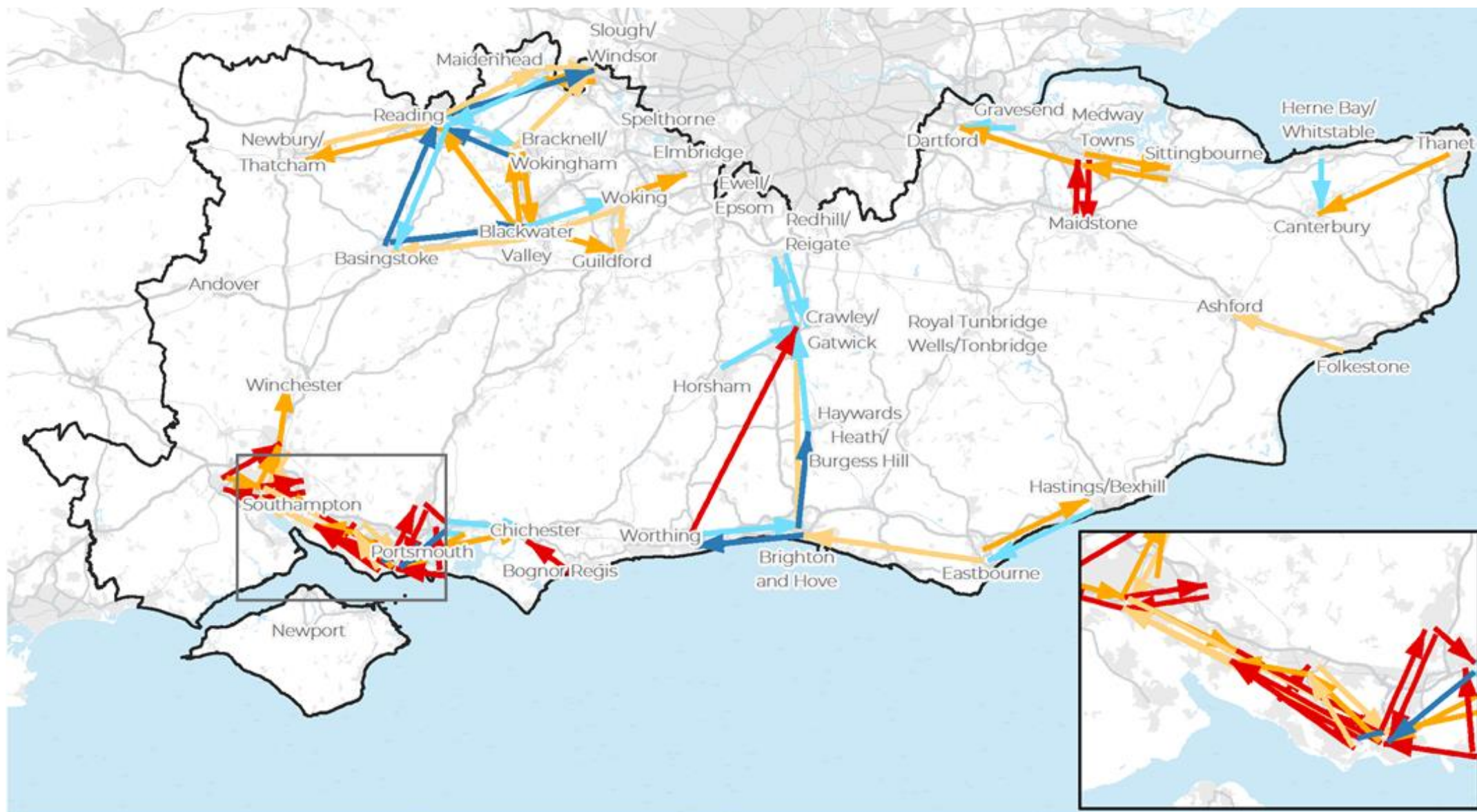


Figure 1.29: Burgess Hill/Haywards Heath Travel To Work flows (Census, 2011)





☐ TfSE area ☐ Weighted assessment

- Good
- Good/Moderate
- Moderate
- Moderate/Poor
- Poor

0 5 10 15 20 25 km

0 5 10 15 Miles

Sources: © OpenStreetMap contributors, Contains OS data © Crown copyright and database right (2019), Natural England

Figure 1.31: Chichester Travel to Work catchment area (Census, 2011)

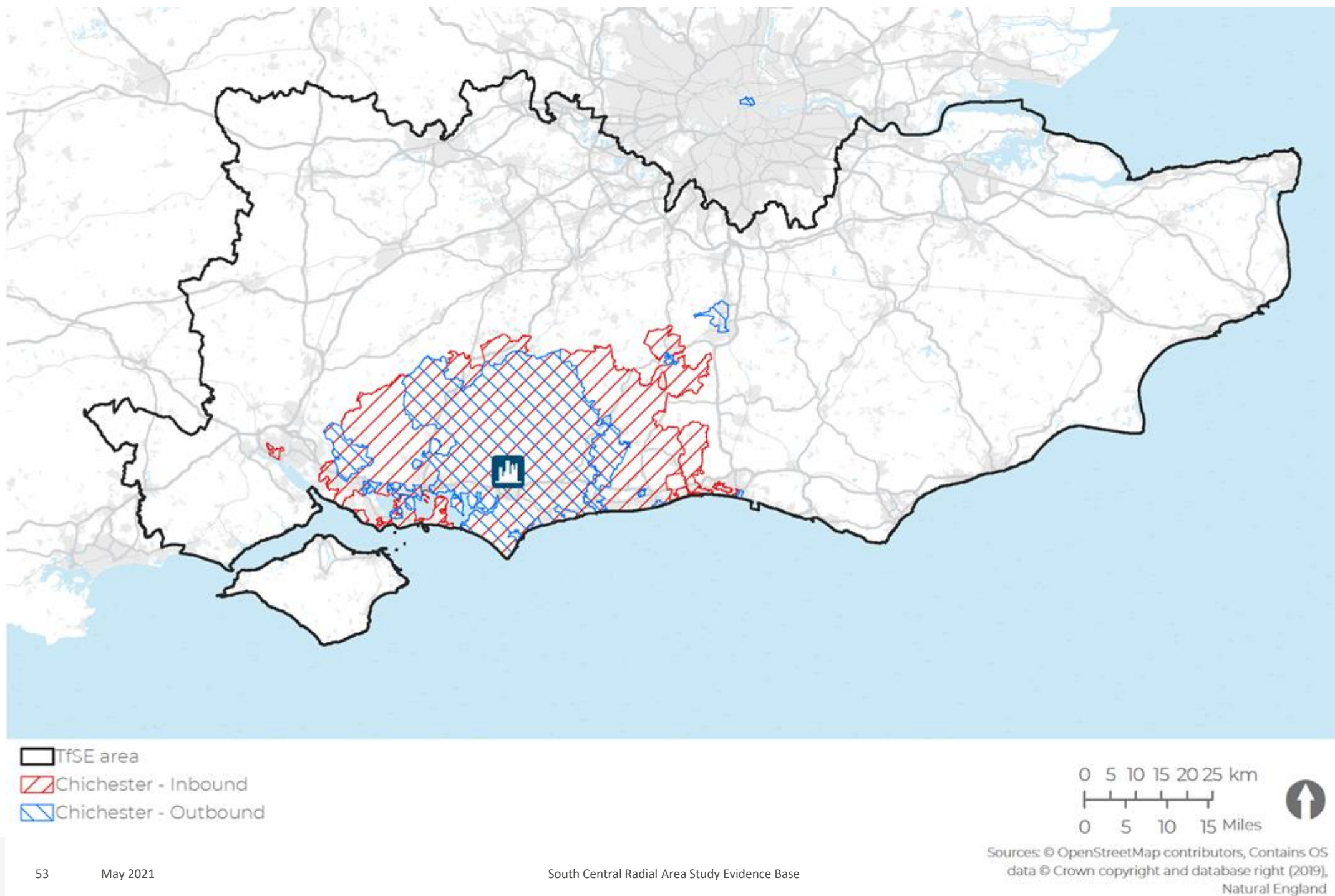


Figure 1.32: Bognor Regis Travel to Work catchment area (Census, 2011)

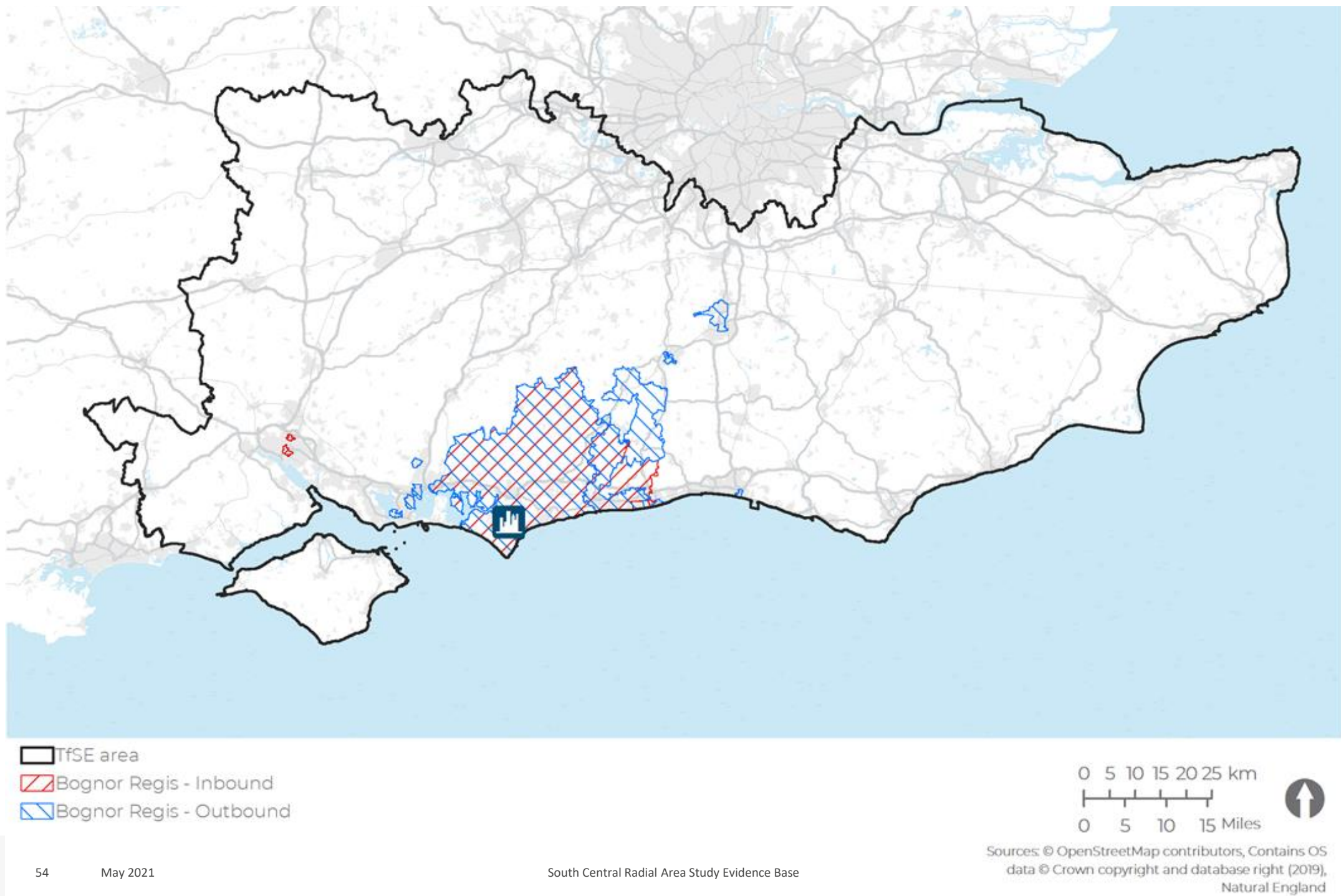


Figure 1.33: Worthing Travel to Work catchment area (Census, 2011)

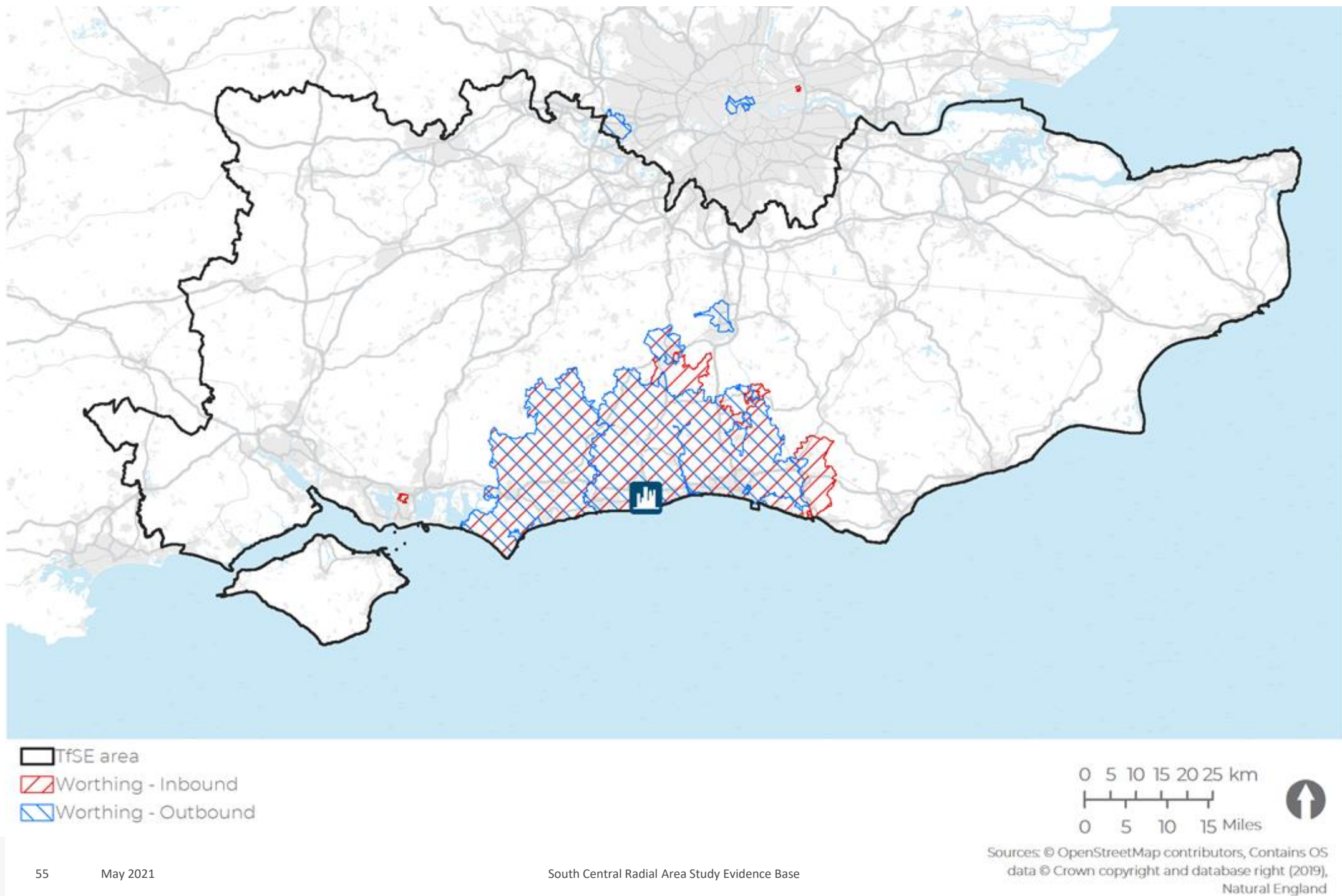


Figure 1.34: Brighton and Hove Travel to Work catchment area (Census, 2011)

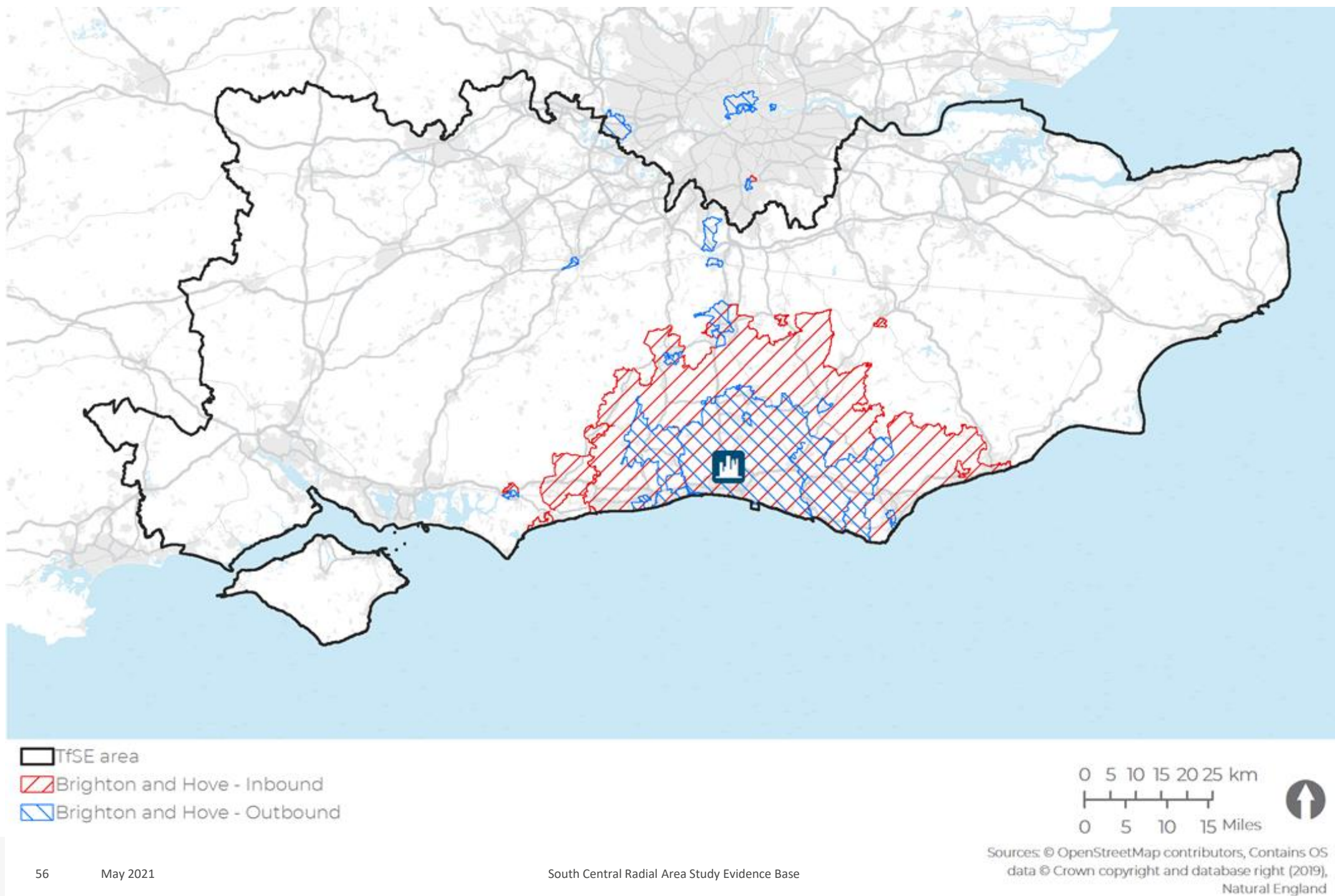


Figure 1.35: Eastbourne Travel to Work catchment area (Census, 2011)

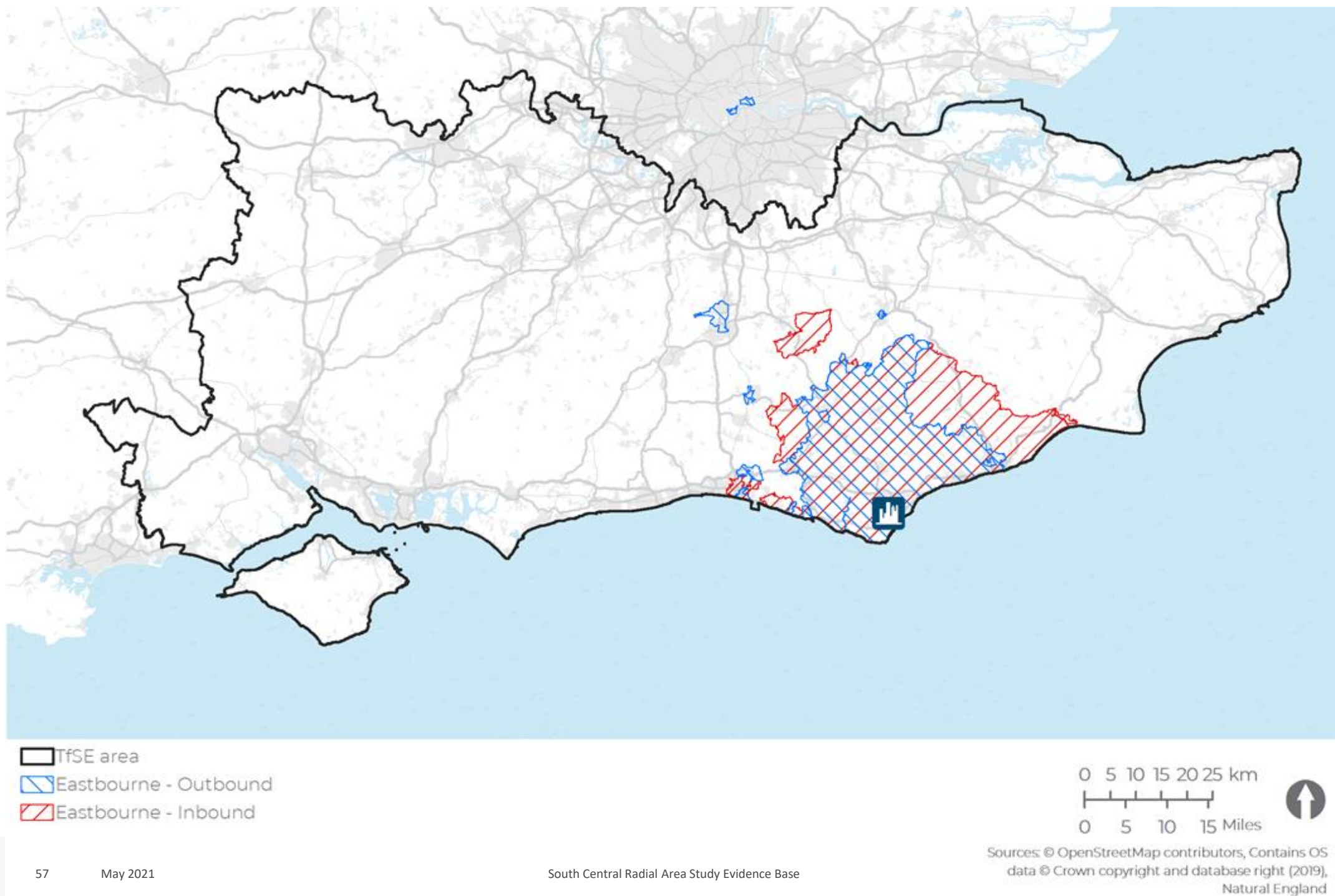


Figure 1.36: Horsham Travel to Work catchment area (Census, 2011)

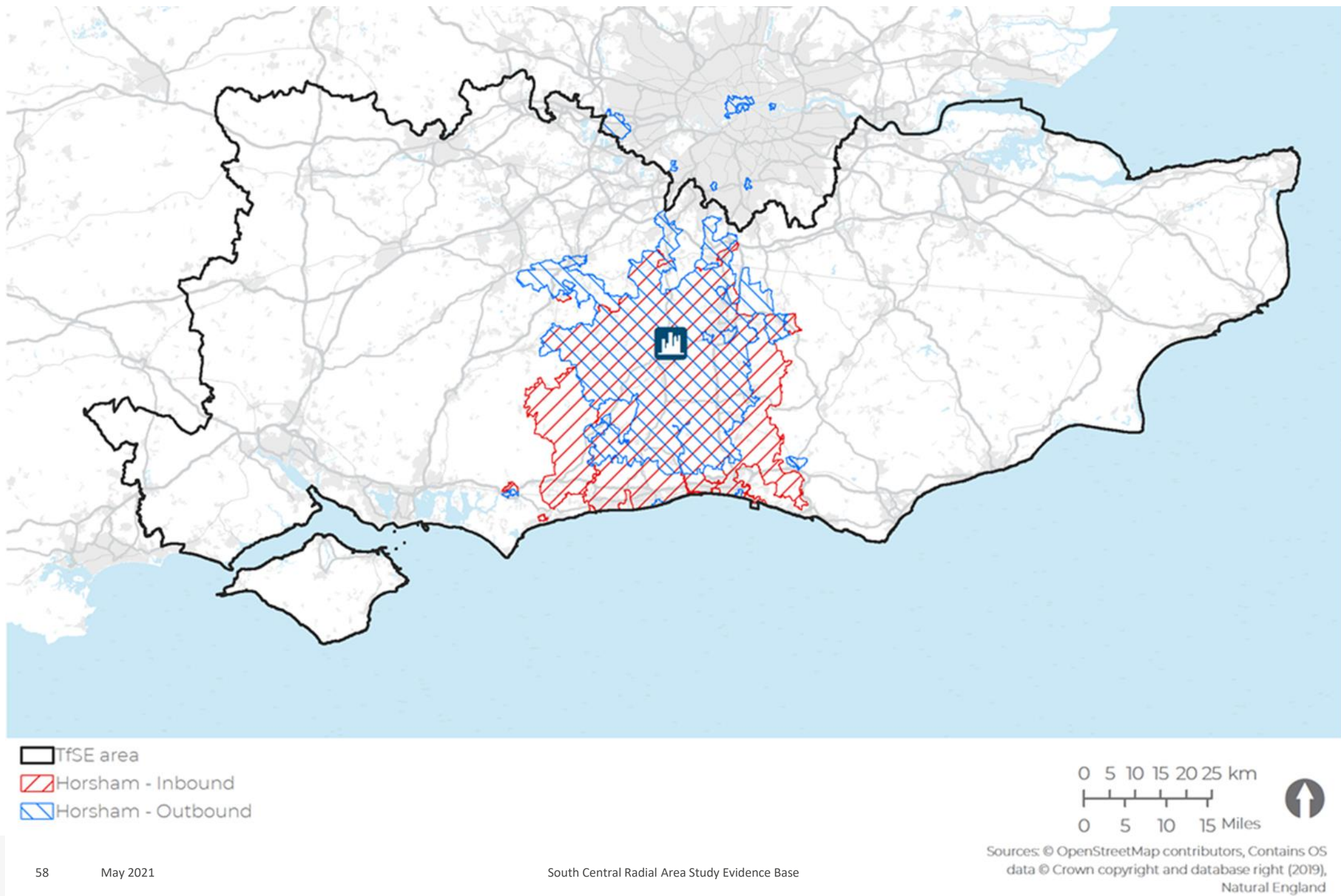


Figure 1.37: Crawley/Gatwick Travel to Work catchment area (Census, 2011)

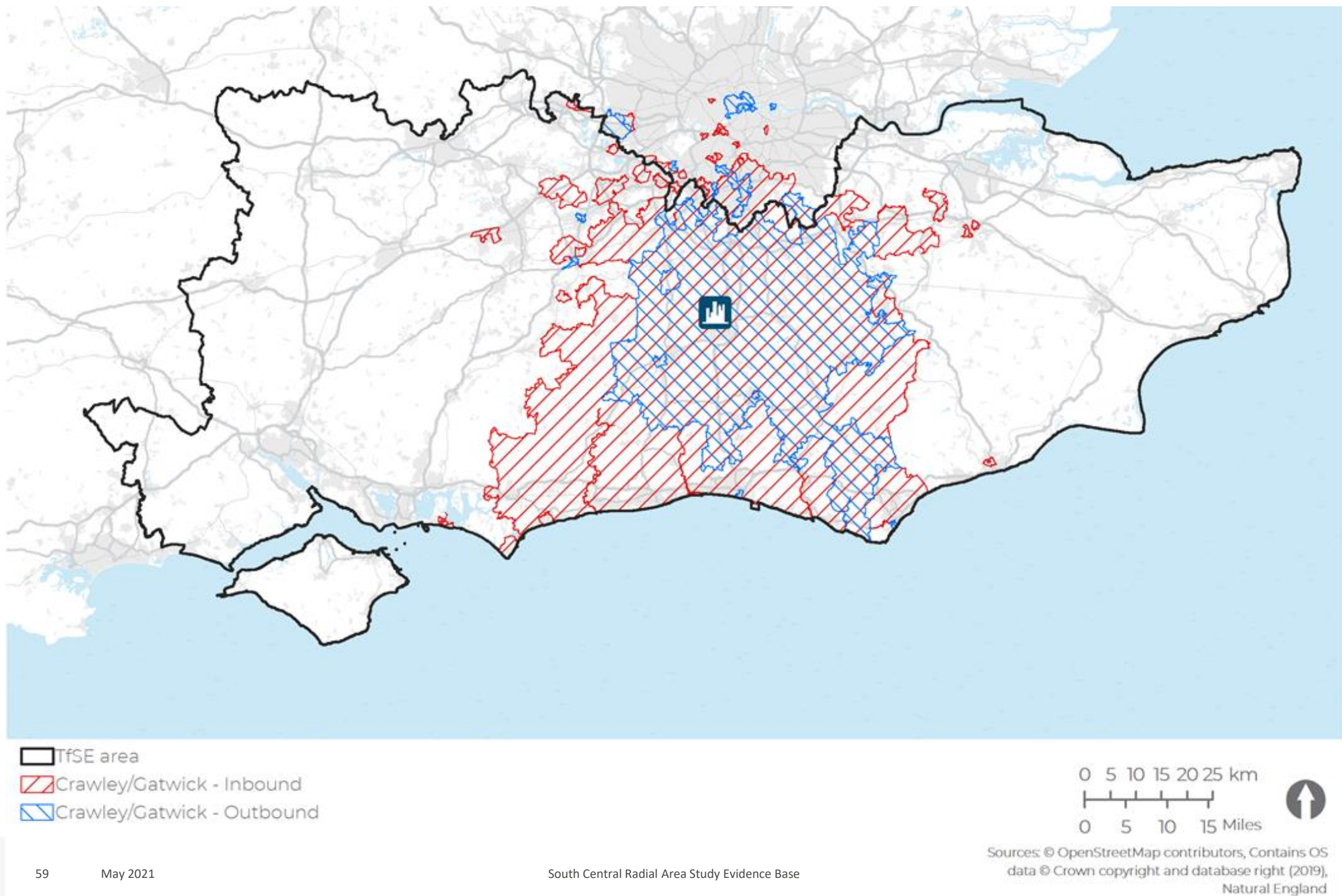


Figure 1.38: Burgess Hill/Haywards Heath Travel to Work catchment area (Census, 2011)

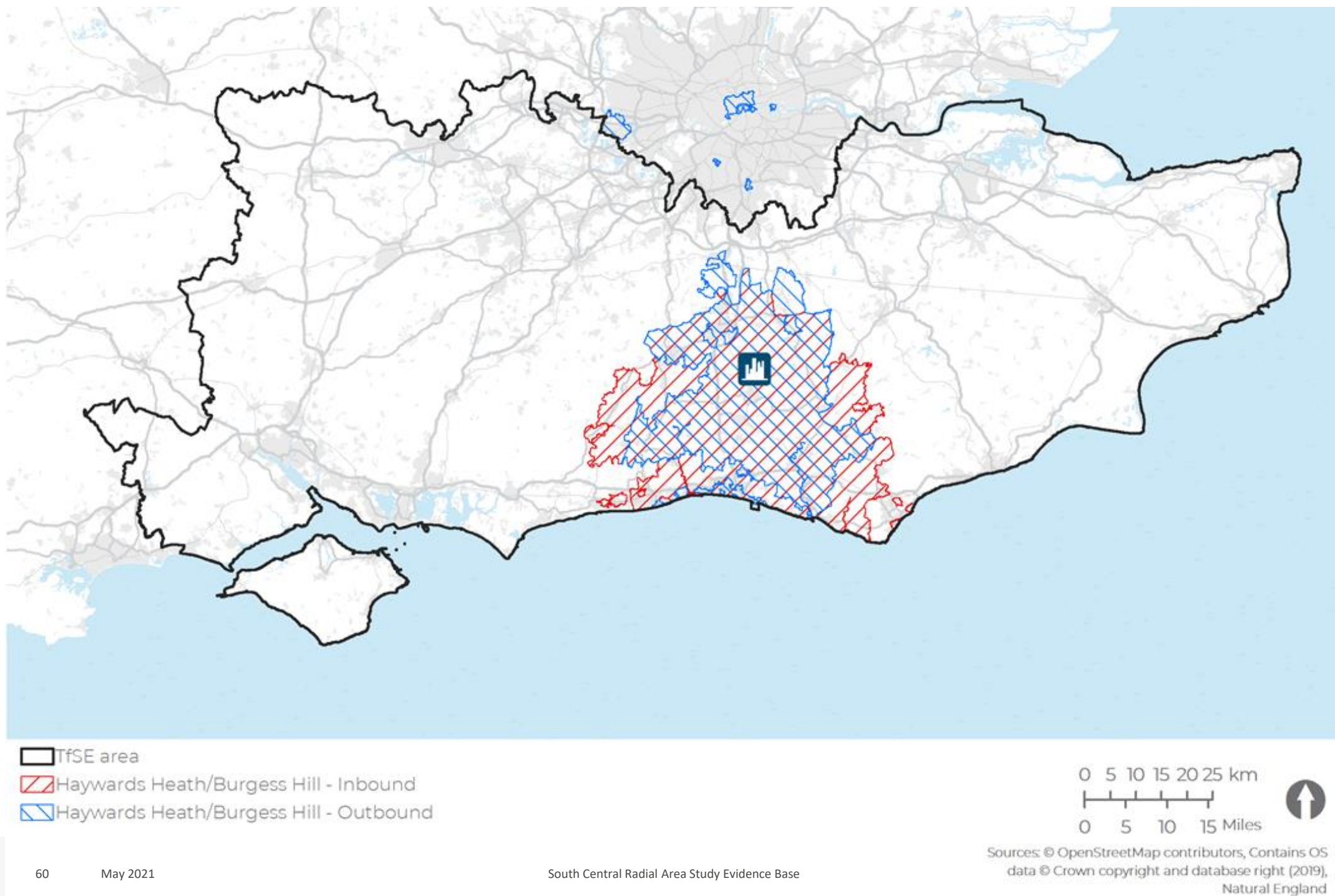
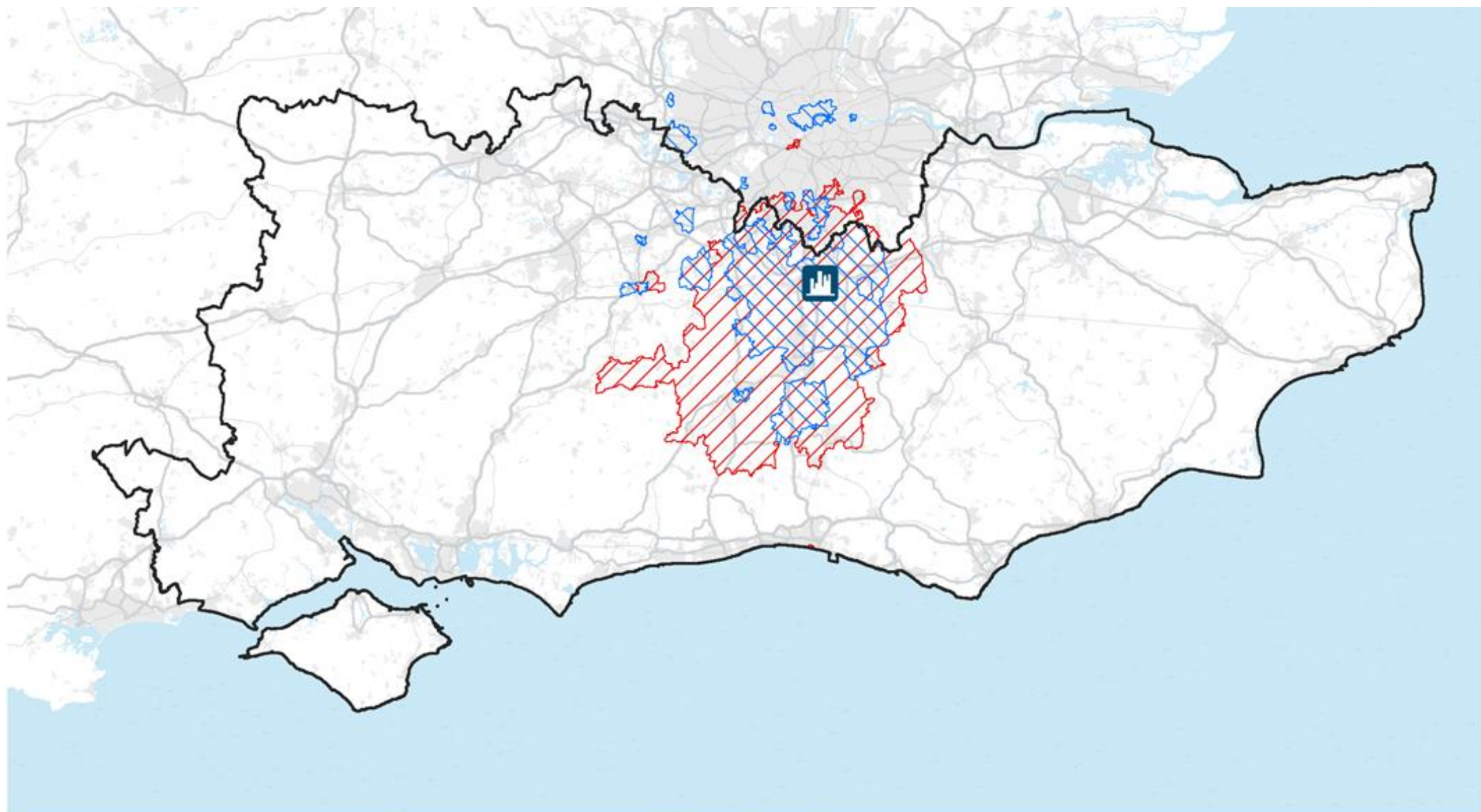


Figure 1.39: Redhill/Reigate Travel to Work catchment area (Census, 2011)



- TfSE area
- Redhill/Reigate - Outbound
- Redhill/Reigate - Inbound

0 5 10 15 20 25 km
0 5 10 15 Miles



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Figure 1.40: Epsom/Ewell Travel to Work catchment area (Census, 2011)

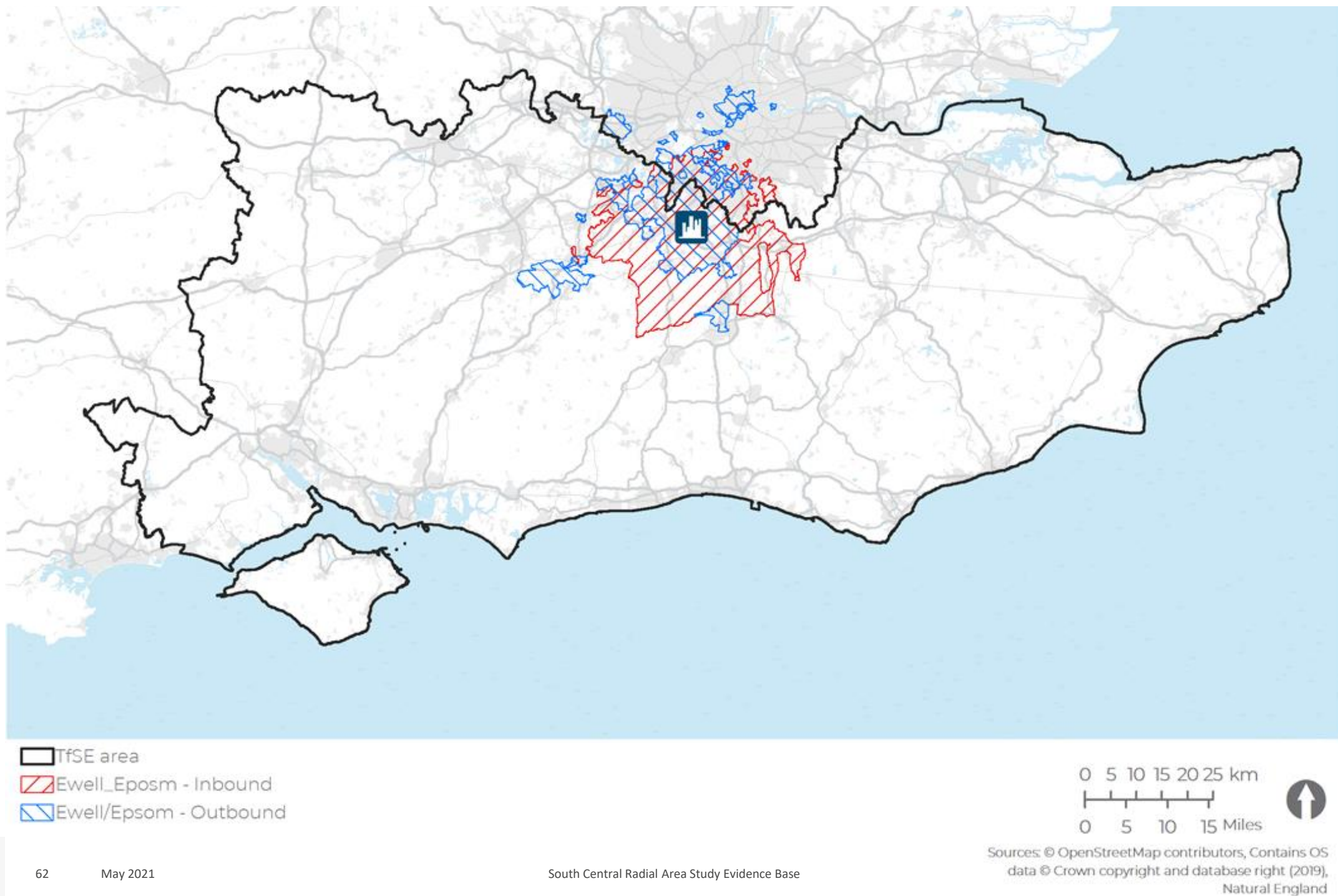
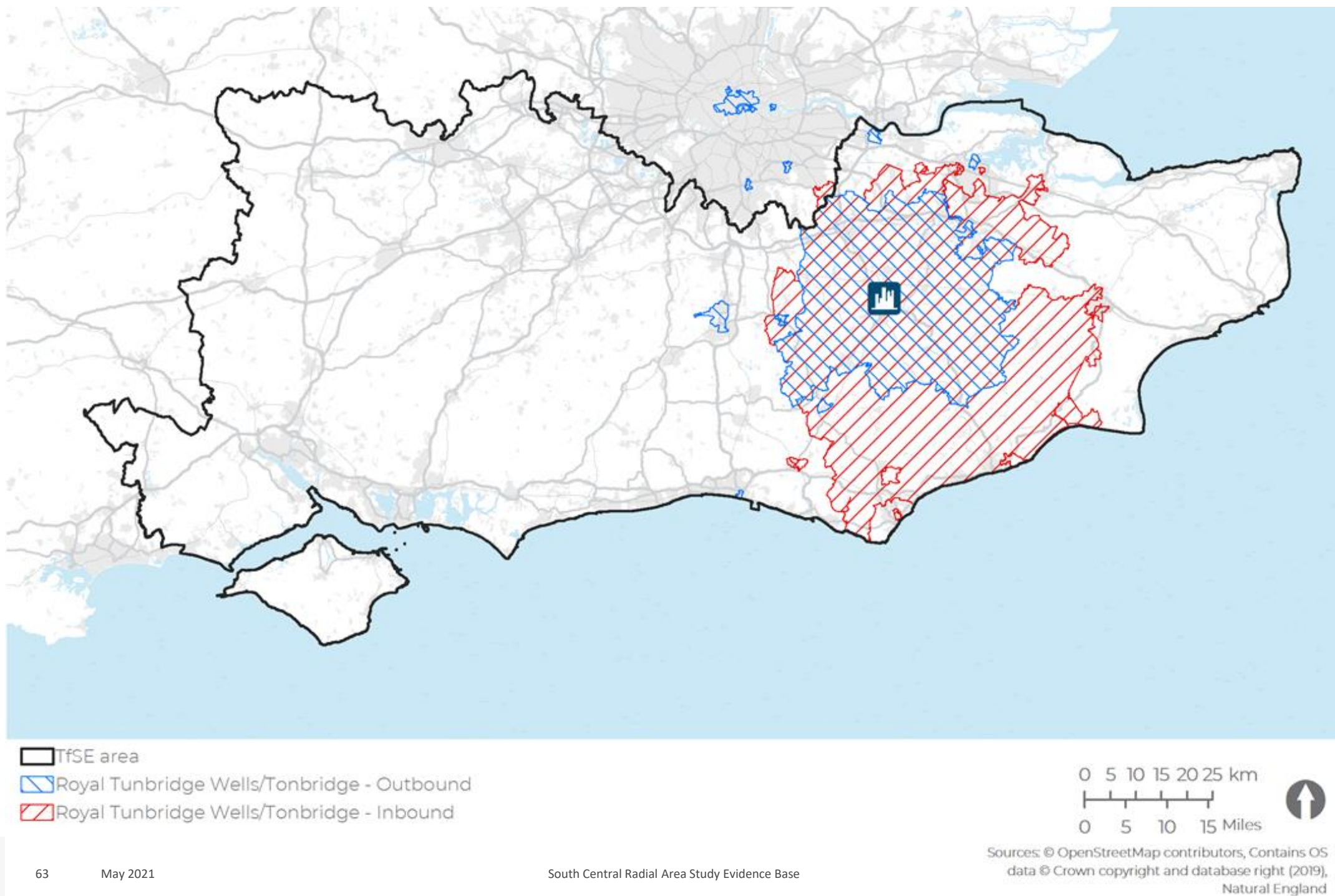


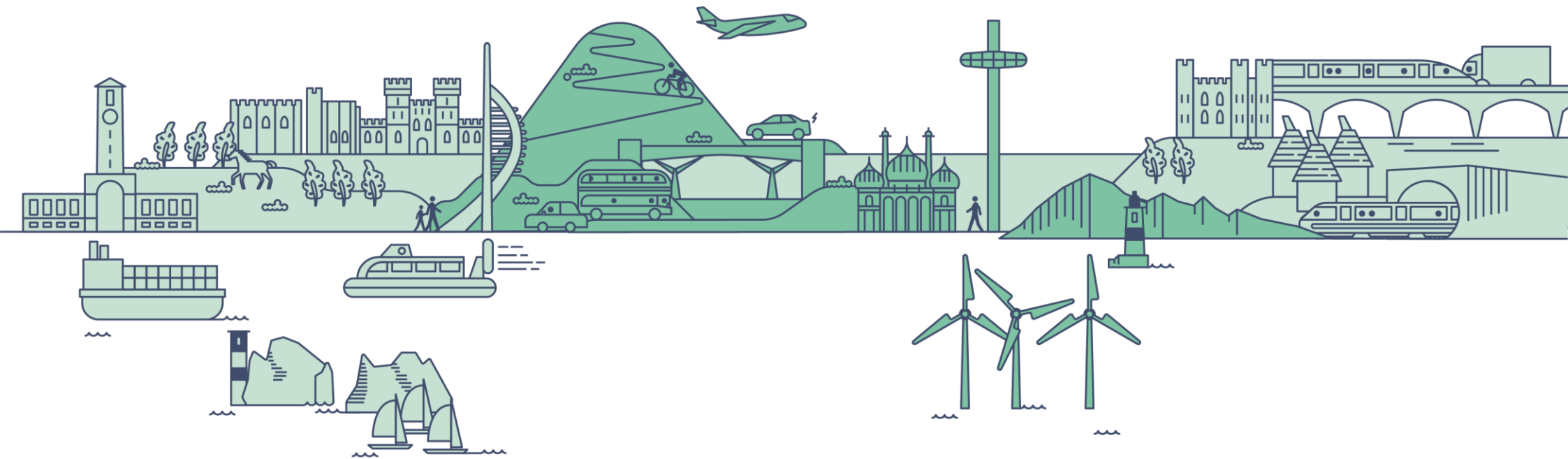
Figure 1.41: Royal Tunbridge Wells/Tonbridge Travel to Work catchment area (Census, 2011)





Part 2

Future Context



Part 2a

Demographic Projections

Demographic Projections

Housing

The South Central Radial Area is expected to accommodate significant housing growth in the next local plan period (up to 2025).

Figures 2.1 and 2.2 show the location of the largest housing growth sites in the South Central Radial Area. This is based on Local Plan estimates in 2019, which in many instances is dependent on transport and other infrastructure being delivered.

This map shows that future housing growth is expected to be concentrated around:

- The West Sussex Coastal areas between Chichester and Brighton;
- In the Burgess Hill/Hassocks area; and
- Between Crawley and Horsham.

Much of this growth will occur in peri-urban settings, so it will be critical that developments are supported with active travel and public transport connections. Doing so will ensure that individuals can travel sustainably to their places of work and residence without relying on private transport.

ONS future population projections somewhat align with projected housing growth. Areas of high population growth between now and 2040 include Horsham (15%), Arun (14%) and Chichester (11%).

Employment

Employment growth is expected to be more concentrated in a few areas, particularly around Brighton and the South Coast and towards the northern end of the area.

Figure 2.3 shows the location of the largest employment growth sites in the South Central Radial Area. The highest employment growth is expected to be clustered around Brighton and Hove, with a subsequent cluster in Eastbourne. Other areas of high job growth are the Gatwick Diamond and the Royal Tunbridge Wells area.

Along the South Coast, employment growth is expected to be focussed in City Centres. This is because many of the higher growth industrial sectors (e.g. financial services) have a preference for city locations. Most employment growth in the Northern end of the corridor will occur on the urban periphery. This is partly driven by the availability of land in these places, as well as the nature of specialist industries (e.g. logistics and tourism).

It will therefore be important to provide good public and active transport connections from these peripheral locations to city centres and transport hubs. This will ensure these cities enjoy economic prosperity and an increased quality of life for all residents.

Risk of imbalance?

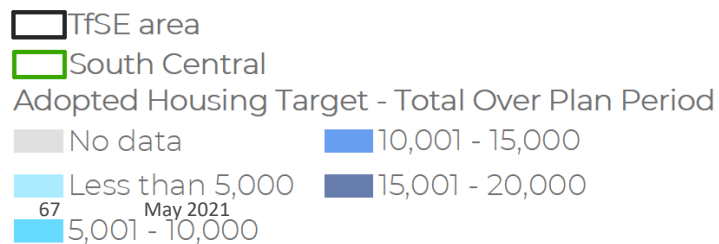
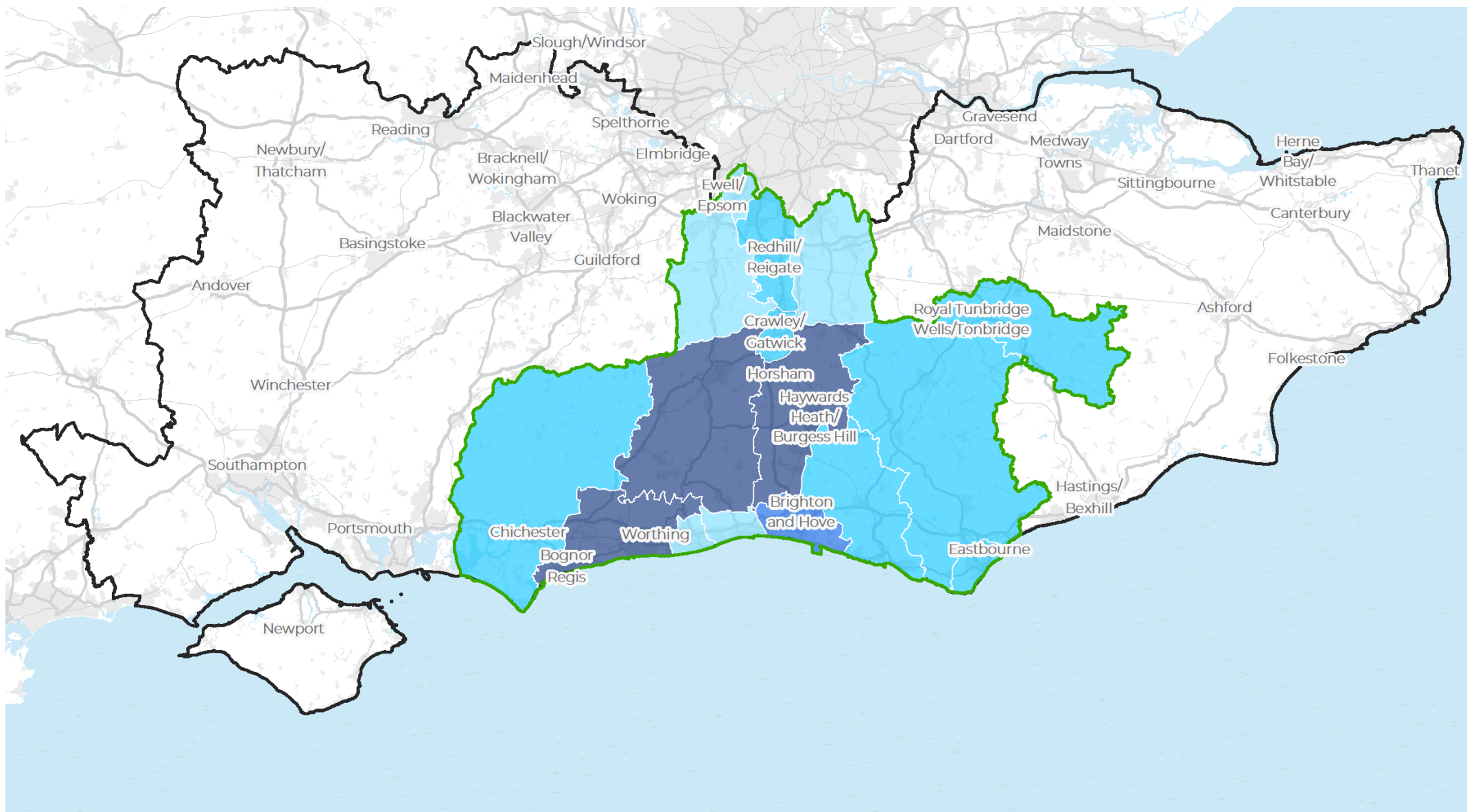
There is a risk that any significant imbalance in housing and employment growth may cause unsustainable outcomes.

The maps show that housing development is expected to take place at several locations in the South Central Radial Area, while future employment opportunities are concentrated in a few locations. There is a risk that the spatial imbalance in housing and employment may generate more travel demand, particularly by the car as many of these new development sites are not served by the existing public transport network.

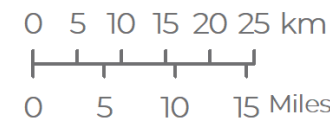
It is recognised that there is an acute need for housing in the South Central Radial Area and that, given the environmental and physical constraints of the corridor, some areas will be better placed to absorb housing than others. To promote more sustainable outcomes, it is recommended that:

- Development is located near to urban centres and transport hubs;
- New development includes mixed use areas to provide local shops and services and is developed to a suitable density/volume; &
- Developments are served by sustainable transport options (from the outset).

Figure 2.1: Planned Homes for the South Central Radial Area (Districts and Boroughs)

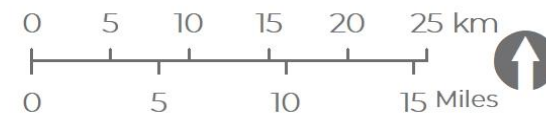
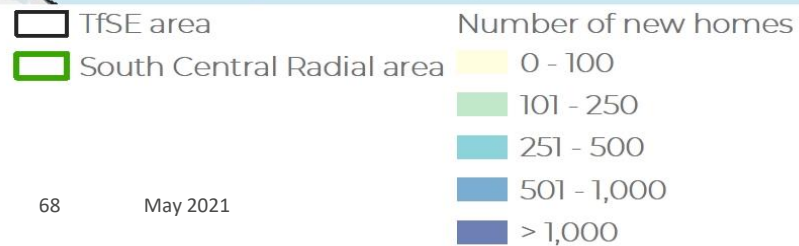
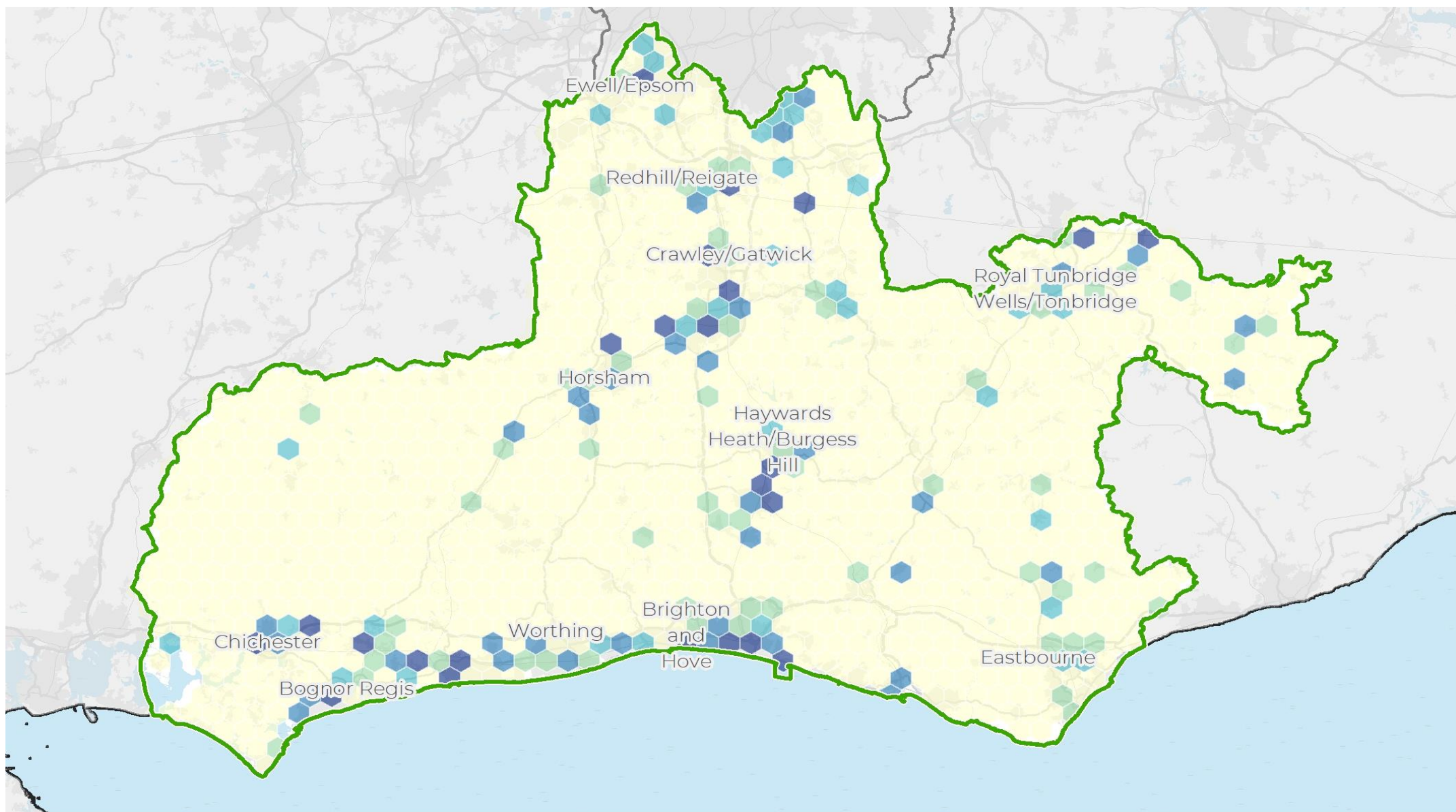


This data is sourced from MHCLG's local plans prototype tool : <https://local-plans-prototype.herokuapp.com/>. Local plan housing requirement data reflects MHCLG understanding of adopted plans as at end January 2021. The data is experimental, updated monthly, and subject to limited validation. It therefore shouldn't be relied upon as a reliable 'real-time' representation of local plan progress or content.



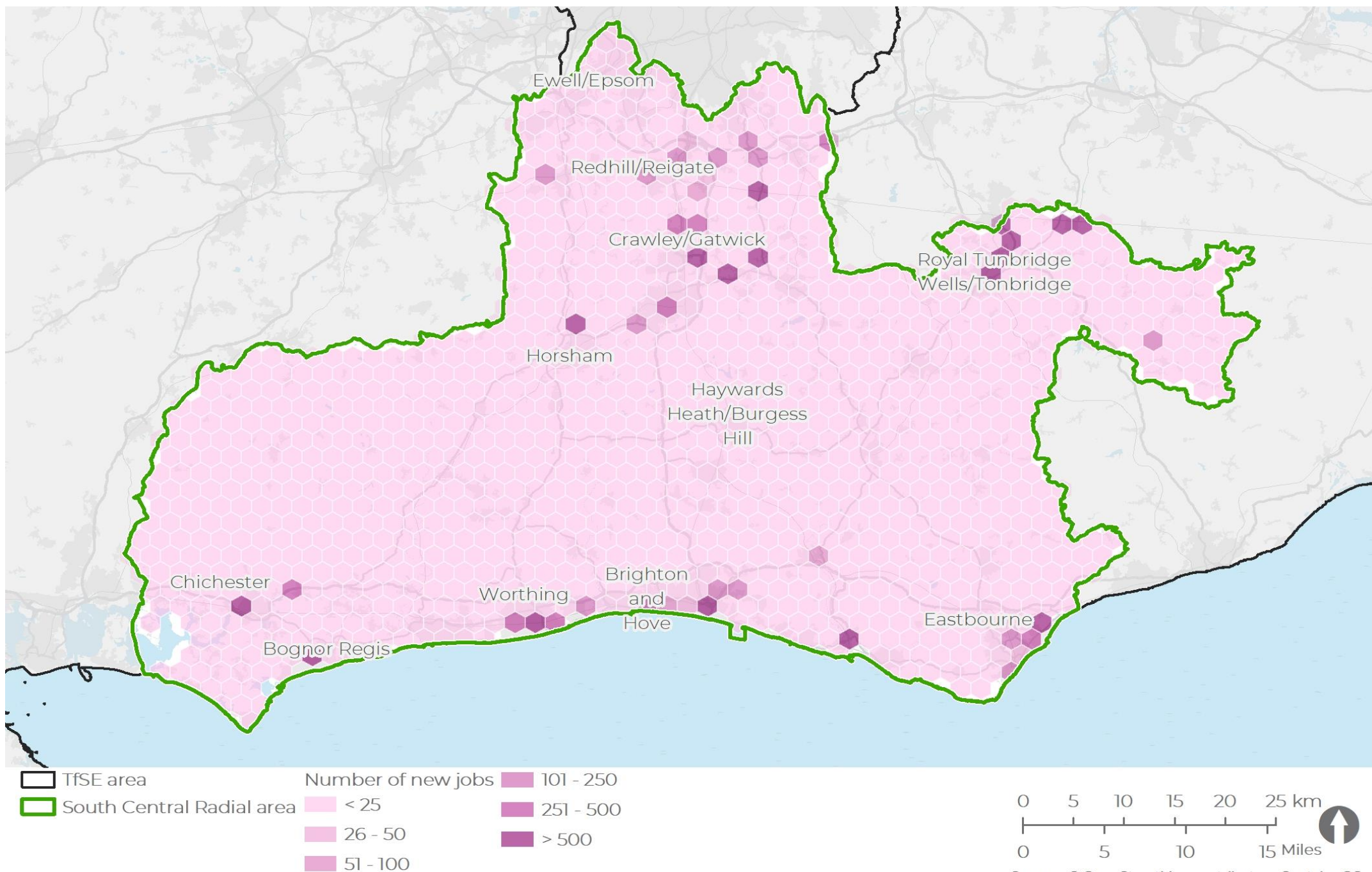
Sources: © OpenStreetMap contributors, Contains OS data © Crown copyright and database right (2021), Natural England

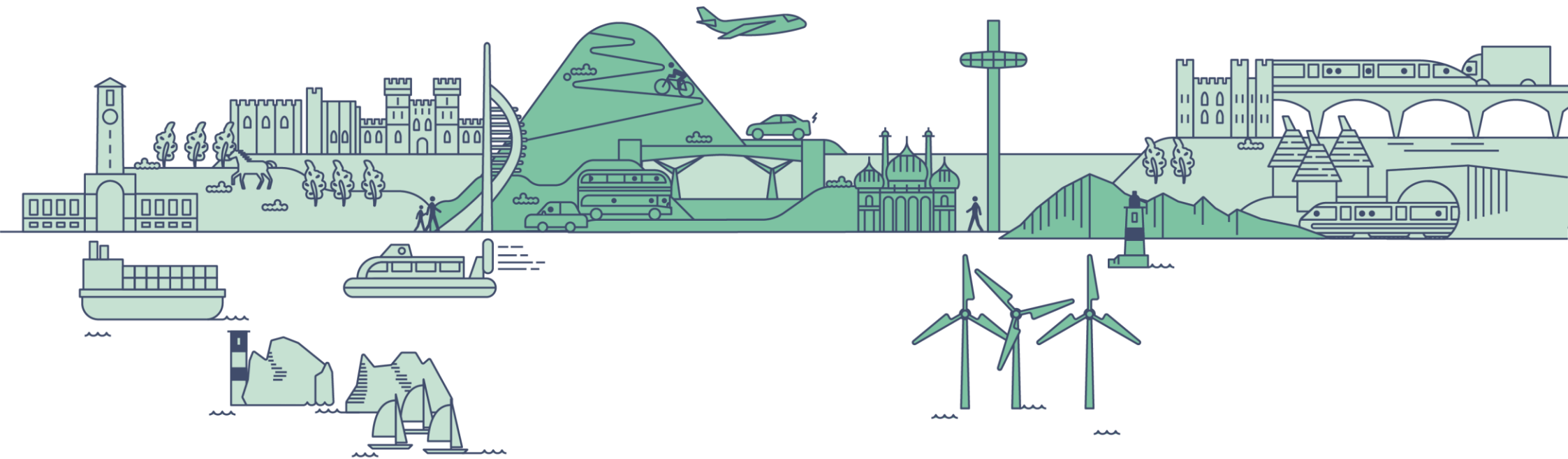
Figure 2.2: Planned Homes for the South Central Radial Area (Detailed)



Sources: © OpenStreetMap contributors, Contains OS data © Crown copyright and database right (2019), Natural England. Data provided by local authorities.

Figure 2.3: New Jobs in the South Central Radial Area





Part 2b

Scenario Forecasts

Scenario Forecasts

TfSE Transport Strategy

To support the development of a Transport Strategy for the South East, in 2018/19 TfSE developed future scenarios for the area.

The scenarios were designed to help TfSE understand how different routes for the development of the South East's economy and population might impact transport outcomes from 2020 to 2050. They were developed by combining "axes of uncertainty", which describe the plausible outcomes of uncertain trends. These trends included the rate of adoption of emerging technology, changes in attitudes towards the environment, and the development of target industrial sectors in the economy. Each scenario was modelled using a land use and transport model called the South East Economy and Land Use Model (SEELUM). The outcomes of modelling each scenario were compared to a Central Case ("Business As Usual"), which was developed by modelling the impacts of the Department for Transport's National Trip End Model on the South East's economy and transport networks. Further adjustments have been made to reflect the impact of COVID-19 on the South East. The modelling results were used to develop a **Preferred Scenario** for the future of the South East: "A Sustainable Route to Growth".

Socioeconomic Outcomes

The Preferred Scenario delivers more sustainable travel outcomes than the Business As Usual (BAU) scenario.

TFSE's Preferred Scenario envisages a focus on improved integrated transport and land use planning to promote more sustainable travel outcomes (e.g. fewer trips overall, and fewer trips by car).

Figure 2.4 shows projections for transport and socioeconomic indicators for a BAU scenario (modelled on current trends). **Figure 2.5** compares the modelled outcomes for the Preferred Scenario compared to the BAU scenario. These results show that the Preferred Scenario deliver:

- Higher population, employment, and GVA in the South Central Radial Area;
- More trips overall, but fewer trips by highways;
- Significantly more trips between the South Central Radial Area and London (in both directions), primarily using public transport;
- Significantly more trips by rail and bus overall; and
- Marginally more trips by active modes.

Transport Demand

The Preferred Scenario anticipates a fall in highway demand compared to the BAU scenario, which predicts growth instead.

In contrast, this scenario calls for a major change in public transport provision, including for the railway network. It also includes the widespread adoption of demand management policies, including road user charging.

Figure 2.6 shows the expected impact of the Preferred Scenario on highway demand. It generally points to less demand than the Business As Usual scenario, which suggests only targeted highways improvements will be required where there are particular local issues and/or growth hotspots, such as in Brighton or between Gatwick and Crawley.

Figure 2.7 shows the expected impact of significant increase in rail demand on the rail network. It suggests that additional capacity will be required on all corridors.

The model does not provide map outputs for bus or local transit, but the overall increase in forecast demand for bus suggests there will be a need for local interventions to support this growth, which could include mass transit systems such as Bus Rapid Transit.

Figure 2.4: Business As Usual Growth Projections

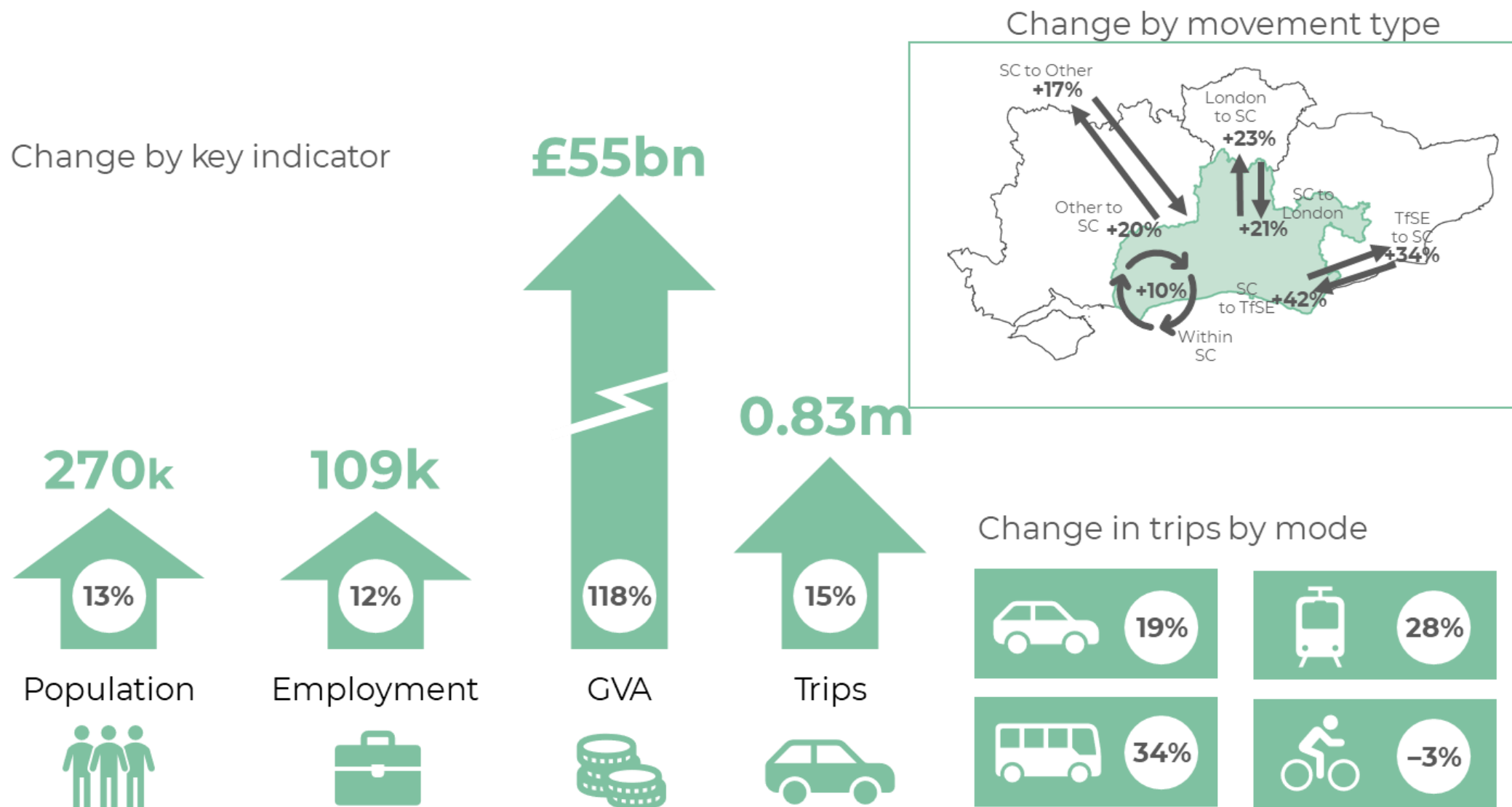
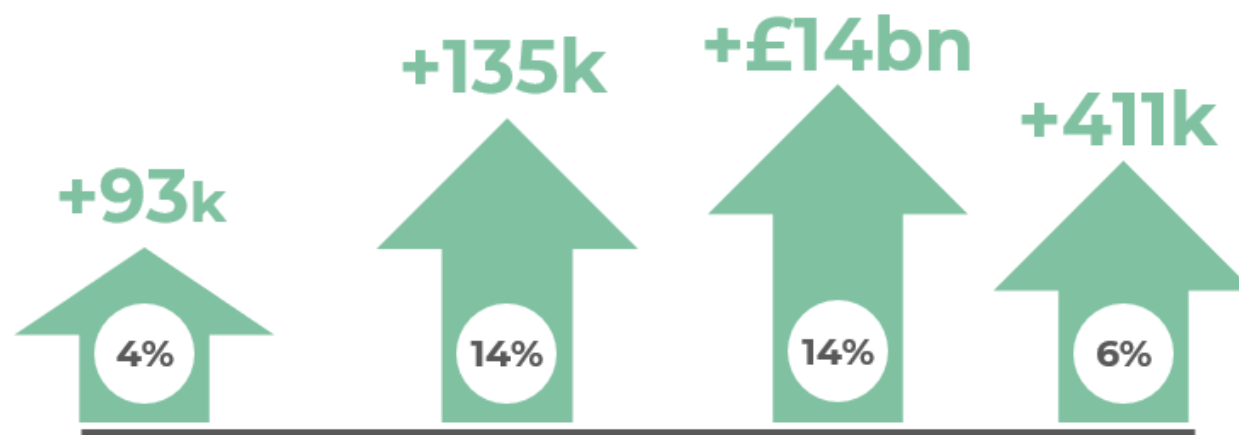


Figure 2.5: Preferred Scenario Projections compared to the Business As Usual Projections

Change compared to **Business as Usual (2050)**



Population



2.3m
(+13%)

Employment



1.0m
(+12%)

GVA



£102bn
(+118%)

Trips

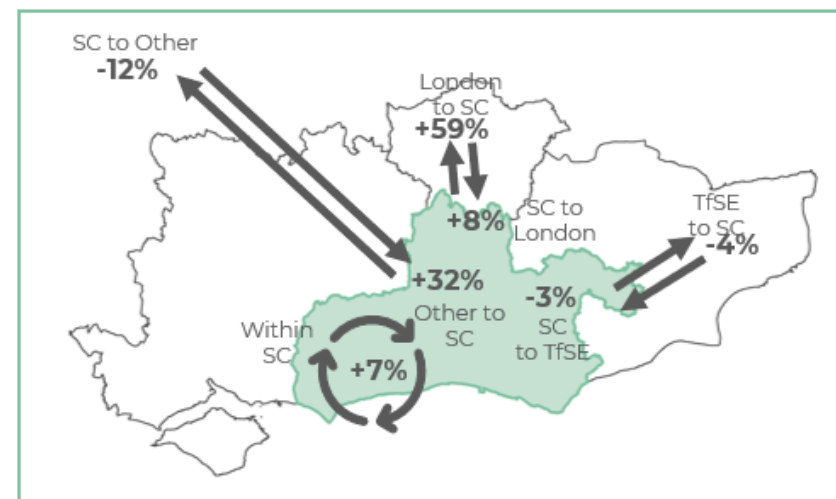


6.4m
(+15%)

BAU 2050

(% growth between 2020 and 2050)

Change by movement type



Change in trips by mode



Figure 2.6: Volume over capacity forecasts for highways under the Preferred Scenario, “A Sustainable Route to Growth” in 2050

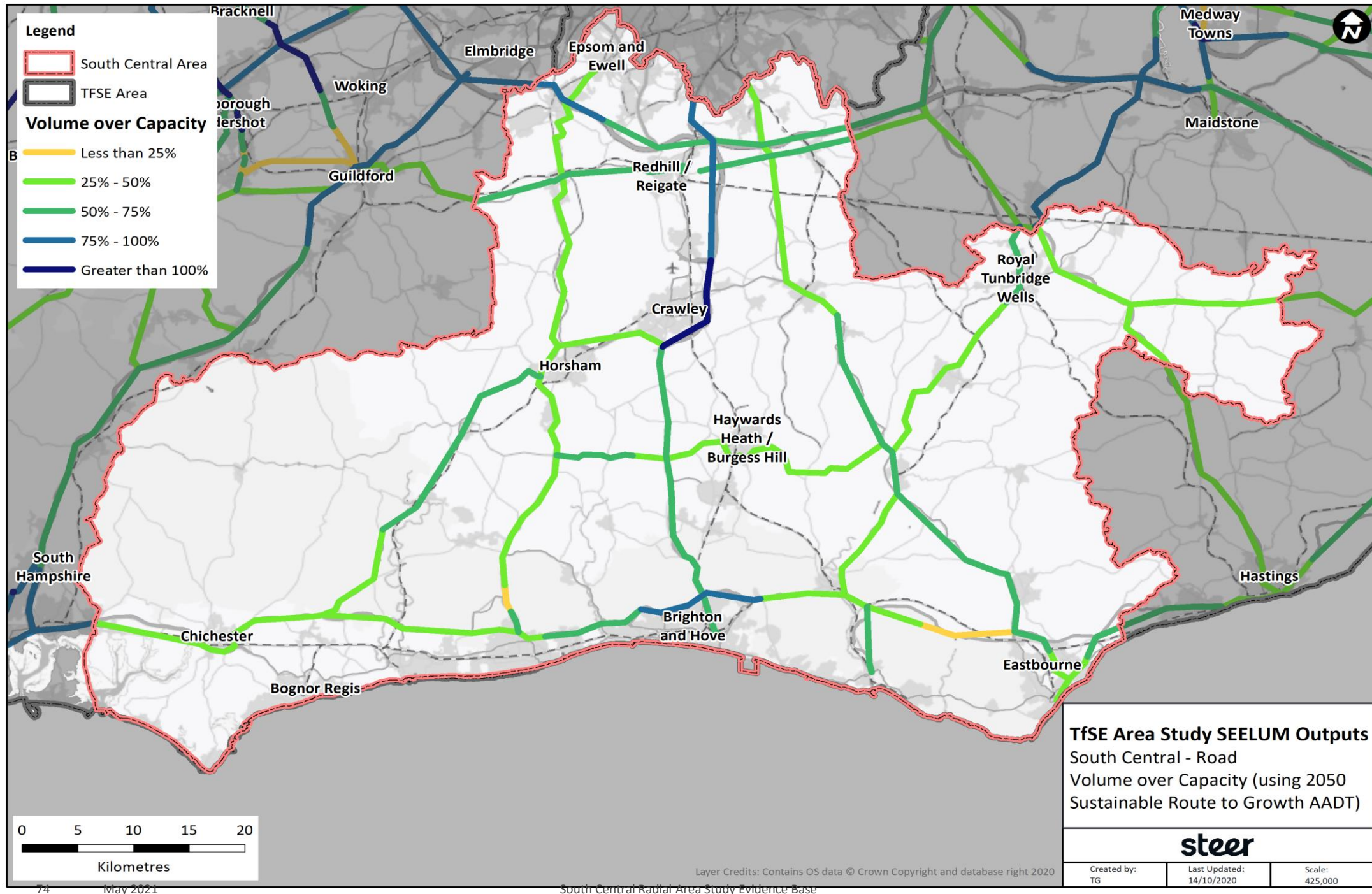
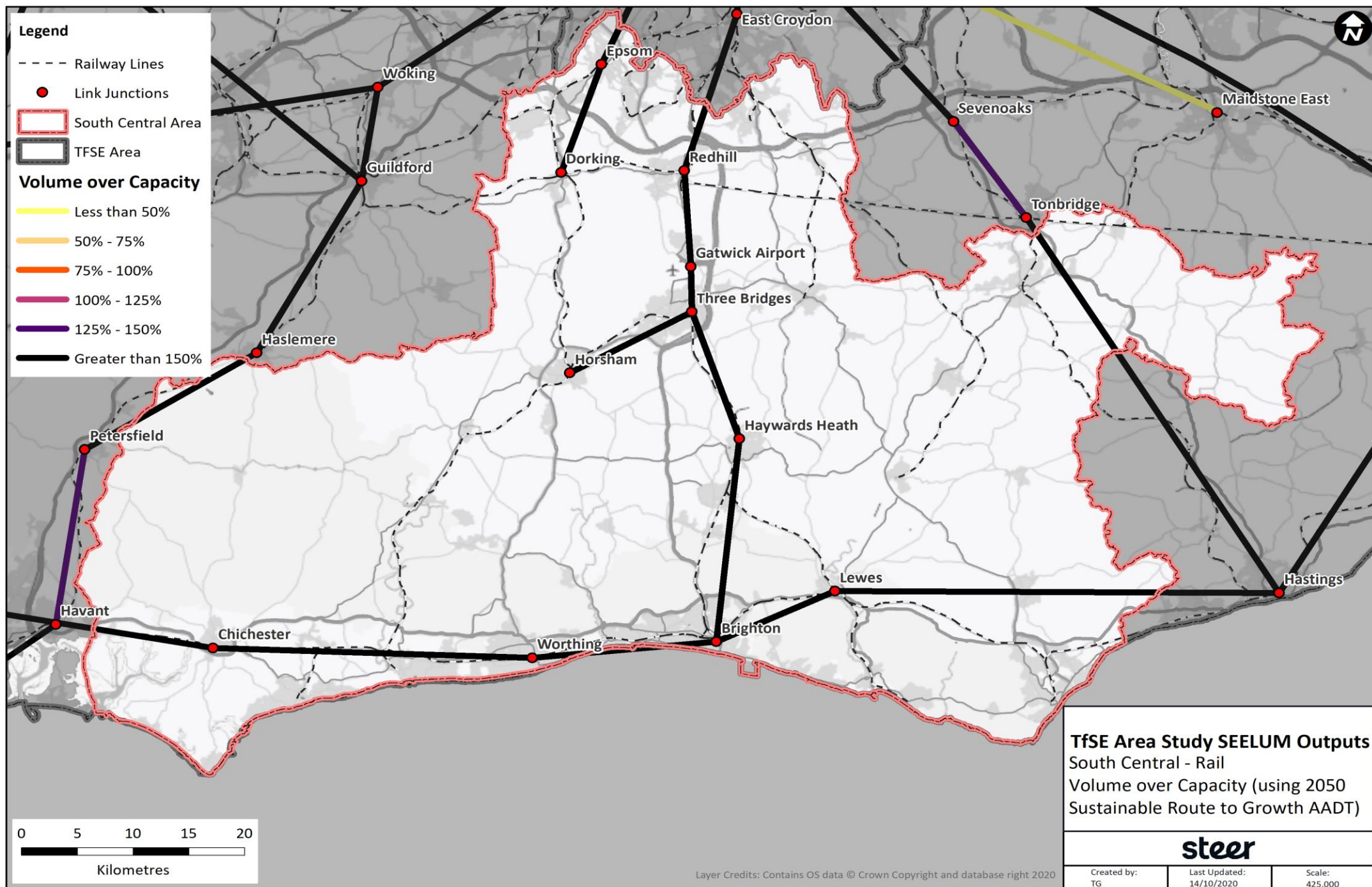
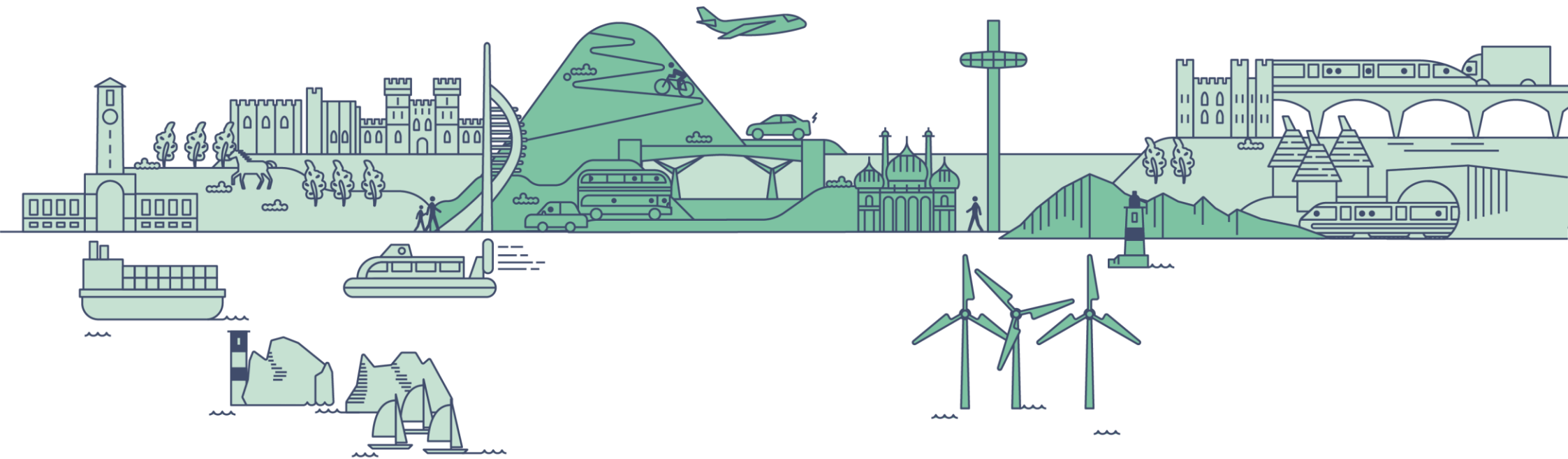


Figure 2.7: Volume over capacity forecasts for railways under the Preferred Scenario, “A Sustainable Route to Growth” in 2050





Part 2c

Interventions

Highway Interventions

Local Transport Authorities and Highways England are developing interventions to improve radial connectivity along the South Central corridor, many of which will support housing and employment growth in the area.

Table 2.1 summarises the key highways schemes that are currently in development in the South Central Radial Area. These are at varying stages of development.

The most prominent corridor in the area is the M23/A23, which provides the fastest connectivity between London and the South Coast. There are plans to further increase capacity along this corridor by implementing a smart motorway between junctions 8 and 10, with further ambition of extending this initiative to the full length of the motorway. There are also initiatives in development to improve access from the M23/A23 to Gatwick Airport, Crawley and Burgess Hill.

There is also ambition to upgrade the A22 and A24 to a higher standard. One example of this is upgrading the A24 to dual carriageway at Dorking and Leatherhead. Other options include improving junction layouts and introducing bypasses to reduce bottlenecks on the approach to and within urban centres such as East Grinstead and Horsham. These improvements aim to support both local journeys and provide an alternative for regional journeys between Major Economic Hubs in the North and South of the South Central Radial Area. There is also ambition to upgrade the A26 corridor between Lewes and Tunbridge Wells. There is also a desire to implement active transport infrastructure alongside highway upgrades where applicable.

Many of the interventions highlighted have progressed through the initial feasibility stages and have shortlisted options on the table. However, they still need to follow (lengthy) statutory processes and secure funding if they are to be realised.

Table 2.1: Proposed Highway Interventions in the South Central Radial Area

M23/A23 road corridor schemes
M23 junctions Smart Motorway (Junction 8 to 10 have just been completed)
M23 junction 9 (Gatwick Interchange) upgrade
A23 Burgess Hill/Hassocks junction improvements
A23 Brighton Road Hooley junction improvements
Crawley Eastern Gateway Scheme
A2300 Access to Burgess Hill upgrade
A22/A26 road corridor schemes
A22/A264 MRN corridor upgrades
A22/A2270/A2021 Corridor Package: Eastbourne and South Wealden improvements
A22 Smart Road Trial Proposition
A26 Lewes to Tunbridge Wells corridor improvements
A24/A29 road corridor schemes
A24 Dualling option (Dorking to Leatherhead)
A24 Horsham to Capel improvements
A29 Corridor improvements

Railway Interventions

A number of stakeholders have ambitions for a range of rail upgrade schemes that will enhance railway connectivity between centres in the South Central Radial Areas.

Table 2.2 summarises the key railway schemes that are currently under development in the South Central Radial Area. This includes schemes currently being delivered by Network Rail and future ideas proposed by local stakeholders to improve rail connectivity along the corridor.

Network Rail’s current focus is on delivering upgrades to the Brighton Main Line, increasing capacity between London and the South Coast. The next major step for this corridor is to deliver the, which would enable a higher number of faster services to/from London, deliver journey time improvements, and allow for more destinations to be served.

In addition to this, several stakeholders across the area are promoting schemes (some of which are supported by Network Rail) that aim to enhance passenger rail services on branch lines that feed into the Brighton Mainline. One such example is a proposal to run a higher number of fast and stopping services on the Arun Valley Line between Gatwick Airport and London. There are similar ambitions to improve journey times between Eastbourne and London.

There are several former railways in this area, which were closed in the middle of the 20th century. Some of these are still in use by heritage railways. There are also several campaigns active in the area to restore these railways to regular passenger use.

Most of the schemes listed in **Table 2.2** are still in the early stages of their development. This provides an opportunity for stakeholders to influence the scope and design of these schemes to maximise their impact on travel in the area.

Table 2.2: Proposed Railway Interventions in the South Central Radial Area

Railway upgrade schemes
Brighton Mainline Upgrade (renewals and resilience improvements)
Croydon Area Remodelling Scheme (CARS) and expansion of East Croydon station
South London Metroisation (capacity release for longer-distance services)
Keymer Junction grade separation and Wivelsfield Station rebuild
Uckfield rail line upgrades (passing loops to increase service frequency)
Arun Valley line upgrades and new stations
Arundel and Barnham chord – linking the Arun Valley line and West Coastway line
Gatwick Airport Station Upgrade
Brighton station upgrade (including a new platform)
New railway schemes
Uckfield to Lewes line reopening
Tunbridge Wells to Eridge line reopening
Horsham to Shoreham railway reopening
Guildford to Horsham railway reopening
Brighton Main Line 2 (Croydon to Lewisham and Canary Wharf)
Electrification and/or doubling of Oxted to Uckfield line

International Gateway and Local Transport Interventions

The South Central Radial Area is home to Gatwick Airport – the UK’s second busiest airport. The airport is the heart of the Gatwick Diamond economic area, an area primed for growth going forward.

Table 2.3 summarises the key international gateway and local transport interventions under development in the South Central Radial Area.

Gatwick Airport has a long term plan to increase capacity and services. The downturn in air travel due to COVID-19 has shifted priorities in the near term, but growth is still a longer term ambition for the airport. In the shorter term, Gatwick is committed to improve accessibility by road and rail. A refurbishment of Gatwick airport railway station is underway with desires to improve capacity and connectivity to this station.

The Port of Newhaven has recently reactivated its rail terminal, providing onward rail freight connections from the port. The port has ambitions to increase the amount of cargo that it handles. Providing onward rail and road connections are key for the port to realise this.

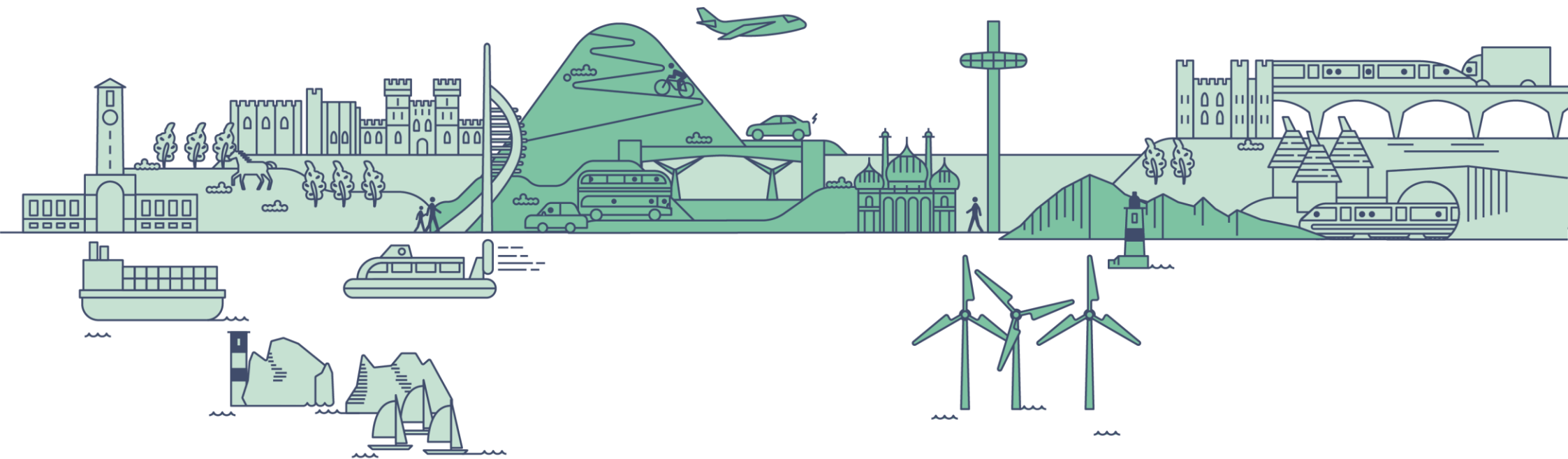
Local stakeholders are committed to providing an attractive alternative to car use in urban centres such as Brighton and Crawley. Larger scale mass transit opportunities are in discussion, such as developing a wide-scale bus rapid transit network serving the Gatwick Diamond economic area.

This corridor is home to the Avenue Verte, a historic cycling route between London, Brighton and Paris. There are plans to improve the regional cycling network, making cycling more attractive as a mode of transport and for leisure.

Supporting these are a host of sustainable transport packages which further look to create extensive, useful walking and cycling networks which serve the requirements of the residents of areas. These schemes have access to funds such as the Transforming Cities Fund (TCF) which should facilitate the development of these sustainable schemes.

Table 2.3: Proposed International Gateway and Local Interventions in the South Central Radial Area

International Gateway schemes
Gatwick capital investment programme, including potential second runway expansion
Gatwick Airport Station Upgrade and M23 Junction 9 Gatwick Interchange upgrade
Newhaven Port capacity upgrades
Newhaven Port new access road
Newhaven rail freight upgrade
Mass Transit schemes
Gatwick Diamond BRT - East Grinstead to Gatwick
Gatwick Diamond BRT - Redhill to Gatwick
Gatwick Diamond BRT - Horsham to Crawley and Gatwick
Haywards Heath to Burgess Hill Mass Transit
Brighton Mass Transit upgrades
Regional cycling schemes
International cycle networks (e.g. Avenue Verte)
Regional cycle networks (e.g. County wide cycle routes)
Local cycle networks (e.g. interventions within and between Major Economic Hubs)
Local sustainable schemes
Mass Transit/Public Transport interventions in Brighton and Hove, Eastbourne, Redhill, Epsom/Ewell and Worthing (many of these are discussed in the Outer Orbital Area Study)
Introducing local sustainable transport packages in other urban centres
Rural connectivity initiatives



Part 2d

COVID-19

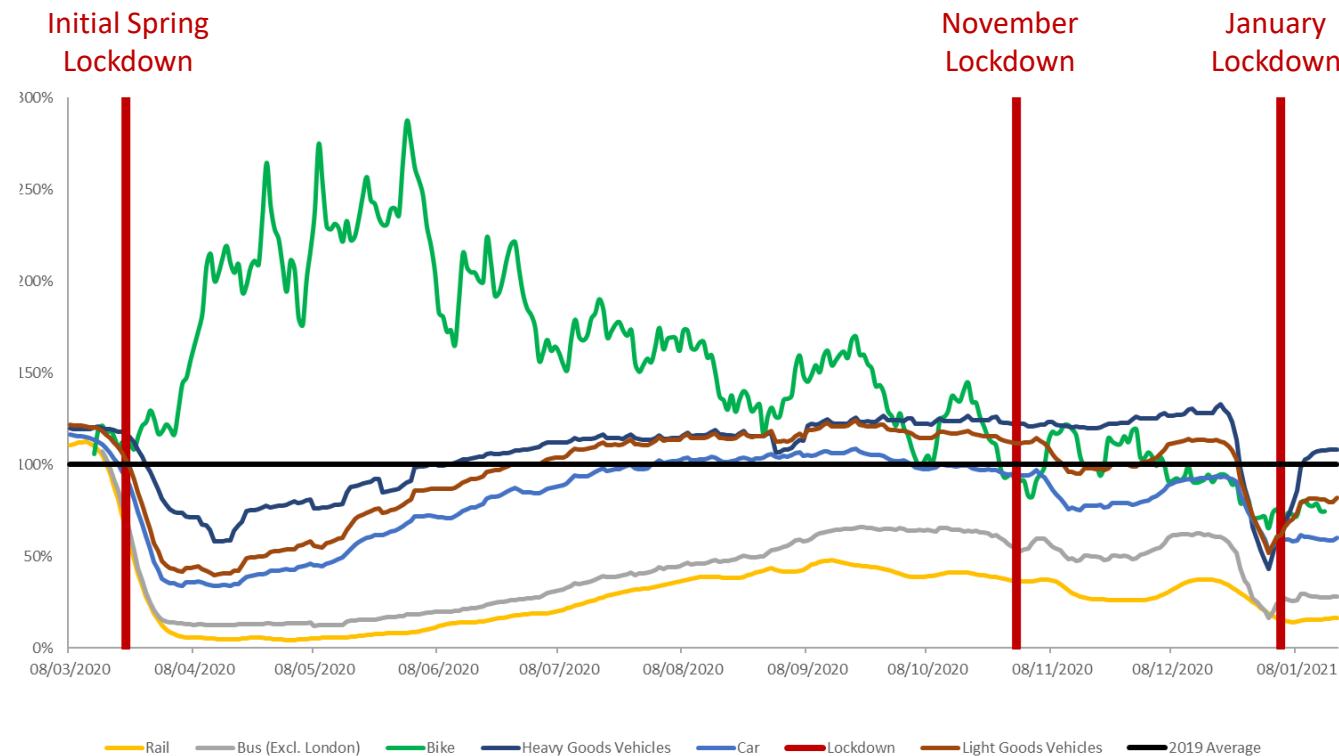
The South East has been severely impacted by the COVID-19 pandemic – both in terms of the health of its people, and in terms of the economy.

At the time of writing, the South East had experienced three periods of “lockdown”. Each lockdown has had a significant impact on the economy and transport network. Although national rollout of a vaccine means that a “return to normal” is now on the horizon, there remains significant uncertainty about how the transport network is going to develop post COVID-19.

Impact on transport networks and demand

As Figure 2.8 shows, travel behavior has differed markedly compared to the 2019 average. In general, the first lockdown generated an initial increase in the use of active modes in urban areas, which has since declined as the winter has advanced. Motoring rebounded quickly after the initial lockdown and is now at pre-pandemic levels. Public transport has been severely impacted across all areas, and revenues have been significantly impacted by this trend. International travel has also remained suppressed, in part due to the double impact of the pandemic and BREXIT. However, it is too early to predict how this will vary over the longer term.

Figure 2.8: Indexed transport demand by mode (national)

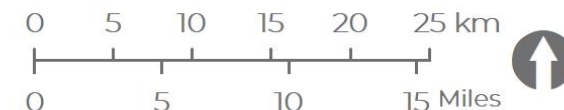
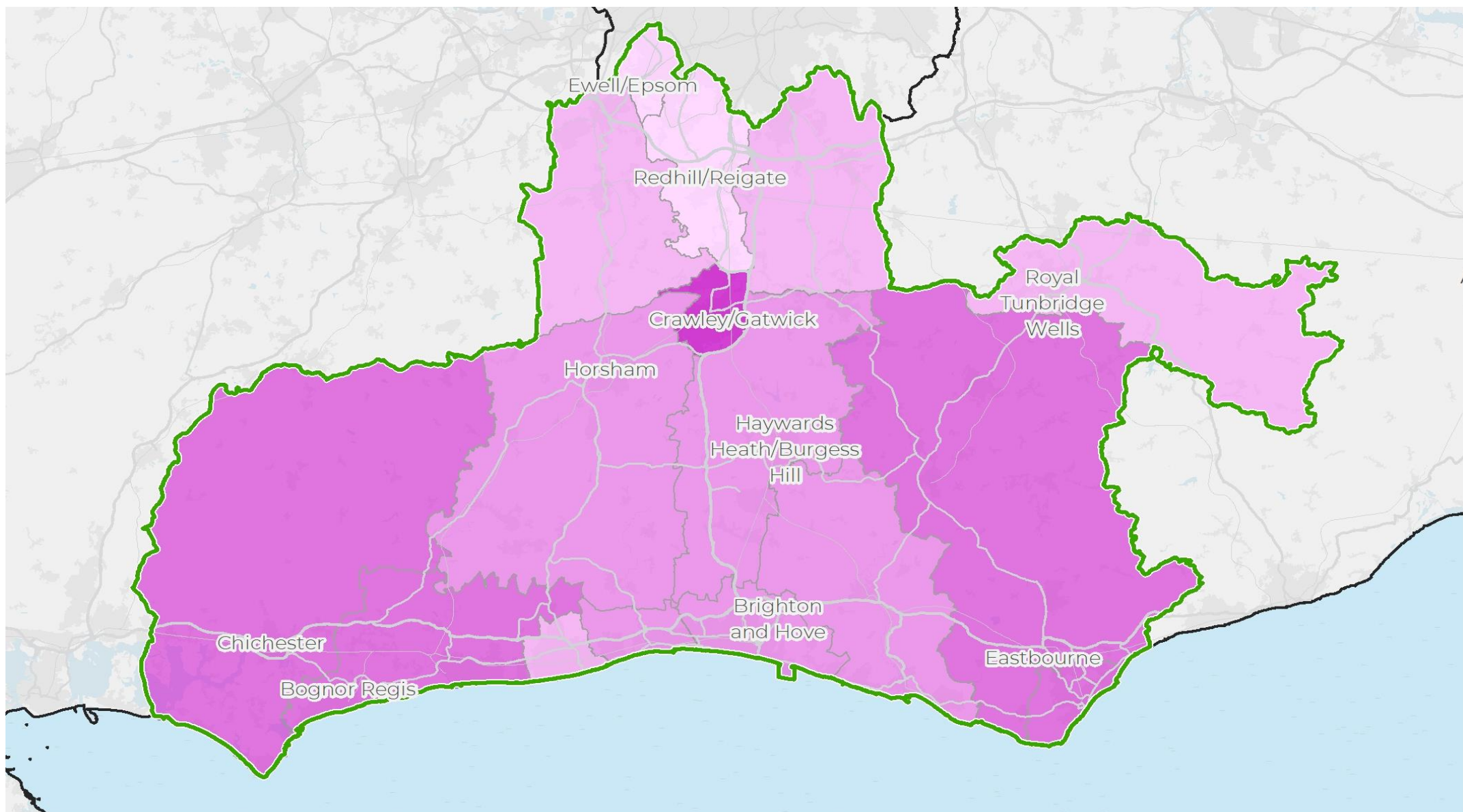


Impact on the economy and employment

There has also been a significant impact on the economy and employment. In March 2020, the Treasury introduced a furlough scheme to cover a portion of the cost of employees who were unable to work during the spring lockdown. The proportion of furloughed workers therefore presents a useful measure for COVID-19’s economic impacts.

Figure 2.9 shows the proportion of furloughed workers in the South Central Radial Area. Furlough rates were particularly high in the Crawley/Gatwick area, which is likely due to the high dependence of this area on the aviation industry, which has been particularly heavily impacted by the pandemic. The post-pandemic economic impacts remain to be seen.

Figure 2.9: Portion of the workforce participating in the COVID-19 furlough scheme



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Part 2e

PESTLE Analysis

PESTLE Analysis - Introduction

What is PESTLE analysis?

PESTLE considers the key exogenous drivers that might impact the South Central Radial Area.

The framework considers:

- P** Political
- E** Economic
- S** Sociological
- T** Technological
- L** Legal
- E** Environmental

This framework is designed to capture the key external factors which may impact upon any organisation or area. This can help the organisation to spot future risks and opportunities which may impinge/influence its future strategy. This type of analysis is particularly useful in this area because of the array of factors which feed into its future development – there is no single overriding factor which will define its future development.

A summary of the key issues we have identified through this analysis is presented in **Figure 2.10** to the right and explored in more detail in the following two pages.

Figure 2.10: Summary of PESTLE Analysis

Political <ul style="list-style-type: none">Increasing interests and concerns about Climate Change and the environmentThe “Levelling Up” agenda and devolutionCOVID-19 and “Building Back Better”	Economic <ul style="list-style-type: none">COVID-19 and associated economic impactNew UK/EU trading arrangementsReducing reliance on London as an economic centre	Social <ul style="list-style-type: none">InequalityAgeing populationChanges in working patterns
Technological <ul style="list-style-type: none">New mobilityBroadband and mobile telephony connectivityTechnological developments in established transport networks	Legal <ul style="list-style-type: none">UK Exit from the European UnionPlanning framework reformsLocal government reform	Environmental <ul style="list-style-type: none">Climate ChangeNational ParksChanging attitudes and behaviors to sustainability

PESTLE Analysis (1 of 2)

Political

- **Environmental awareness** – There is increasing awareness in the political mainstream that environmental destruction fundamentally threatens the stability of our societies. This shift in policy/political direction will likely change the nature of the conversations being conducted about future scheme development in the South Central Radial Area.
- **“Build Back Better”** – Following calls for a “Green New Deal”, the current government is promising to “Build Back Better” following the COVID-19 pandemic. This may help the South Central Radial Area alleviate significant constraints, in terms of housing provision and transportation links.
- **“Levelling up”** – The government has expressed a need to ‘level up’ the economy, helping to reduce inequality. Greater devolution of power to local government and the rise of LEPs may also improve decision making at a regional level, and increase the effectiveness of many schemes.

Economic

- **COVID-19 recession** – The UK economy is currently in a recession resulting from the COVID-19 pandemic. It has caused unprecedented structural changes to, and imposed severe limits upon, economic activity. This will have a major impact on the economic development of the South Central Radial Area, and the South East more widely. In times of austerity, central government may be forced to reduce grants to Local Authorities. Local Authority funding may be affected by declines in local income streams (e.g. business rates).
- **Reducing reliance on London as an economic centre** – The government have outlined an ambition to “level up” the economy through investing more in the regions. The South Central Radial Area could benefit from this investment. Couple this with COVID-19 and a shift in attitudes to working in large centres, there may be more scope for developing local economies which will benefit small and medium sized enterprises. There is opportunity for new industries in the region, which will drive jobs and earning potential.

Social

- **Inequality** – There are pockets of high levels of deprivation in South Central Radial Area, notably in Crawley and in urban areas on the Sussex Coast. Many people also find it challenging to afford a place to live as housing is relatively expensive in this area.
- **Ageing population** – Certain sections of the South Central Radial Area have a very concentrated elderly population. This has the potential to place a brake on regional growth, whilst also adding significant expense to the region’s healthcare bill.
- **Changes in working patterns** – In response to the COVID-19 pandemic, significant volumes of people are working totally/more extensively from home. This has encouraged individuals who might otherwise have lived and worked full-time in London to spend more time in the South East. Some stakeholders believe this trend will continue and this could lead to more people living further away from London and commuting less frequently than before.

PESTLE Analysis (2 of 2)

Technological

- **New Mobility** – This encompasses new, emerging technologies (e.g. electric vehicles, scooters, and bikes) as well as new business modes, often based on sharing rather than owning assets. Advances in technology must be allied with encouragement by local political actors to ensure the uptake of these technologies is straightforward and widespread.
- **Broadband and mobile telephony connectivity** – Social changes, such as increased home working, and the greater resilience on an internet connection to share data about what is happening around the transport network (e.g. congestion) mean that connectivity to the internet is becoming increasingly important for economic prosperity and development.
- **Technological developments in established transport networks** – This includes Smart Motorways and technology to allow for dynamic and automated signalling which can increase capacity by enabling trains to run closer together at higher speeds.

Legal

- **UK exit from the European Union (“Brexit”)** – Significant changes in the legal frameworks which govern trade flows between the UK and EU were introduced in March 2021. This will likely have a major impact upon the flows of people and goods that move through the international gateways located in the South Central Radial Area, potentially leading to delays and congestion.
- **Planning Framework Reforms** – The current approach toward planning and developing schemes can make it challenging to achieve alignment between spatial and transport planning (and interventions).
- **Local Government Reform** – There is a general trend in UK local government towards Unitary Authorities and Combined Authorities. Unitary Authorities, which combine the powers and roles of counties and districts into a single authority, exist in several parts of the South East, including Brighton and Hove. In other parts of England, Unitary Authorities are being established to replace two tier counties. Some areas are going further by combining transport functions through Combined Authorities.

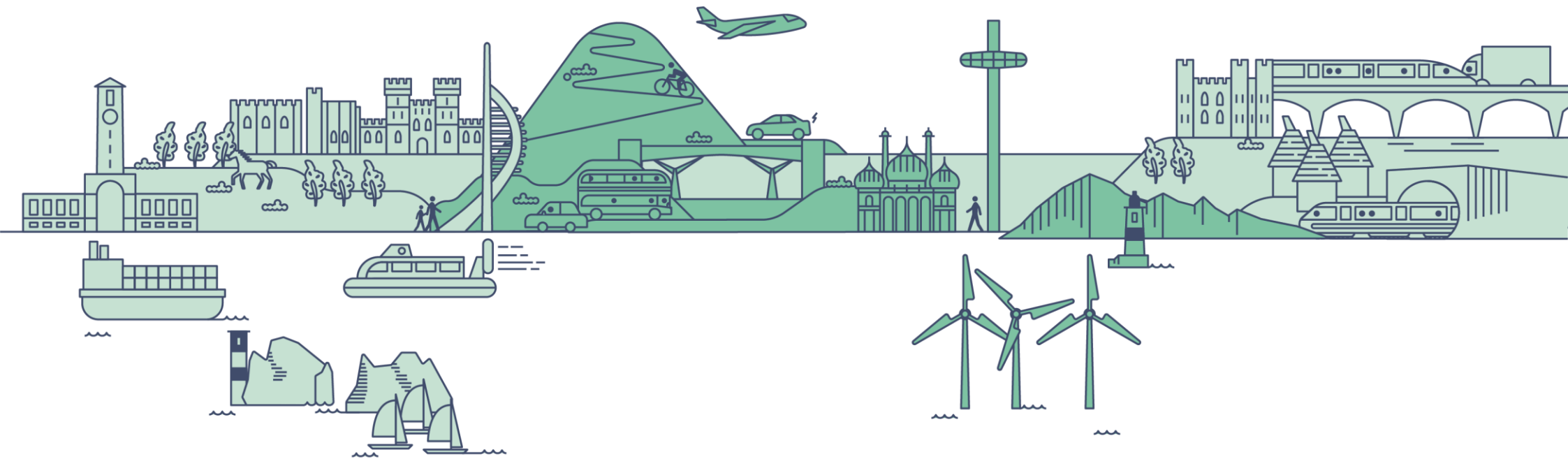
Environmental

- **Climate Change** – The South Central Radial Area will be impacted by the climate crisis. This is already one of the warmest areas in the country and several areas identified as being at the highest risk of flooding. It is also forecast to have one of the fastest rising temperatures of all UK regions. Many activists are increasingly using the UK’s Climate Change Act (2019) to challenge infrastructure planning decisions.
- **National Parks** – The South Central Radial Area is home to several internationally recognised protected area, including the South Downs National Park and Brighton Biosphere. These are one of the region’s core strengths. However, they can constrain some opportunities for development.
- **Changing attitudes and behaviors to sustainability** – People are becoming more aware of the wider climate issues. Environmental groups are becoming more vocal in the region, showing strong opposition to infrastructure schemes which may harm the natural environment or increase carbon emissions. This may encourage more people to switch from less sustainable transport modes to more sustainable modes.



Part 3

Need for Intervention



Part 3a

SWOC Analysis

SWOC Analysis

Introduction

SWOC is a framework that considers:

- S** Strengths
- W** Weaknesses
- O** Opportunities
- C** Challenges

It is used to help understand and synthesise an organisation or area's current resilience, and future potential.

We have analysed the evidence presented in earlier parts of this document and worked with stakeholders – including members of this area study's Working Group and the study's wider stakeholder forum – to understand the key strengths, weaknesses, opportunities and challenges in the South Central Radial Area.

These are summarised to the right and on the following two pages.

Strengths

- **Connectivity between Brighton and London** – notably on the Brighton Main Line and M23/A23 corridor.
- **Prosperous economy** – with particular strengths in the aviation and financial services industries.
- **Natural and historic environment** – the corridor has a high density of protected landscapes/coastlines, and numerous historic landmarks, towns, and cities.
- **Agricultural** – the area has a high portion of high-quality farming land.
- **Overall diversity in places and economy** – the proximity of vibrant cities, diverse landscapes, and economic opportunities provides a high level of opportunities and quality of life for residents.
- **Iconic cities, including one of the largest conurbations in England (Brighton and Hove)** – which serve as key recreational and employment hubs.
- **International connections** – area is home to Gatwick, the UK's second largest airport.
- **Leading universities** – including several renowned institutions in the Brighton area.

Weaknesses

- **Poorer connectivity off the primary North-South corridor** – this makes journey times by public transport uncompetitive compared to private car journeys, especially for coastal communities outside Brighton and Hove.
- **Less developed mass transit systems** – despite its size, Brighton and Hove is not served by the types of mass transit systems that have been developed elsewhere in the UK, which means public transport is less attractive than it could be.
- **Poor rural connectivity** – rural areas are understandably less well served than denser, more highly populated urban areas, which means access to residents (and visitors) in rural areas is poor.
- **Complex governance landscape** – with multiple levels of regional, local, and national government, meaning that decision-making can be complex and slow.
- **Productivity gaps and pockets of deprivation** – while transport is not the only driver of this outcome, poor connectivity may be contributing to poor socioeconomic outcomes, particularly in coastal communities.

Opportunities

- **Domestic tourism** – the region has some of the most easily accessible coastline in the country, with large nearby population centres. Recent interest in domestic tourism could reinvigorate local tourism.
- **Support for decarbonisation** – the area includes several local authorities who have indicated strong support to decarbonise their respective areas. This is an opportunity for stakeholders to promote sustainable transport interventions and use the area's resources to generate sustainable energy (e.g. offshore wind).
- **Housing and employment growth** – investment will enable more of the South East's residents to access affordable housing and local employment.
- **Regional “levelling up” agenda** – the government's recently announced “levelling up” fund has identified several areas in the South Central Radial Area as priorities for investment.
- **Entrepreneurship and innovation** – Brighton and Hove has been identified as a “hot spot” for start ups. There are several innovative companies active across the whole area.

Challenges

- **Climate change (sea level rise, coastal erosion, extreme storms, droughts)** – the area's coastline is susceptible to flooding if sea levels rise. Several transport corridors are vulnerable to disruption (e.g. landslips) caused by extreme weather.
- **Decarbonisation challenge** – parts of the area's transport network and economy (e.g. aviation) will find it difficult to completely decarbonise in the medium to long term.
- **Population growth** – significant investment is needed to ensure adequate housing, infrastructure, and services are needed to support a growing population.
- **COVID-19 and economic fallout** – the South Central Radial Area, which was already behind in some economic indicators prior to the pandemic, is very exposed to the economic impact COVID-19, particularly around Gatwick where the local economy relies heavily upon aviation.
- **Transport accessibility, equity and social inclusion** – particularly in rural areas, coastal communities, and other areas with high indicators of deprivation.
- **Building consensus among stakeholders** – this has proved challenging in recent years.

Conclusions

The South Central Radial Area has a strong economic foundation and is well placed to prosper, despite the challenges posed by COVID-19 and the UK's changing relationship with the European Union.

There is *some* evidence that the COVID-19 pandemic has caused many businesses and employees to re-evaluate their working practices. While there will continue to be a need for workplaces and work-related travel, there may be an opportunity to use the lessons from COVID-19 (and the technology that supports remote working practices) to work further away from major cities like London. This may markedly change transportation and development patterns across the region in the coming years.

The impacts are unclear: Perhaps more businesses inside the M25 may see benefits in relocating to coastal towns and cities? Perhaps there will be more interest in domestic tourism (which had a very strong 2020) and more people will be interested in short breaks in the South East? Either way, there are opportunities, and the transport system should be prepared for them.

Figure 3.1: South Central Radial Area SWOC

A summary of the key global strengths, weakness, opportunities and challenges for the South Central Radial Area are provided below. This was created in consultation with TfSE's key stakeholders through workshops held early in 2021.

Strengths

- Proximity/connectivity to London
- Proximity/connectivity to Brighton conurbation
- International Gateways and Gatwick Diamond
- High value sectors (financial services, automotive, medical)
- Natural/historic environment and quality of life
- Affordable coastal towns (not Brighton)
- Universities and student populations (retained)
- Fastway BRT in Gatwick Diamond
- Rail services, Thameslink
- Cycling (popular leisure routes)

Opportunities

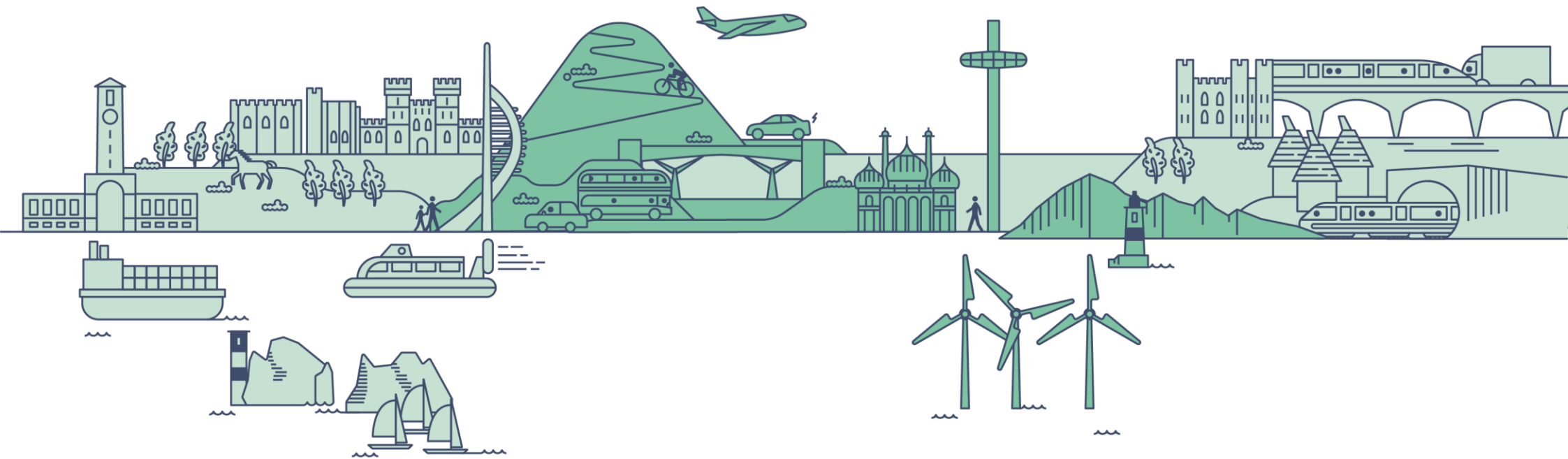
- Growth (inc. Green Growth) and investment in general
- COVID-19 recovery and 'levelling up' agenda
- Density/development conducive to mass transit systems
- Pro public transport attitudes and willingness to change
- High level of start ups in Brighton
- Decentralised energy (hydrogen/offshore wind)
- Technology and planning opportunities to improve AQ
- Domestic tourism growth
- Funding opportunities from development
- Improvements in technology and broadband

Weaknesses

- Weak integrated/transport planning/planning constraints
- Poor bus services and rural bus service connectivity
- Capacity challenges (highways, railways, energy)
- High reliance on car, especially in rural areas
- Unaffordable housing, especially in Brighton area
- Lack of fast growing/high value jobs/high skilled industries
- Rail network trying to be all things to all people
- Poor resilience on highway and railway networks
- Housing planning imbalanced with job growth
- East – West connectivity and capacity challenges
- Gaps in active travel infrastructure

Challenges

- Decarbonisation
- New trading arrangements with the European Union
- Poor socioeconomic outcomes exacerbated by COVID-19
- Future energy needs (electricity, hydrogen, etc)
- Housing targets are getting harder to hit
- People will still need cars
- Distribution/logistics sector trends and needs
- Protected areas harder to protect, and constrained
- Need for joined up thinking/appropriate governance
- Funding (amount needed/ties to development/silos)
- Rising micro-freight/last mile freight demand
- Nimbyism



Part 3b

Issues and Opportunities

Economic Opportunities and Challenges

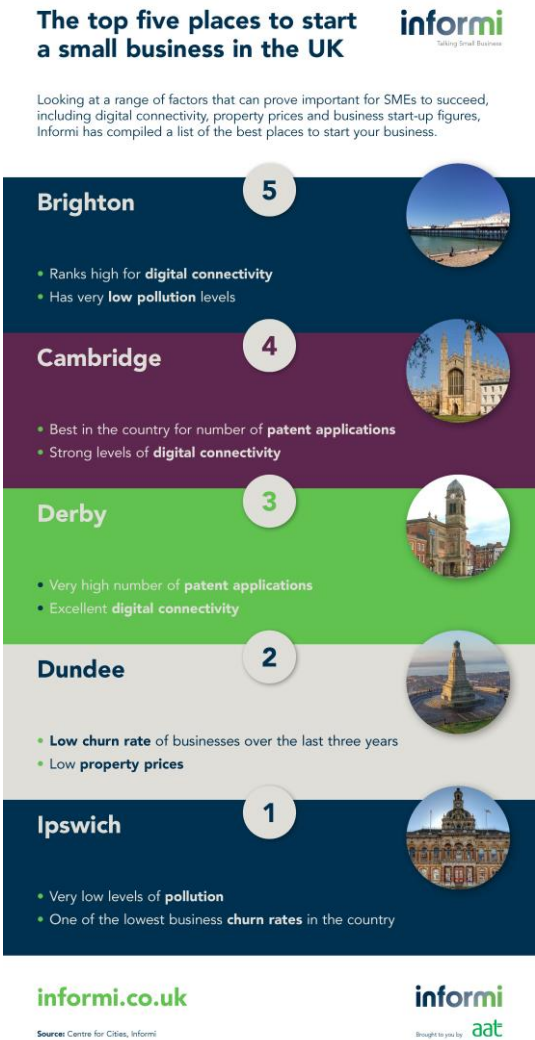
The South Central Radial Area is home to one of the best cities in the UK for entrepreneurs and start ups.

In 2017 Brighton and Hove was identified as the 5th best place to start a small business in the UK, and in 2016 the same city was identified as the 4th best place for entrepreneurs (see Figure 3.1). London also scored highly in the latter study.

This is a significant strength for the South Central Radial Area and an opportunity for the wider South East. It shows a path to creating a more diverse, high value economy for the area.

Developing the right environment for new businesses requires a multitude of ingredients including skills, capital, land, and innovation. The area’s universities and highly educated labour force, along with its strong connections to London, are likely to be contributing to Brighton’s strong performance.

Figure 3.1: Top cities for entrepreneurs and start ups



Source: UCL School of Management (2016) <https://www.mgmt.ucl.ac.uk/capital-of-entrepreneurs>
Informi.co.uk (2017) <https://informi.co.uk/blog/best-location-start-business-uk-might-surprise-you>

Transport Network Resilience Opportunities and Challenges

The South Central Radial Area is served by a key rail and highway “spine” – the Brighton Main Line, and the M23/A23.

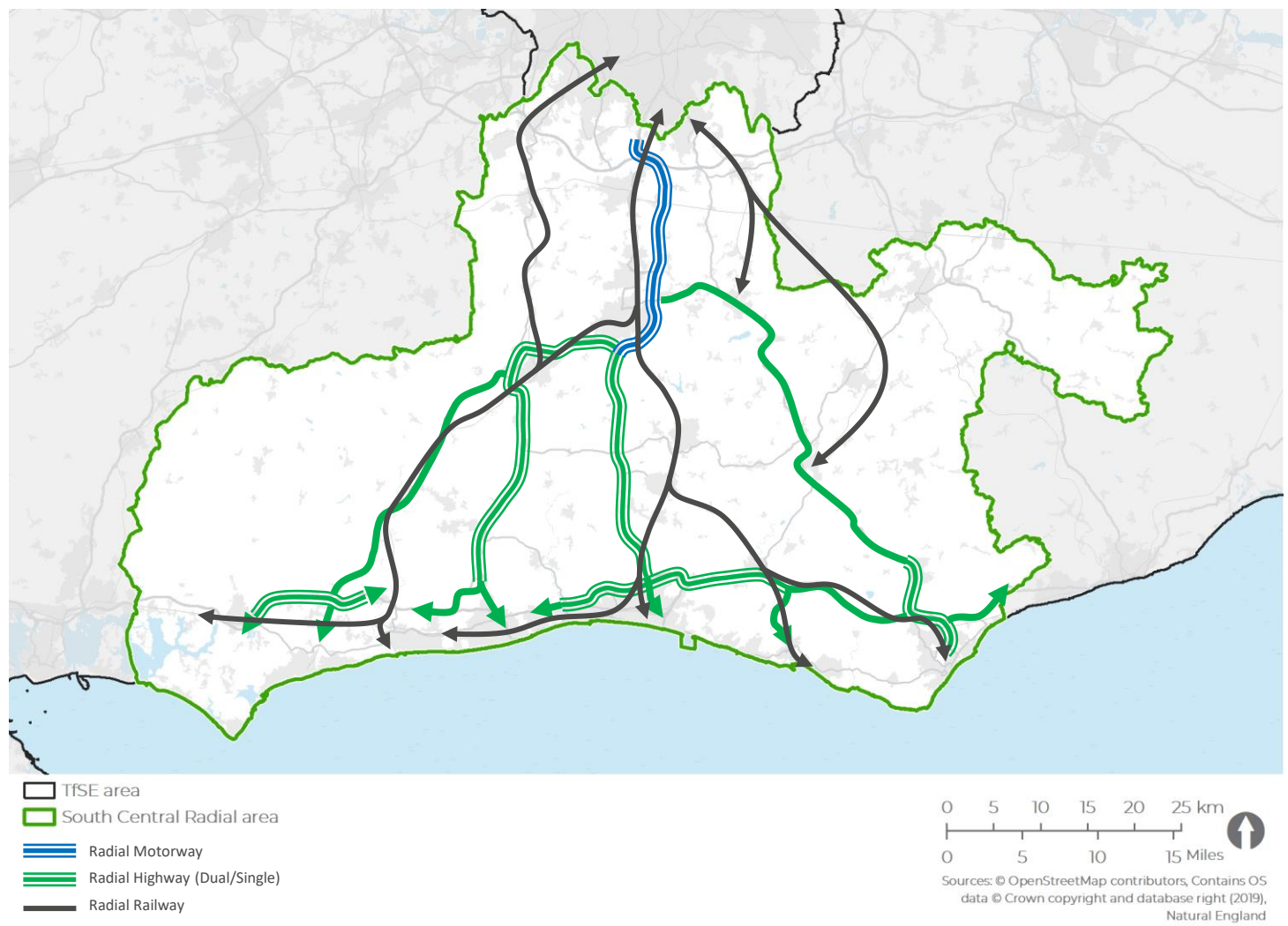
In contrast to other parts of the South East, the South Central Radial Area is highly dependent on this single corridor. As Figure 3.2 shows, the almost all radial rail routes and strategic highway routes merge at Crawley/Gatwick and continue north to London and the M25.

This means the area is vulnerable to significant disruption if there are any perturbations or delays on this corridor.

The intensity of services on the Brighton Main Line means a small incident can have a significant impact on the wider network, especially if it occurs north of Gatwick.

Similarly, disruption on the M23/A23 can force traffic on to the A22 and A24, which are not well suited to heavy traffic, especially at their northern ends.

Figure 3.2: Radial routes in the South Central Radial Area



Public Transport and Active Travel Opportunities and Challenges

In support of the development of TfSE's Transport Strategy, Steer undertook an analysis of the characteristics of South East's Major Economic Hubs. This analysis identified opportunities to promote more active travel and public transport mode share at all the South Central's Major Economic Hubs. A summary of this analysis is presented in **Table 3.1**.

Table 3.1: Active Travel and Public Transport opportunities at the South Central Radial Area's Major Economic Hubs

Major Economic Hub	High self-containment (50%+)	High % of journeys under 2km (20%+)	High % of journeys 2 - 5km (20%+)	High % of journeys 5 – 10km (20%+)	Low active mode share (below 20%)	Low public transport mode share (below 15%)
Implication	Opportunity to increase sustainable transport mode share	Opportunity to increase active travel mode share	Opportunity to increase cycling mode share	Opportunity to increase public transport mode share	Opportunity to increase active travel mode share	Opportunity to increase public transport mode share
Bognor Regis	✓	✓	✓			✓
Bexhill/Hastings		✓			✓	✓
Burgess Hill/Haywards Heath		✓			✓	✓
Brighton and Hove	✓	✓	✓			
Chichester				✓		✓
Crawley/Gatwick					✓	
Eastbourne	✓	✓	✓		✓	✓
Ewell/Epsom			✓	✓	✓	
Horsham		✓			✓	✓
Redhill/Reigate				✓	✓	
Royal Tonbridge Wells/Tonbridge		✓				
Worthing					✓	

Major Economic Hub Development Opportunities and Challenges

Steer also analysed the opportunities and challenges presented by planned developments at each of the South Central Radial Area's Major Economic Hubs. A summary of analysis is presented in **Table 3.2** below and in detail in **Appendix C**.

Table 3.2: Development opportunities and challenges at the South Central Radial Area's Major Economic Hubs

Hub	Development Opportunities and Challenges
Bognor Regis	<ul style="list-style-type: none"> Most housing development in this area is planned close to future major employment sites and the public transport network (notably near railway stations). That said, the highway network is already under significant pressure in this area and future developments risk exacerbating congestion on the A31 and M3. This Major Economic Hub is expected to become less self-contained, which suggests commuting trips outside this Major Economic Hub will increase.
Bexhill/Hastings	<ul style="list-style-type: none"> While some development in Hastings will be located near the railway station, most will occur on the perimeter, quite far from the town centre. In Bexhill, development is also quite far from the town centre. This does not bode well for public and active transport. There is also a risk that future development will place additional pressure on the (already constrained) Major Road Network in this area.
Brighton and Hove	<ul style="list-style-type: none"> Most development is concentrated on public transport corridors close to shops, services, and employment areas. While there is a risk these developments will add some pressure on the local highway network, they should be well served by bus, rail, and active travel corridors.
Chichester	<ul style="list-style-type: none"> Most housing development is on the periphery of the urban area, although some is located within feasible walking/cycling distance of the train station/city centre.
Crawley/Gatwick	<ul style="list-style-type: none"> Most housing development in the city centre/within walking and cycling distance of public transport. However, the local highway network is already under significant strain and any future development risks placing additional pressure on these roads (and the Strategic Road Network). This Major Economic Hub is expected to become more self-contained, which suggests commuting trips outside this Major Economic Hub will increase.
Eastbourne	<ul style="list-style-type: none"> Most housing development planned within walking/cycling distance of public transport sites and the town centre. However, there is a risk this development will place additional pressure on the Strategic Road Network (e.g. A27 and A259).
Ewell/Epsom	<ul style="list-style-type: none"> Future developments will be situated within walking/cycling distance of Epsom train station. However, several developments are located near the A24, which risks adding strain to this congested road. This Major Economic Hub is expected to become more self-contained, which suggests commuting trips outside this Major Economic Hub will increase.
Horsham	<ul style="list-style-type: none"> Most future development planned within walking distance of key amenities and transport hubs. While these may add some strain to the A24 and A264, these roads are currently relatively uncongested and should be able to accommodate this growth.
Redhill/Reigate	<ul style="list-style-type: none"> Most future development is planned within walking and/or cycling distance of employment sites, amenities and public transport hubs. There is a risk these developments will add pressure to the A23. This Major Economic Hub is expected to become more self-contained, which suggests commuting trips outside this Major Economic Hub will increase.
Royal Tunbridge Wells/Tonbridge	<ul style="list-style-type: none"> Most future development is planned within walking and/or cycling distance of employment sites, amenities and public transport hubs. This Major Economic Hub is expected to become less self-contained, which suggests commuting trips outside this Major Economic Hub will increase.
Worthing	<ul style="list-style-type: none"> Most development is concentrated on public transport corridors close to shops, services, and employment areas. While there is a risk these developments will add some pressure on the local highway network, they should be well served by bus, rail, and active travel corridors.

A Potential Cyclists Paradise?

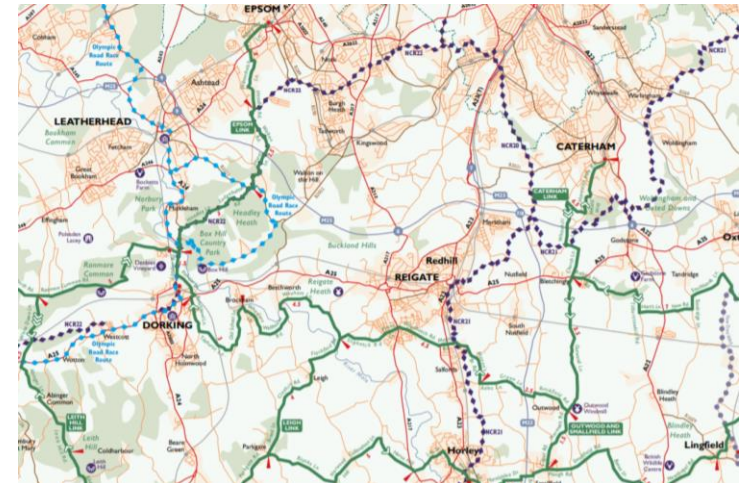
The South Central Radial Area is a popular area for leisure cycling. It is also the home of one of the South East's most popular international cycleways – the Avenue Verte.

While relatively few commuting journeys are undertaken by bike, leisure cycling is popular. The South Central Radial Area includes popular cycling attractions including Box Hill, Leith Hill, and Ditching (see Figure 3.3).

However, there are significant issues with safety and conflicts between cyclists and other road users at multiple locations in the area.

The popularity of cycling in this area should help make the case for investing in cycling infrastructure – including infrastructure that serves local journeys and supports shorter trips within the area.

Figure 3.3: Popular cycling attractions and routes in the South Central Radial Area



Source: Road Cycling UK <https://roadcyclinguk.com/sportive/ten-best-cycling-climbs-surrey.html>

Cycling Weekly <https://www.cyclingweekly.com/news/latest-news/exciting-plans-new-cycling-hub-cafe-leith-hill-446080>

Cycle Seahaven: <https://cycleseahaven.org.uk/review-of-the-avenue-verte/>

Surrey County Council (Surrey Cycle Routes): https://www.surreycc.gov.uk/data/assets/pdf_file/0007/132001/Surrey-Cycleway-Map-updated-July-2019.pdf



Part 3c

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 in the right places, supported by the right infrastructure, planned to deliver sustainable transport outcomes.

Economy

5. The area's economy is not growing as fast as other areas of the South East, and appears to be too reliant on a small number of industrial sectors.

Access

6. Rural communities are being left behind in digital, active travel, and public transport connectivity.
7. Too many transport services and networks are inaccessible to all users.

Active Travel

8. There are significant gaps in regional, national, and international cycle networks in the area.
9. Active travel mode share is too low for many short journeys in the area.

Public Transport

10. The Sussex Coastal conurbation – the 2nd largest conurbation in the South East – does not have the mass transit systems it needs (and deserves).
11. There are gaps in the quality of interurban public transport provision, particularly in rural areas.
12. Public transport information and ticketing arrangements are not sufficiently coordinated nor adequately integrated, particularly across transport modes.
13. For many people, public transport fares are too high and too complicated.

Rail

14. Resilience is relatively poor on the Brighton Main Line – almost every passenger rail service passes through a single bottleneck at East Croydon
15. Spare capacity is limited on the Brighton Main Line and the allocation of this capacity does not meet the needs and/or aspirations of all the area's stakeholders
16. Connectivity is relatively poor for communities served by the Arun Valley Line, East Coastway Line, and Oxted Line (especially when compared to the Brighton Main Line).

Highways

17. There are several congestion, road safety, and air quality “hot spots” in the area, particularly in Town Centres and at major junctions.
18. The area's major highways do not have enough capacity to accommodate planned housing (and potential airport) growth.

1 Transport is not de-carbonising fast enough

While many stakeholders in the South Central Radial Area recognise the need to decarbonise, this is not happening fast enough.

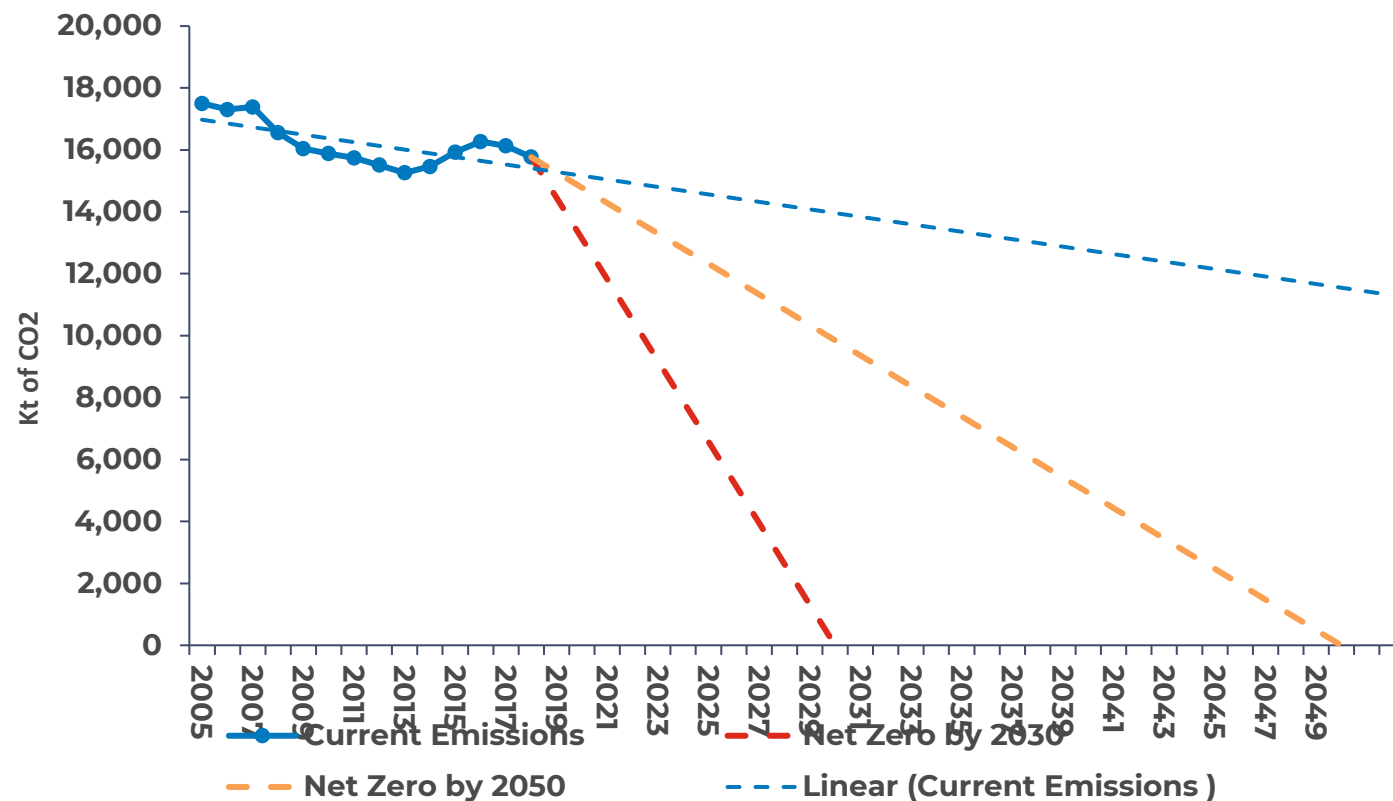
The trajectory shown in the figure to the right indicates, the South East will not reach a position of net-zero carbon emissions by transport by 2050 – which is now a legal requirement supported by domestic legislation and international agreements (e.g. Paris).

Several Local Transport Authorities in the South East have committed to more aggressive decarbonisation targets (e.g. reaching net-zero by 2030).

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 some sections of diesel operations, which also contribute to this challenge.

Carbon Emissions Trajectory for the South East Area



Source: Steer analysis of BEIS data

The transport networks serving the South Central Radial Area are **vulnerable to the effects of climate change and in many areas are showing signs of poor resilience.**

The South East's transport network cuts across several areas that are already vulnerable to flooding and temperature extremes. Some of these “funnel” significant flows over bridges and cuttings that do not have adequate diversionary routes (and creating better routes would be costly). For example, the A259 runs close to the coast in many places, and some sections of the M23 run through several flood plains. The South East's railway network is relatively old and features numerous tunnels and cuttings.

Climate change is likely to increase the frequency and strength of weather events (and extreme heat in summer). The outcome of this problem is increased operations, maintenance and renewal costs, which will be borne by transport users and wider society. Funding will be needed for this (which is not easy to secure in the current economic climate).

Examples of climate change resilience challenges



BBC NEWS

AFTERNOON LIVE

UK heatwave

London-Luton trains cancelled due to wires overheating

■ Paris records its hottest ever temperature: 42c

16:10

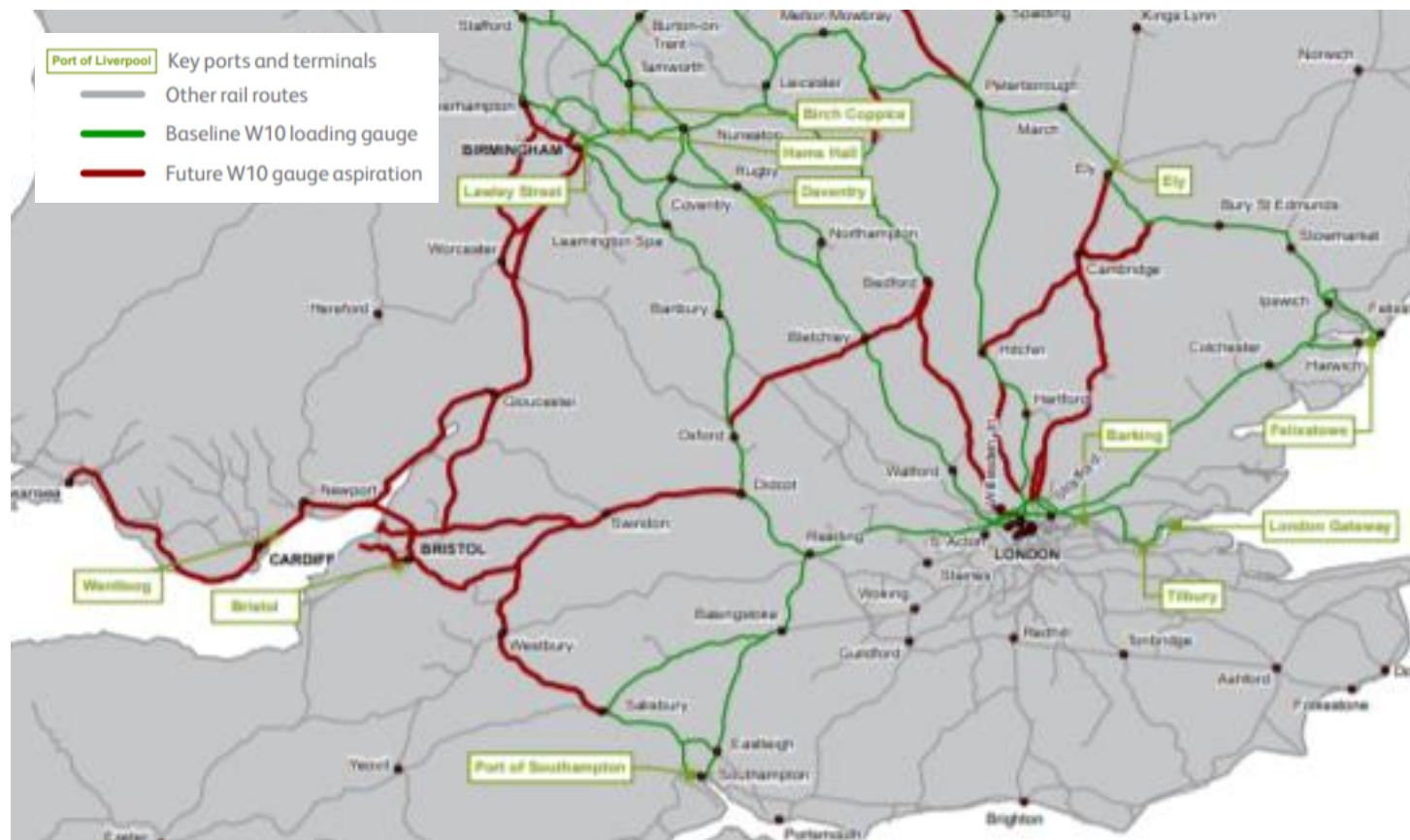
Source: BBC

Freight is very reliant on highways and rail freight is losing ground.

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 timetable paths.

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, 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 right). Network Rail aspires to create a route between the Channel Ports and the Midlands to address this constraint.

Rail network gauges (2017)



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>

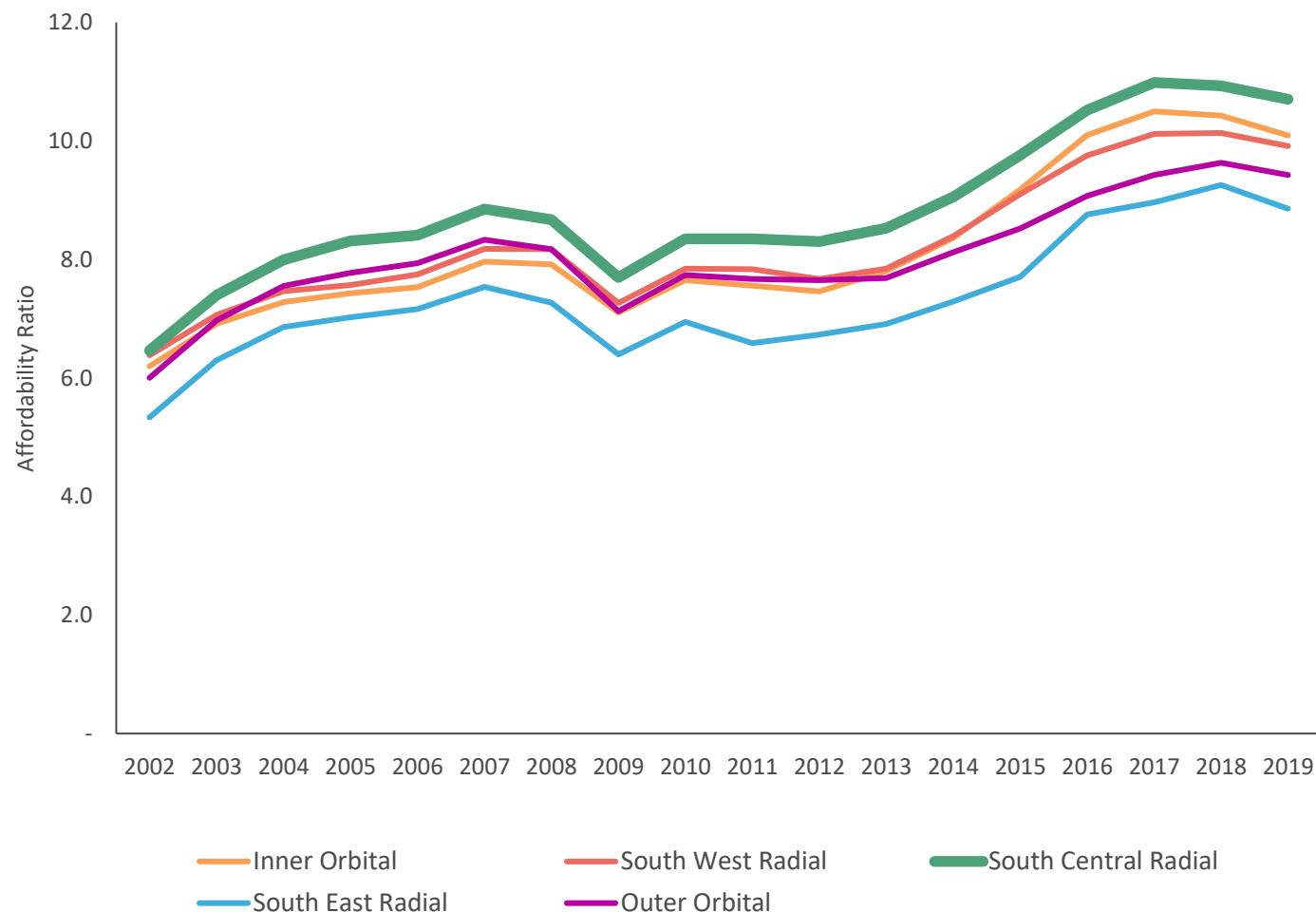
There is a recognised need for housing and communities in the South Central Radial Area – but in the right places, supported by the right infrastructure, and planned to deliver sustainable travel outcomes.

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 a possible 360,000 new residents (see Figures 2.4 and 2.5 in Part 2) there may be a need for additional housing and employment – and this is planned. 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, employment sites, and transport hubs.

Affordability of housing in the South Central Radial Area (from Figure 1.5)



5 The area's economy is too reliant on a small number of industrial sectors

The area's economy is not growing as fast as other areas of the South East and appears to rely too much on a small number of industries.

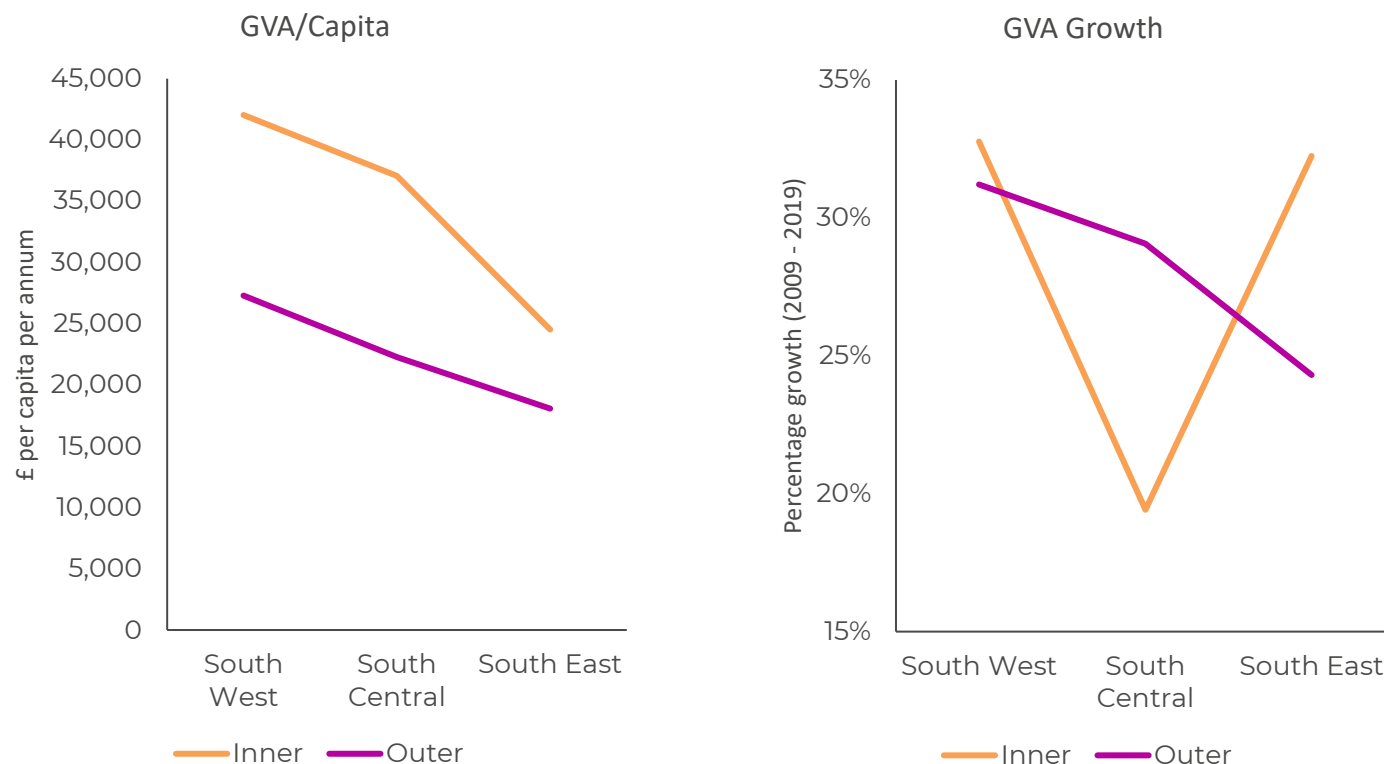
In 2018, TfSE identified industrial sectors that were deemed to be high value, high growth industries. Employment by each key sector in the South Central Radial Area is listed in Table 1.1 in Part 1.

This data identified a high reliance on the Financial Services and Aviation industries. Respectively, 91% and 90% of total jobs in the South East in these sectors are in the South Central Radial Area.

The COVID-19 pandemic has highlighted the risks of relying on a particular industry. The challenges facing the aviation industry are well document. Figure 2.9 in Part 2 highlights the portion of the workforce in the Gatwick Diamond area that participated in the furlough scheme as a result of pandemic travel restrictions.

Furthermore, there are concerns about productivity and growth gaps in the area. The data presented in the figure to the right highlights relatively low GVA growth in the area, particularly in the north.

Varying socioeconomic outcomes in different areas of South East England



Source: ONS (2008 and 2018)

Rural communities in the South Central Radial Area have significantly poorer access to public transport, Mobility as a Service providers, and high-speed broadband compared to urban areas.

This means it will be harder for rural communities to:

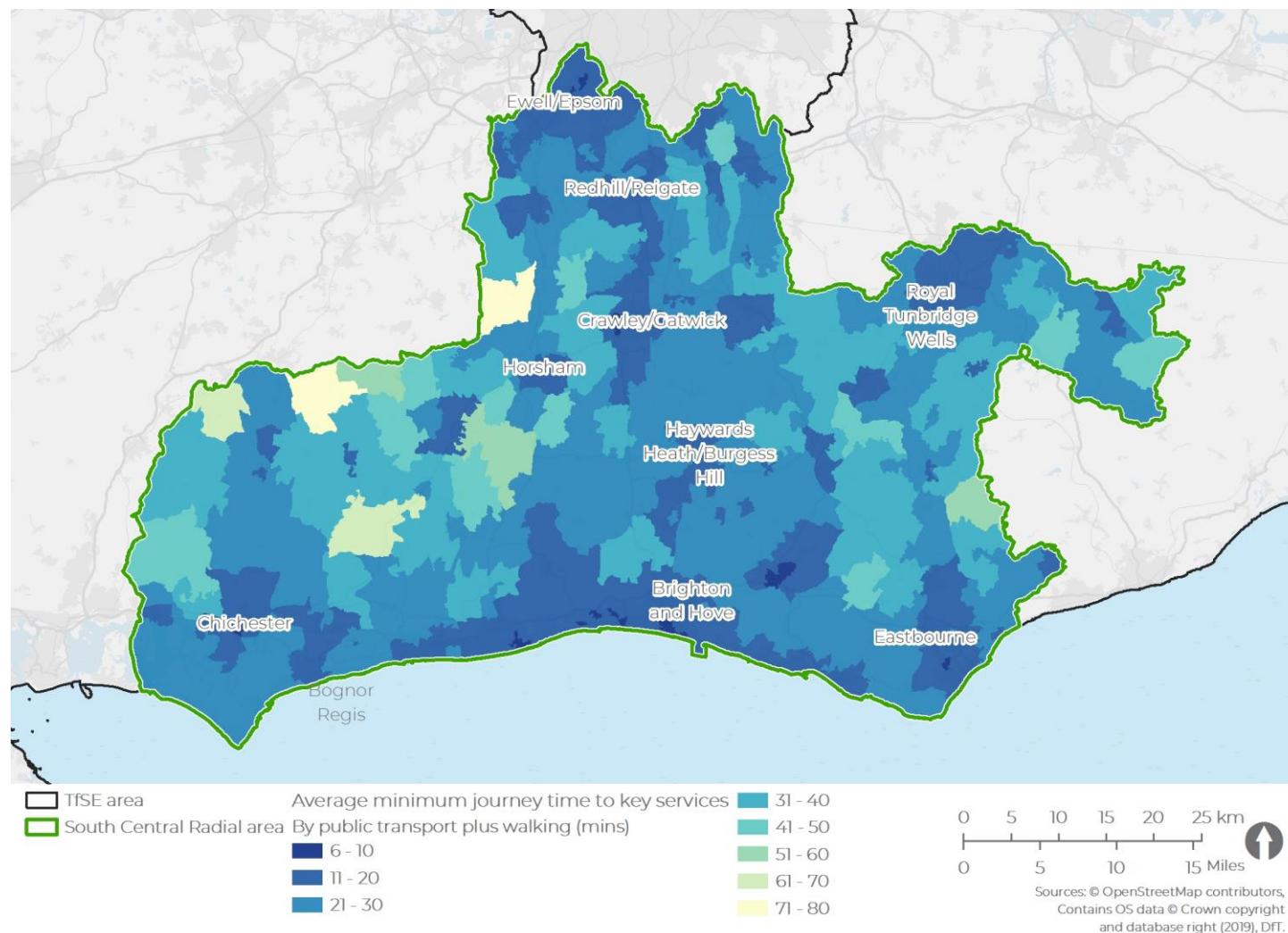
- Work remotely;
- Access future mobility technologies;
- Access emerging Mobility as a Service services;
- Access public transport networks; and
- Attract businesses that rely on technology and/or public transport.

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 South Central Radial Area.

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

Public Transport connectivity (from Figure 1.19)



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 the table to the right shows, there is a need for more progress.

Other examples where improvements should be considered include:

- Improving the accessibility of bus fleets and rail rolling stock;
- 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 as their primary form of mobility); and
- Making public spaces (e.g. town centres) more accessible.

Disability provision at train stations (% stations offering provision at January 201)

	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

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

Sustrans were recently forced to downgrade sections of the National Cycle Network (NCN) in this area (e.g. between Crawley and Brighton) due to the deteriorating safety risk on cycling corridors in these areas.

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

The South Central Radial Area is a popular area for leisure cycling. Several London 2012 cycling events were held at the northern end of the corridor, and similar events such as Ride London have been held in the area in the past. The area is also home to the international cycleway “Avenue Verte”, which follows a long route and is supported by variable quality infrastructure (e.g. significant sections are unpaved and/or unlit).

Cycle networks in the South Central Radial Area



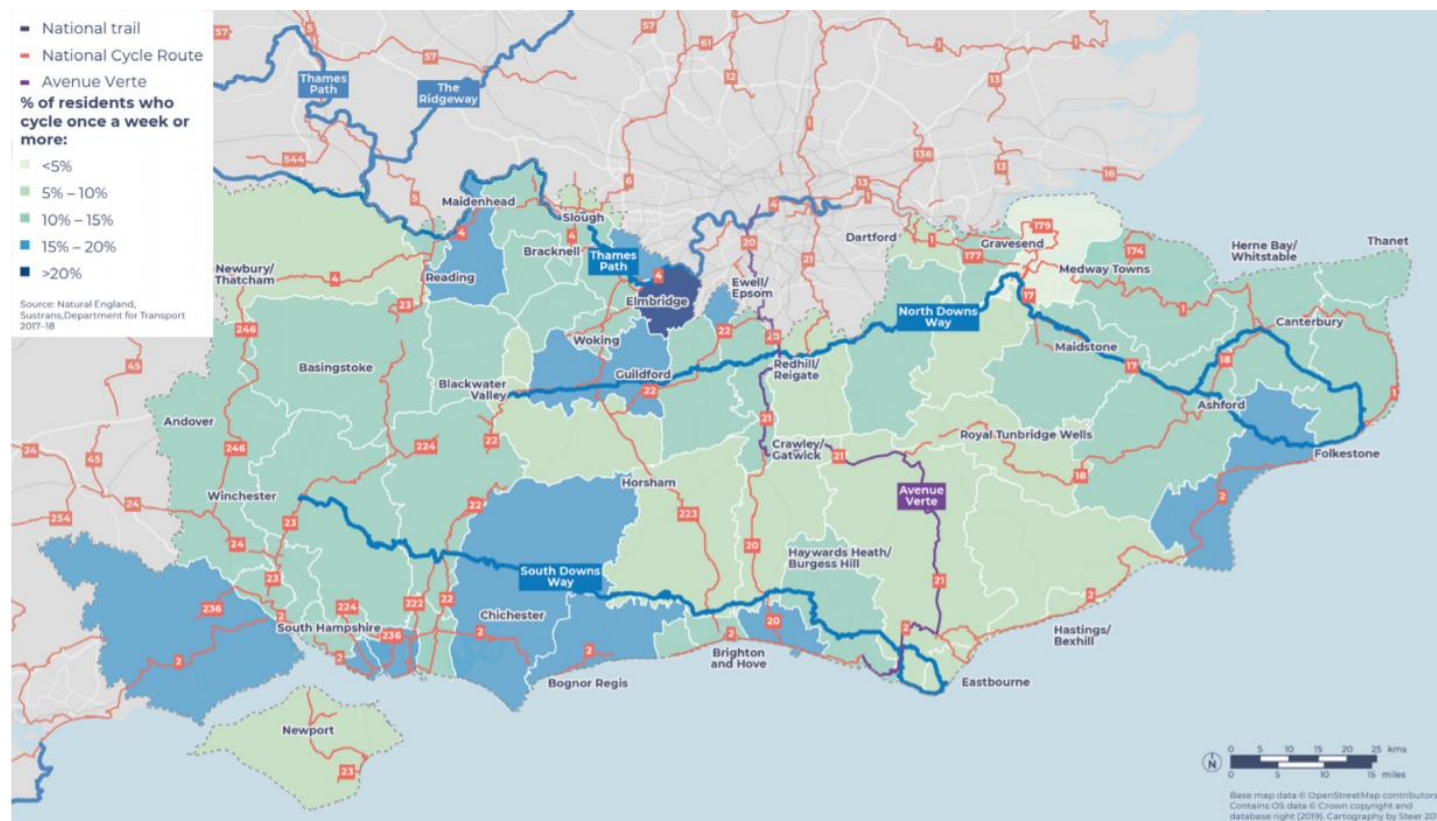
Source: Openstreetmap (2021)

Active travel is low in the South Central Radial Area, especially for shorter trips and journeys to work.

The figure to the right, 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 Horsham, Mid Sussex, and Tandridge districts. 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, but the infrastructure is not available to support this ambition. Furthermore, 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.

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



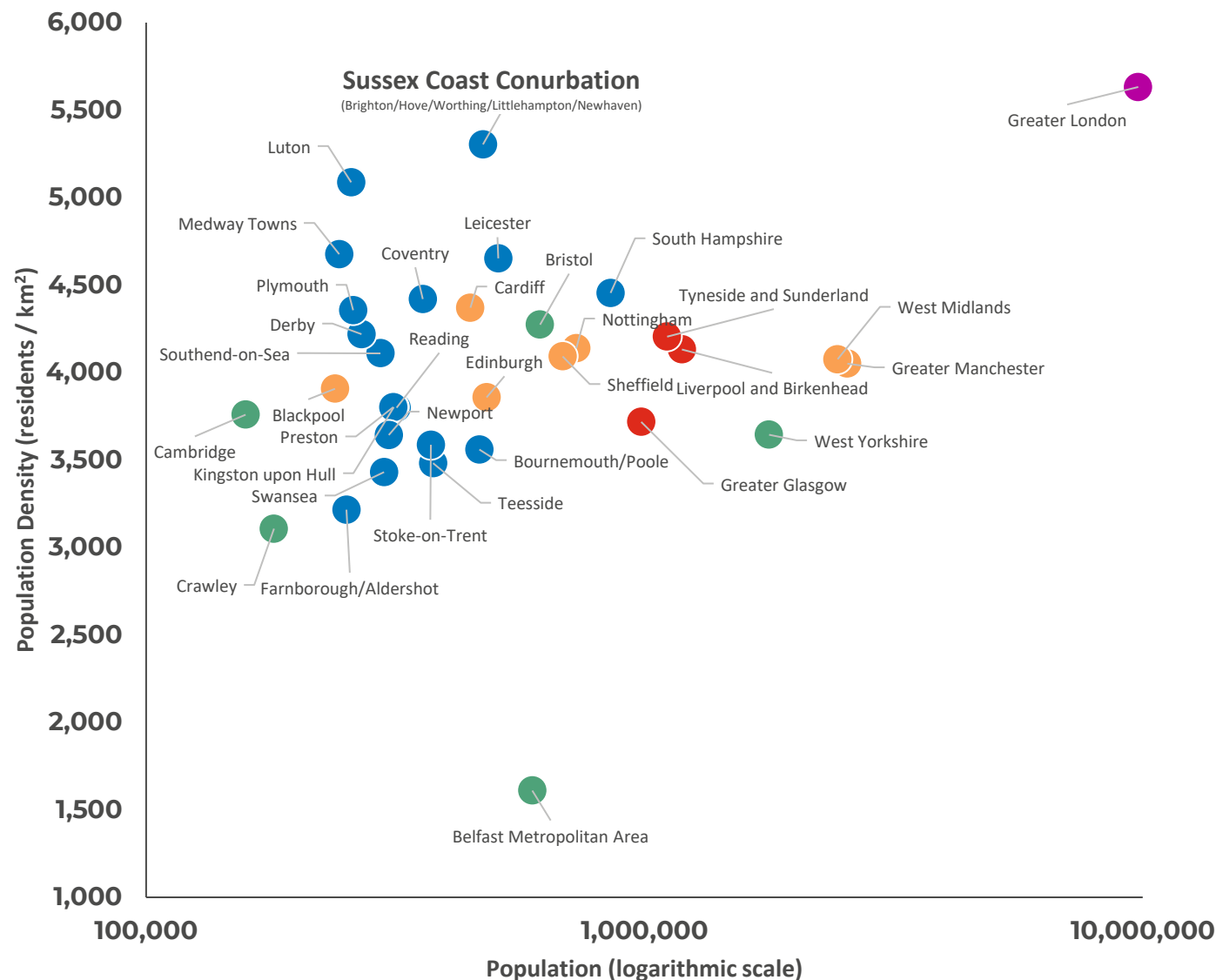
The Sussex Coastal conurbation – the 2nd largest conurbation in the South East – does not have the mass transit systems it needs to thrive.

While the Brighton/Hove/Worthing/Littlehampton/Newhaven (“Sussex Coast”) built up area is served by a good bus network, it is not served by a mass transit system such as Light Rapid Transit, Bus Rapid Transit, or underground system.

This means the conurbation relies on conventional buses, which deliver slower journeys than alternative systems, and suburban rail services, which are relatively infrequent, are not available to all, and do not adequately serve commercial centres.

This means residents in these conurbations do not benefit from the accessibility, connectivity, and quality of mobility that is available in other cities. This forces residents and business to rely on the car and/or relatively slow (i.e. <8mph average speed) bus service, which undermines the competitiveness of the area's largest cities and the quality of life of its residents.

Mass transit systems in major conurbations in the UK



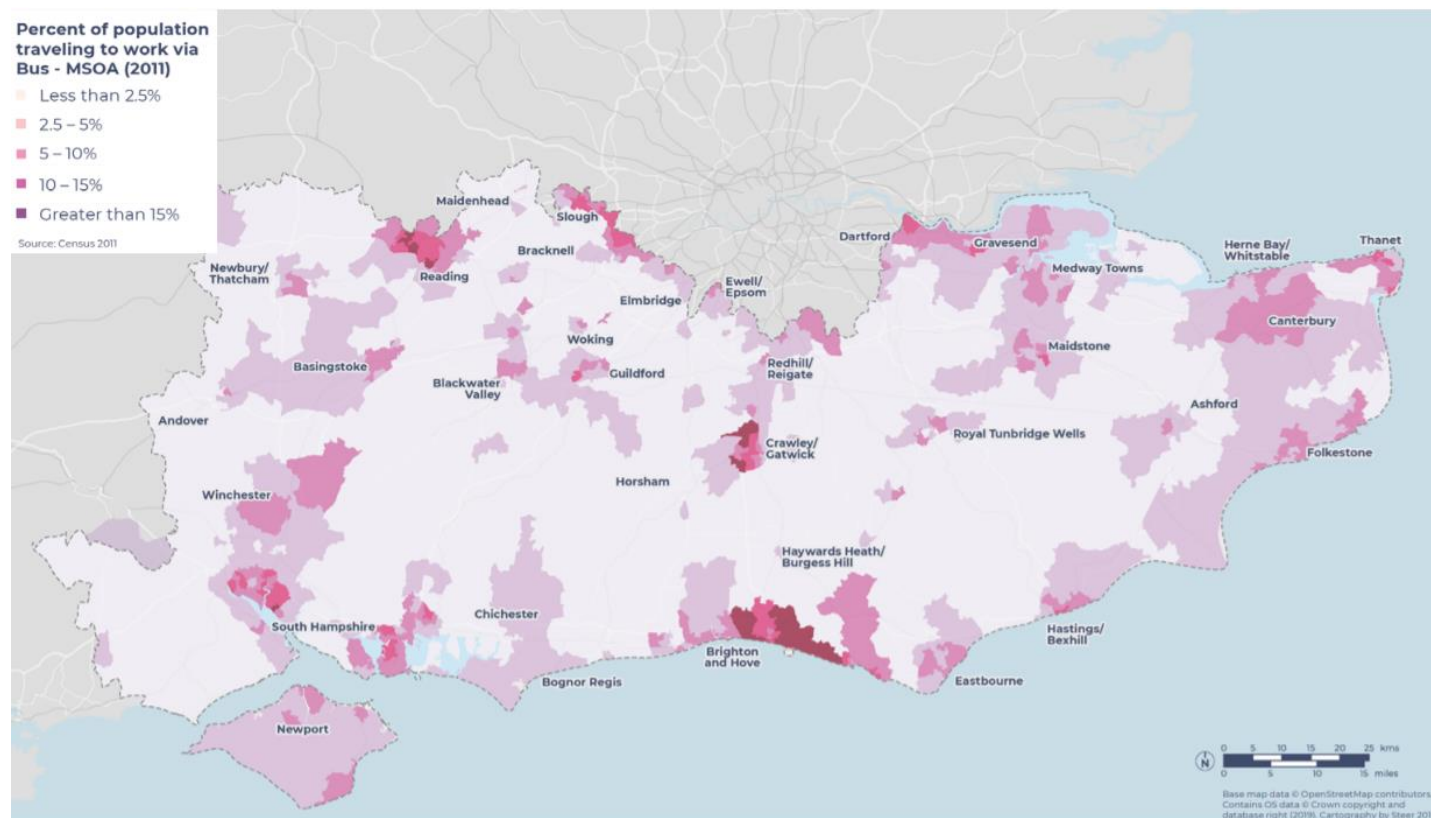
Bus patronage is low and (other than in Brighton and Hove) is declining.

The figure to the right shows the percentage of the population travelling to work by bus at the time of the 2011 census. **Figure 1.21** (see Part 1) 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 (bus patronage has broadly been stable in West Sussex over this 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 Burgess Hill/Haywards Heath and Horsham.

The Fastway network in Crawley and Brighton and Hove bus network point towards the opportunity for bus in the South Central Radial Area.

Bus share of Travel To Work flows



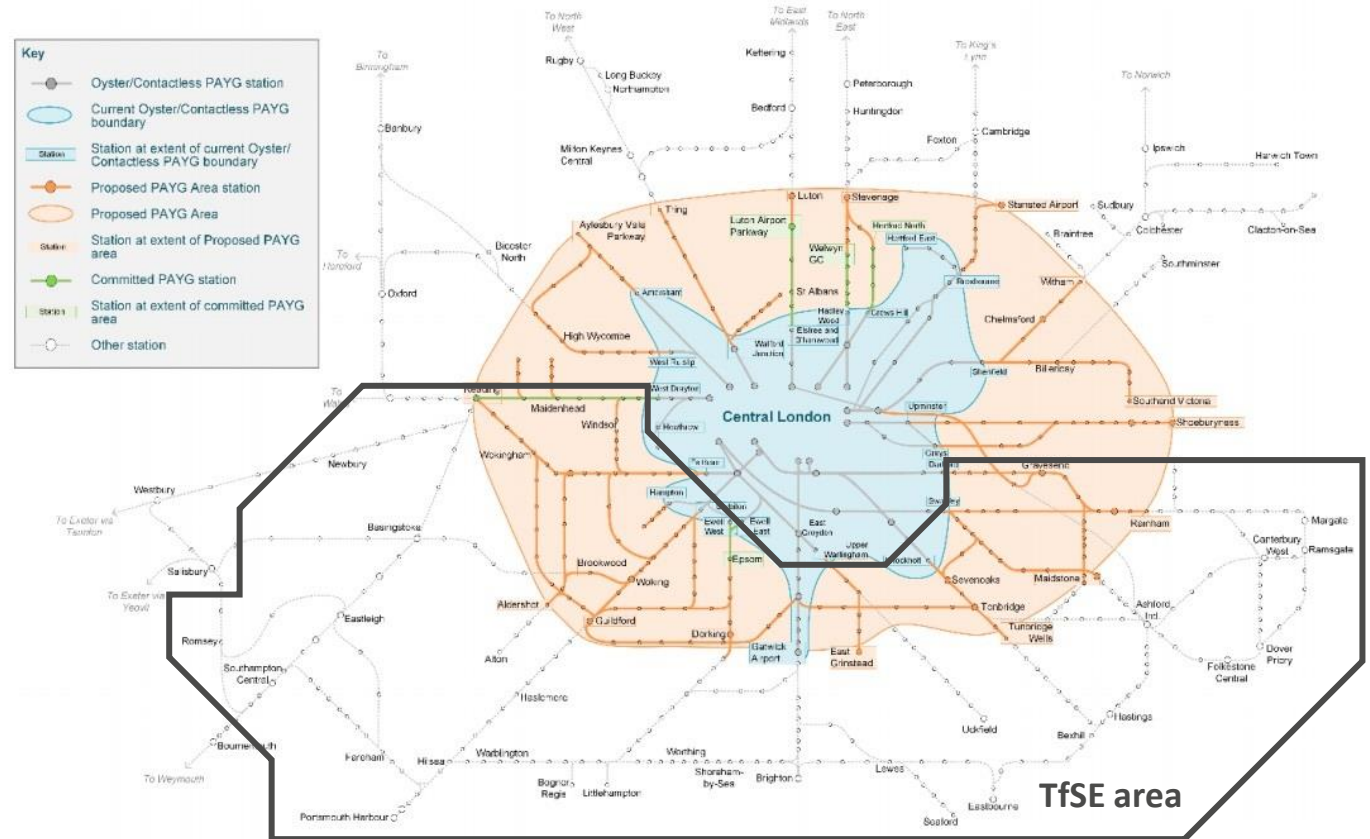
Public transport information and ticketing arrangements are not sufficiently coordinated nor adequately integrated, particularly across transport modes

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 area, there are few examples of:

- Integrated journey planning tools;
- Integrated, multi-modal fares (noting some areas have access to PlusBus);
- Zonal fares systems (e.g. centered on Solent and/or the Sussex Coast conurbations); and
- Integrated, multi-modal payment systems.

All the above makes it harder to plan, pay for, and complete multi-modal journeys in the South East. None of the conurbations in the South East are currently served by dedicated multimodal planning apps – although this is a fast-developing area of interest and third parties may provide a solution soon.

Extent of London Pay-As-You-Go payment systems in South East England



Source: Department for Transport "Pay-as-you-go on rail" consultation (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776998/payg-rail-consultation-doc.pdf

13 For many people, public transport fares are too high and too complicated

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 Gatwick 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).

Real terms increase in costs of public transport and motoring

Retail Prices Index (RPI): Bus and coach fares, rail fares and motoring expenditure, 1987–2019²⁵



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

Almost every passenger rail service passes through a single bottleneck at East Croydon.

According to Network Rail, the Croydon area is the busiest, most congested and most complex part of the country's rail network.

The lack of capacity at East Croydon station and the complex series of junctions north of Croydon, the Selhurst triangle, delays trains across the Brighton Main Line and the wider network every time an incident occurs.

It also means there is no capacity to run more trains to meet future passenger growth, which will lead to overcrowding in the years ahead unless action is taken.

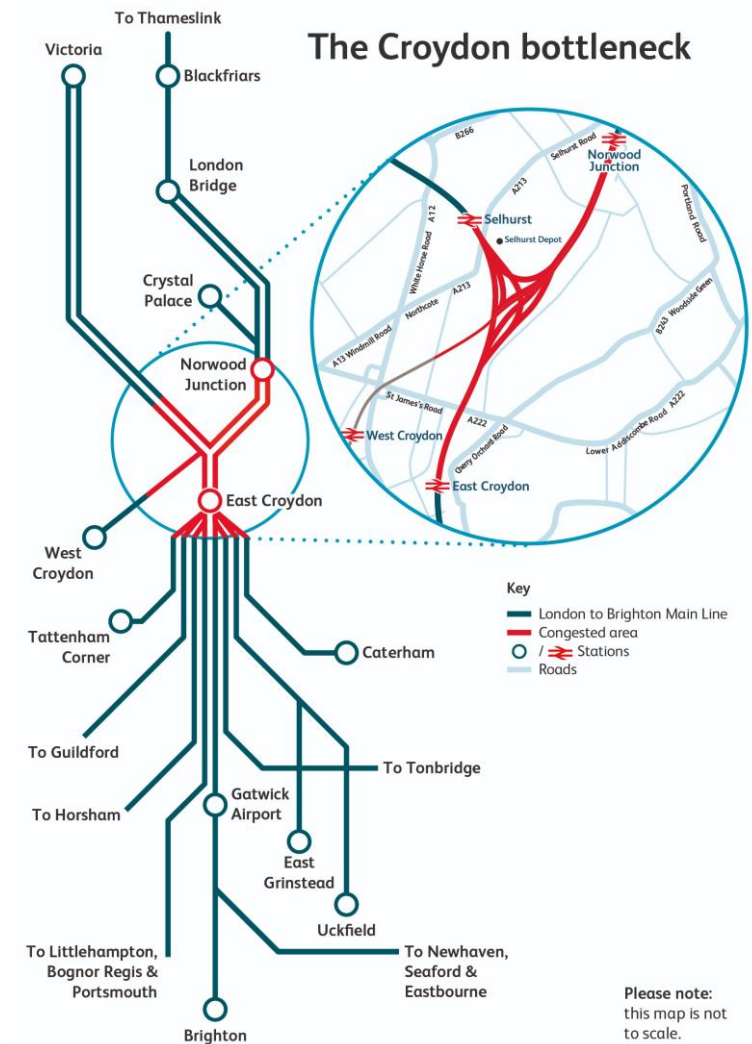
The key bottlenecks in the area include East Croydon Station (which only has six platforms), Windmill Bridge (which only allows five tracks), and the Selhurst Triangle (which includes flat crossings).

There are also resilience challenges further down the Brighton Mainline, notably for sections where tracks reduce from four to two and around Gatwick Airport.

Croydon Bottleneck



The images presented above (also from Network Rail) illustrate proposals to address many of the issues highlighted in this Problem Statement.



Source: Network Rail

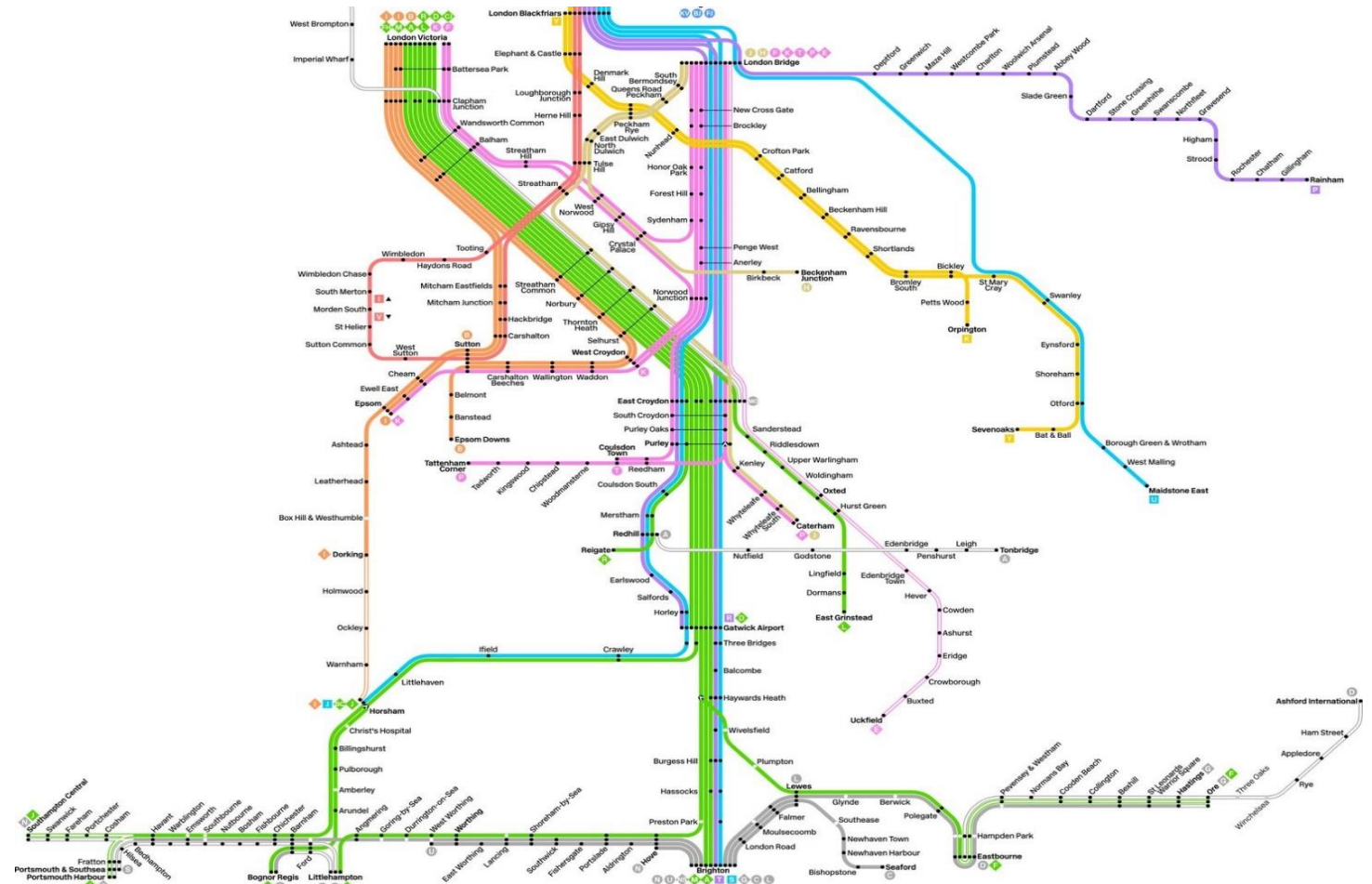
15 Spare capacity is limited on the Brighton Main Line

Capacity is limited on the Brighton Mail Line, and the allocation of this capacity does not meet the needs and/or aspirations of all the area's stakeholders.

The railway timetable is designed around constraints on the Brighton Main Line to ensure that services operating from locations such as Littlehampton and Brighton to London (and beyond) are timed to accommodate capacity bottlenecks closer to London. The rest of the timetable has to “fit around” whatever is left over from this capacity allocation process. The figure to the right illustrates the challenges planners face in balancing radial and orbital journeys on the Brighton Main Line.

In recent years, several “paths” (e.g. “slots”) that used to support cross country services (e.g. Portsmouth/Brighton – Reading/Midlands/North) have been reassigned to radial services. This has slowly eroded the South Coast's connectivity to the rest of the UK.

Thameslink, Southern and Great Northern franchise services



Source: Project Mapping <http://www.projectmapping.co.uk/Reviews/Resources/TSGN%20Travelling%20Wolf.jpg>

Connectivity is relatively poor for communities served by the Arun Valley, Coastway, and Oxted lines.

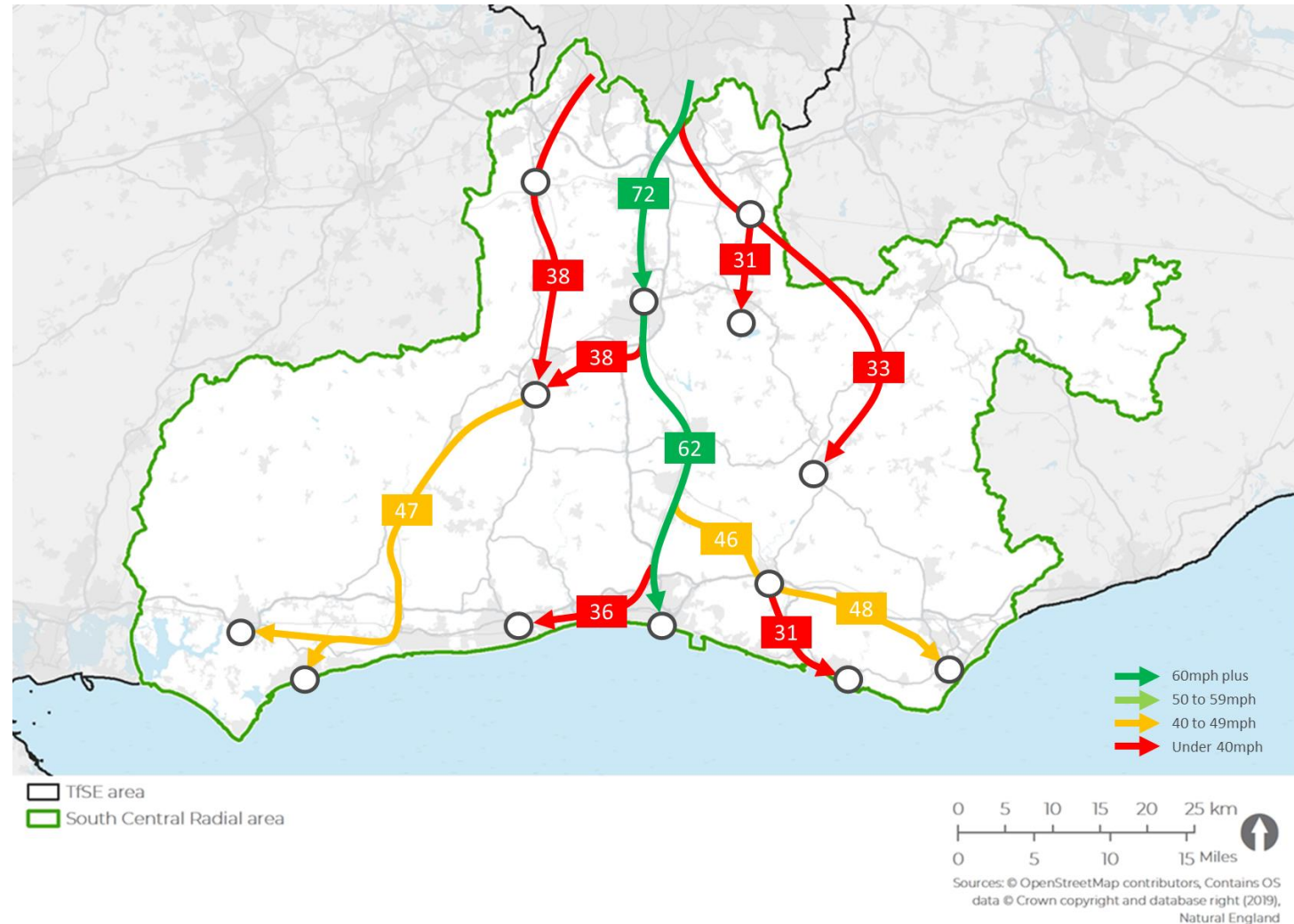
The differences in connectivity provided is especially stark when compared to the excellent connectivity provided by the Brighton Main Line.

The slower speeds off the Brighton Main Line reflect the alignment of the track, signalling arrangements, and the passenger rail service calling pattern.

Furthermore, there are gaps in the rail network (e.g. Uckfield - Lewes) and poor integration between South Coast rail services and local bus services. This is particularly evident in fares, retail, and ticketing (integrated tickets and zonal fares are only available for London services).

The difference in rail connectivity means places like Eastbourne and Bognor Regis may need to “work harder” to attract investment compared to better connected Major Economic Hubs such as Brighton and Hove. This may explain why areas like Bognor Regis have generally weaker socioeconomic outcomes than Brighton.

Typical average speeds on the South Central Radial Area's railways



Source: Steer analysis

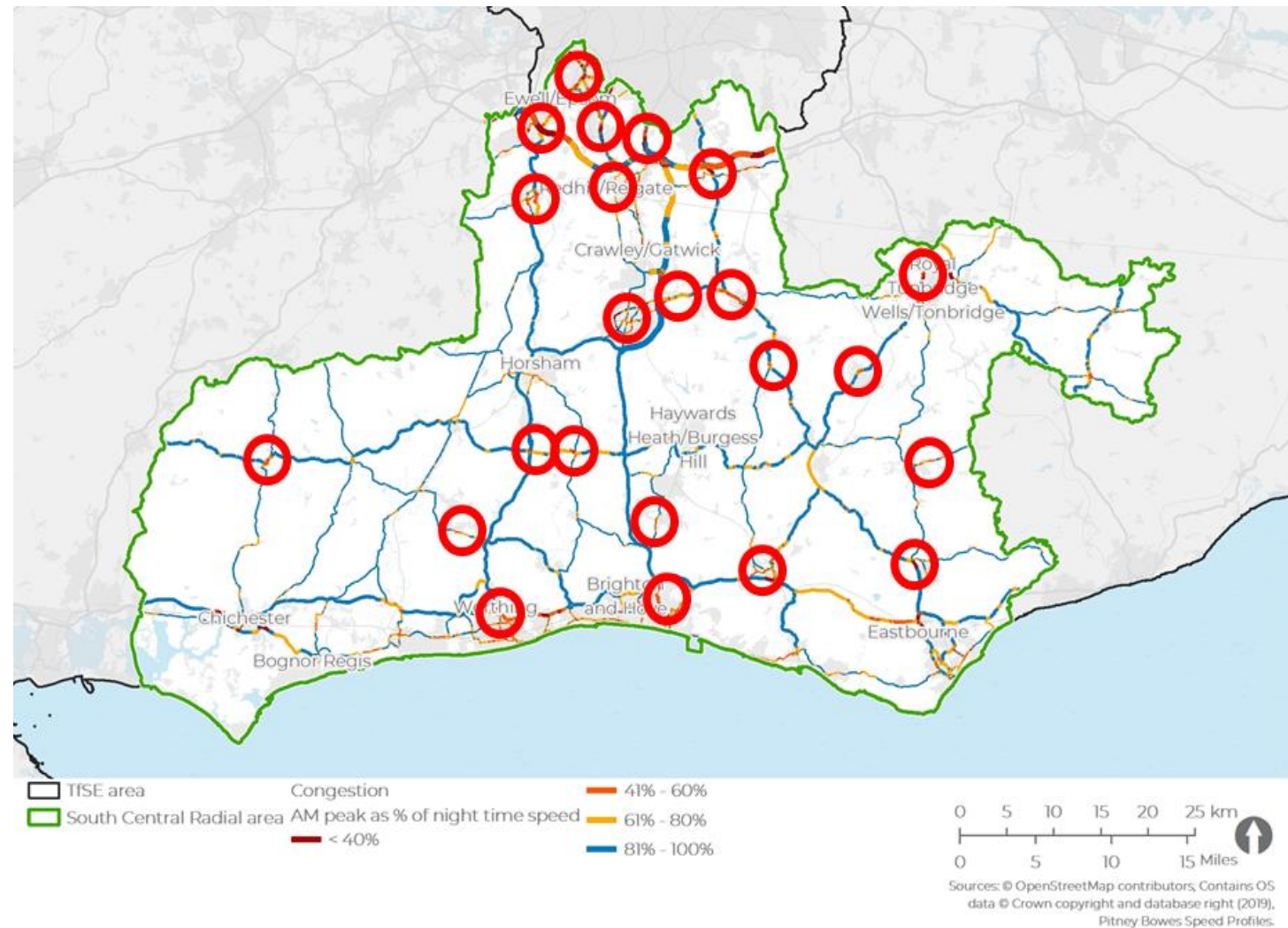
These hotspots can significantly blight an area’s economy, environment, and quality of life for residents, businesses, and visitors.

The figure to the right, which is based on Figure 1.15 in Part 1, shows congestion hotspots on the highway network in the South Central Radial Area.

Congestion, road safety, and air quality hot spots tend to arise at the same location. This is often where highway infrastructure is not adequate to accommodate the traffic demand placed upon it. In the South Central Radial 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.

Congestion hot spots in the South Central Radial Area



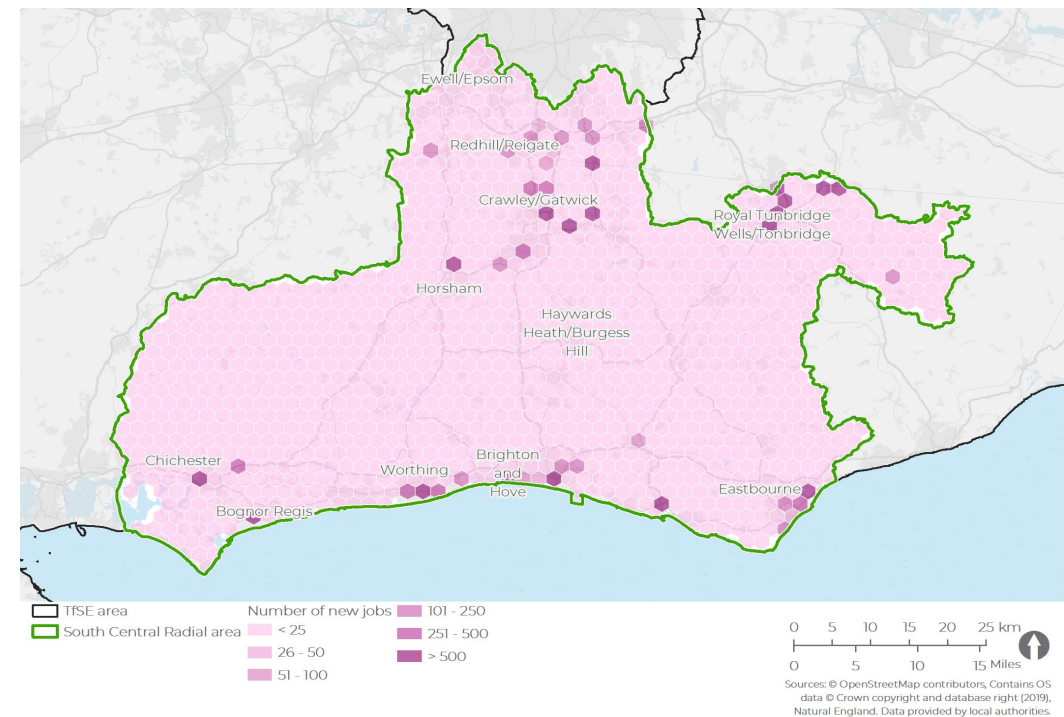
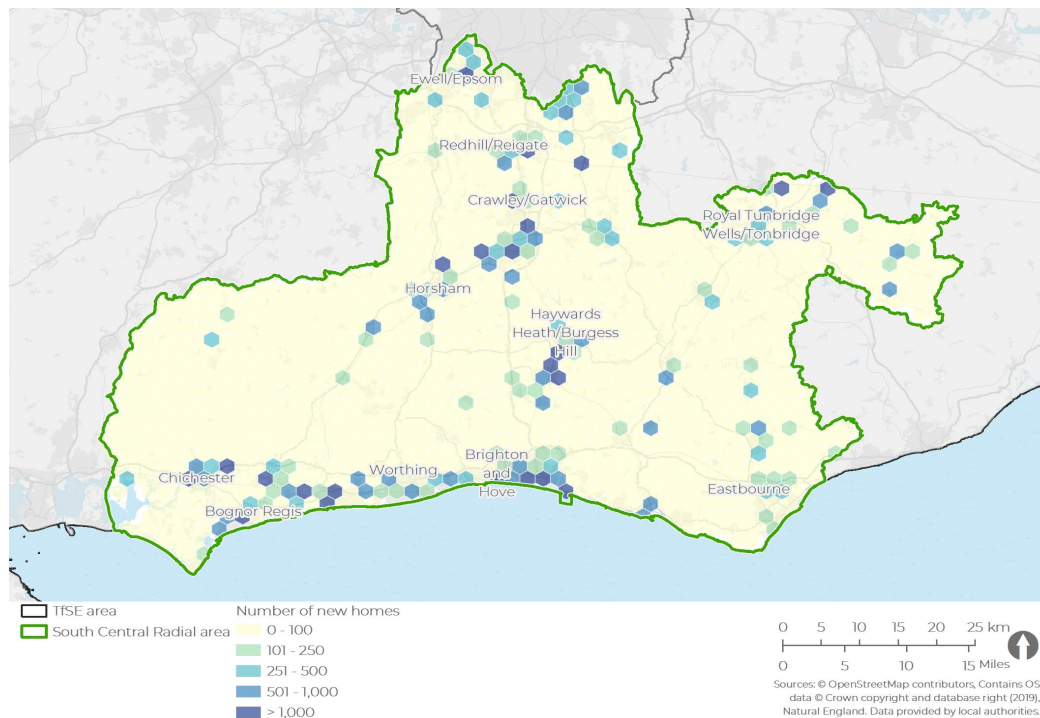
Building on Problem Statements 4 and 17, planned housing growth will only serve to add pressure to the highway network.

The figures below (from Part 2 of this report) show the housing and employment growth planned for this area.

The area is expected to accommodate significant housing growth, particularly in the Horsham, Haywards Heath, and Burgess Hill areas. The pattern of development and the apparent imbalance of housing growth versus job growth (the latter is expected to be more concentrated on the Sussex Coast and in the Gatwick Diamond area)

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 highlighted in the previous page could worsen if not action is taken to mitigate these impacts.

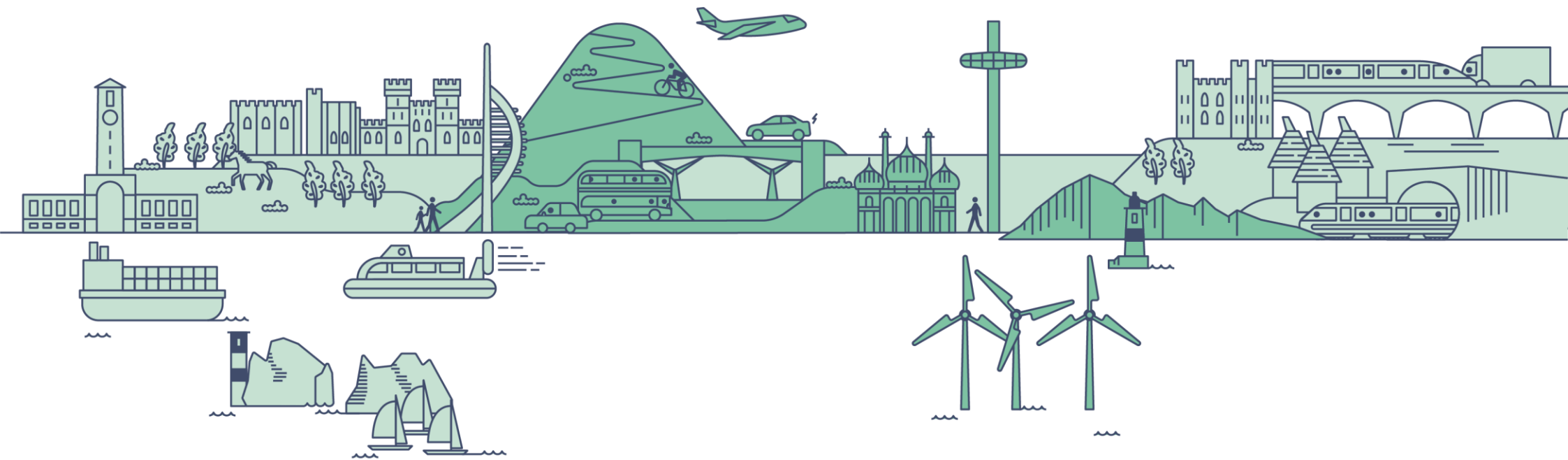
Housing allocations in the South Central Radial Area





Part 4

Objectives



Part 4a

Vision

Vision

TfSE's Transport Strategy for the South East sets out an ambitious vision for a sustainable, high performing, net-zero carbon transport system. We have applied this vision to the South Central Radial Area to develop a vision statement for this area.

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.

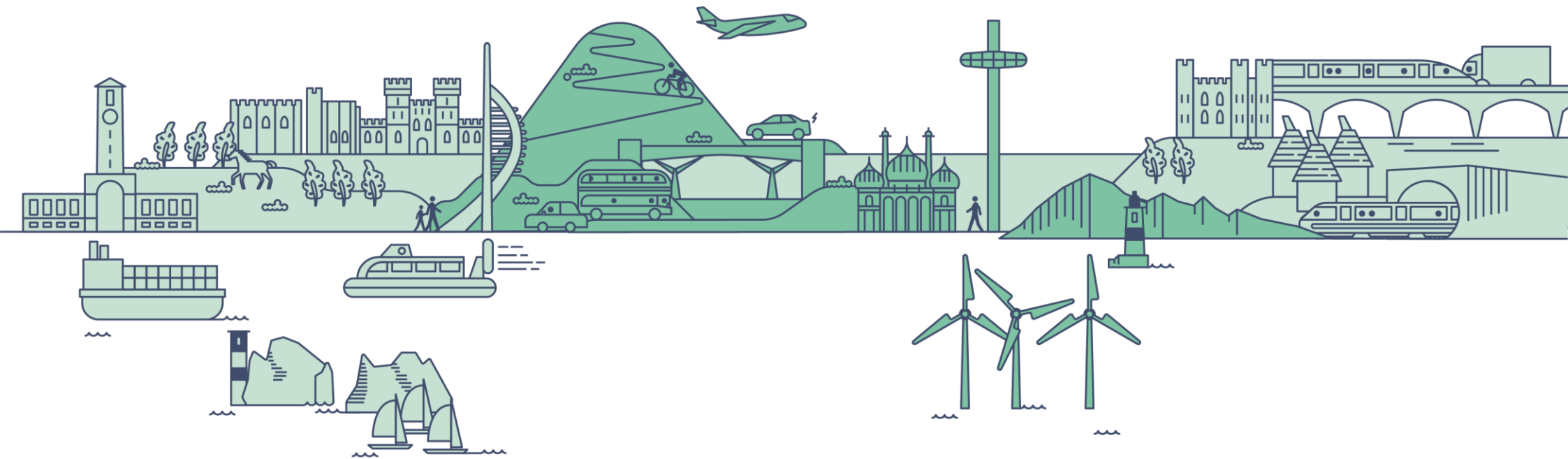
South Central Vision Statement

The South Central Radial Area 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 the South Central Radial Area's people to develop successful businesses.

The transport networks supporting the South Central Radial Area will be reliable, resilient, well connected, and accessible. They will be aggressively de-carbonised to deliver a net-zero carbon economy by 2050.

The communities of the South Central Radial Area will be planned provide affordable housing for all and will be designed to promote sustainable travel outcomes.



Part 4b

Objectives

Objectives (1 of 2)

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

Economy	Society	Natural and Historic Environment
<p>The South Central Radial 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:</p> <ul style="list-style-type: none">• Boosting productivity through better skills matching, knowledge sharing and agglomeration;• Improving transport network efficiency, reliability, and resilience;• Ensuring digital and energy networks can meet future transport needs;• Reducing costs for businesses; and• Attracting investment in high growth, high value opportunities.	<p>The South Central Radial Area’s transport systems will enable better and more equitable socioeconomic outcomes:</p> <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;• Ensuring that interventions are suitable for all users including the elderly and individuals of reduced mobility and other additional needs; and• Enabling deprived communities to attract investment and achieve more equitable socioeconomic outcomes.	<p>The South Central Radial Area’s transport systems will protect and enhance the natural and historic environment by:</p> <ul style="list-style-type: none">• Adopting the principles of environmental net gain;• Avoiding interventions that significantly and permanently undermine protected environments, in particular landscape, historic and ecological designations;• Reducing the impact of transport operations on ecosystem services; and• Improving public and active transport access to natural, protected, and historic environments.

Objectives (2 of 2)

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

Climate Change

The South Central Radial 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.

Reliability and Resilience

The South Central’s Radial Area’s economy and transport systems will strengthen its resilience to external shocks by:

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

Sustainable Integrated Planning

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

- Promoting development that reduces the need for residents to travel long distances to access employment, education, services, and transport hubs;
- Promoting development that encourages active travel and public transport over private car;
- Promoting development on and/or near to existing public transport corridors and hubs; and
- Enabling a balance of housing and employment growth to prevent significant imbalances within and between Major Economic Hubs.



Part 4c

Next Steps

Next Steps

This report provides a summary of the work undertaken in the second of the five stages underpinning the South Central Radial Area Study.

Figure 4.1 shows the stages and steps that are being delivered for this study.

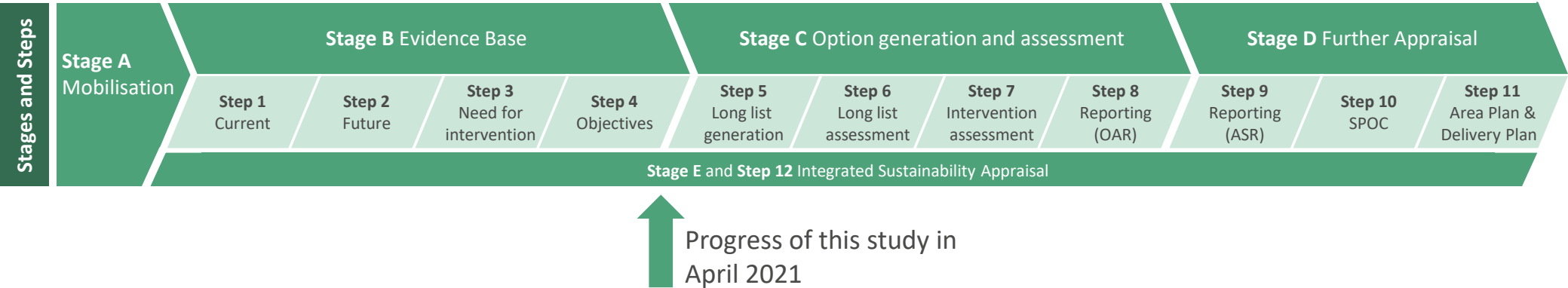
This report concludes **Stage B**, which provides a common understanding of the current and future context, demonstrates a need for intervention in the area, and defines objectives for the South Central Radial Area Study.

The next stage for this study is **Stage C**. The purpose of this stage is to generate a long list of options in response to the SWOCs and need for intervention identified in Stage A, describe them in a consistent way, and assess them informed by the evidence base, against the criteria included in the Multi Criteria Assessment Framework (MCAF) tool that was developed for the Transport Strategy. This stage is expected to mobilise in April 2021 and report in June/July 2021.

The purpose of **Stage D** will be to produce outputs to make the case (to government and others) for investment in the South East’s transport networks. This will mobilise in the autumn 2021.

Finally, to ensure that each area study meets the vision, goals and priorities of the Draft Transport Strategy, an Integrated Sustainability Appraisal (ISA) will be developed for each of the five Area Studies – shown below as **Stage E** – which will also report by the end of 2021.

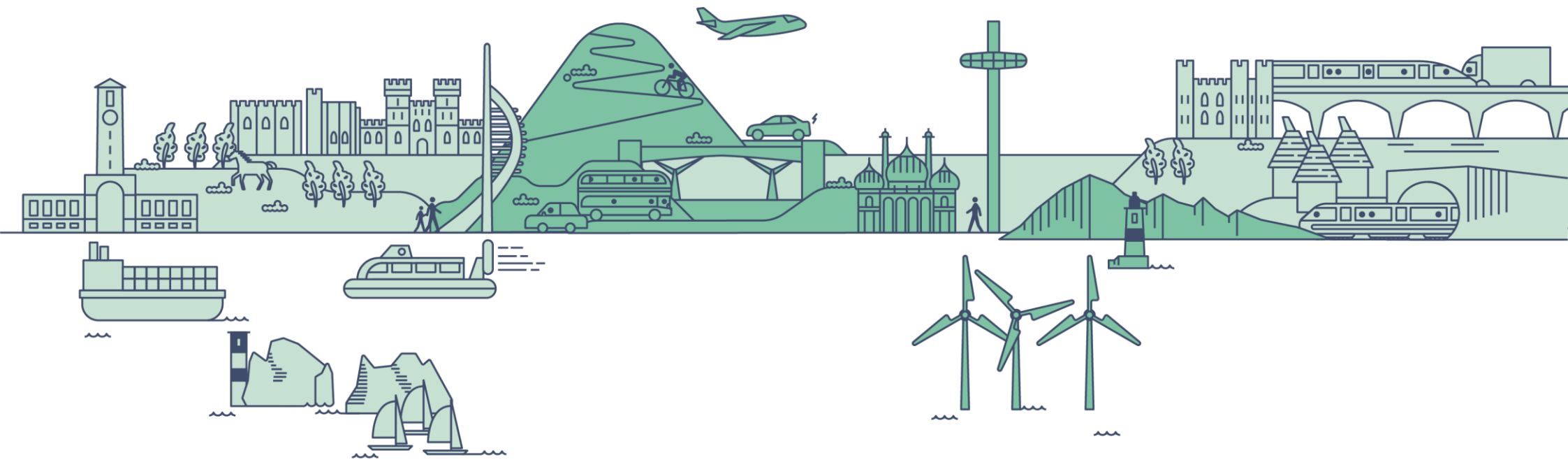
Figure 4.1: Overview of the South Central Radial Area Study stages and steps





Part 5

Appendices



Appendix A

Policy Review

Policy Context Tables

This section summarises the policy documents that have been reviewed for this study, and are presented as follows:

- 1. National Transport Policy
- 2. National Non-Transport Policy
- 3. Sub-National Transport Policy
 - i. Local Transport Plans
 - ii. Other Transport Policy
- 4. Sub-National Non-Transport Policy
 - i. Coast2Capital LEP Policy
 - ii. Other Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Bus Back Better – National Bus Strategy for England (2021)	The strategy sets out the vision outlining how to deliver better bus services for passengers across England, through ambitious and far-reaching reform of how services are planned and delivered. The strategy aims to revolutionise the customer experience, promoting a simplified ticketing system, integration with other modes and supporting the goal for an inclusive transport system that attracts older and disabled people to use buses. The strategy sets out a roadmap to improve services for passengers and communities, urban and rural, and be fully informed by local needs, by increasing the role of Local Transport Authorities in designing and operating local bus services. Aligned with other national decarbonisation policy, the strategy also sets out an ambitious road map to a zero-emission bus fleet.
National Infrastructure Commission – Natural Capital and Environmental Net Gain (2021)	This document outlines the two-way relationship between infrastructure and natural capital. It highlights how infrastructure can have both a positive and negative impact on natural capital assets such as fresh water and clean air as well as how changes in the environment can increase costs of infrastructure (such as flooding). Infrastructure developers should consider the impact of infrastructure development on natural capital assets and take the opportunities to contribute to the environment and biodiversity as part of development. Infrastructure projects should target environmental net gain, ensuring that infrastructure developers leave the environment in measurably better state than they found it.
Decarbonising Transport, Setting the Challenge (2020) Department for Transport	<p>Provides an overview of transport modes and their current contributions to carbon emissions. It then summarises the current policies which are in place to help them decarbonise, and provides forward projections of how effective these policies will be for bringing the transport network to net zero. The plan also considers the importance of incorporating ‘place-based’ solutions, providing geographically specific answers to the challenge. Ultimately, the policy comes up with six strategic priorities which reflect ‘the core areas we believe plans are needed for delivery of the TDP [Transport Decarbonisation Plan]’, which are:</p> <ul style="list-style-type: none">• Accelerating modal shift to public and active transport – making public transport and active travel the first choice for daily activities, reducing car use, and exploring how to make use of how to use vehicles differently.• Decarbonisation of road vehicles – requiring major changes to the vehicles we drive and the way we use our roads, driven by investing in innovative technology solutions and developing sustainable supply chains.• Decarbonising how we get our goods – transforming ‘last’ mile deliveries, ensuring an integrated, clean and sustainable delivery system, making use of digitally-enabled solutions, data-sharing and collaborative platforms.• Place-based solutions for emissions reduction – understanding where, how and why emissions occur in specific locations, will enable development of a tailored response, addressing how management at a local level can best address emissions at a local level.• UK as a hub for green transport technology and innovation – utilising the UK’s world-leading scientists, business leaders and innovators, positioning the UK as an internationally recognised leader in environmentally sustainable technologies.

Policy Context Tables - National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Traction Decarbonisation Network Strategy (2020)	<p>TDNS has been established to recommend which of three traction technologies (battery, electric and hydrogen) would need to be deployed where and when on the GB rail network in order to remove diesel trains and support the end of CO2 emissions from rail. Network Rail have calculated a need to provide:</p> <ul style="list-style-type: none"> - 11,700 STKs of electrification - Battery operation over 400 STKs of infrastructure. - Hydrogen operation over 900 STKs of infrastructure. - 2,300 STKs where there is no clear technical choice.
Gear Change: A Bold Vision for Walking and Cycling (2020) Department for Transport	<p>This policy document sets out how the government plans to make a step change in walking and cycling over the coming years. It comes as an update to the 2017 Cycling and Walking Investment Strategy and was released after the onset of the COVID19 pandemic, looking to capitalise on the dramatic changes to travel behaviours it has caused. The strategy provides several key reasons for making this change, ranging from improvements to public health, to addressing inequalities, to tackling congestion, to improving air quality, to slowing climate change, and boosting the economy.</p>
Draft Road Investment Strategy 2 (2018) Department for Transport	<p>The Draft Road Investment Strategy 2 (RIS2), published by the Department for Transport in October 2018, sets out the Government's strategic vision for the Strategic Road Network (SRN) – the UK's motorways and principal A-roads – covering the years 2020 to 2025.</p> <p>RIS2 emphasises the need to ensure the SRN is safe, serviceable, and free-flowing. It also highlights the need for the SRN to be 'smart' and build on new technologies, increase the level of accessibility and integration with the wider transport network (including the newly identified Major Road Network), and demonstrate how the SRN supports economic development and how investment can improve the environment.</p>
Inclusive Transport Strategy (2018) Department for Transport	<p>Government wants people with disabilities to have the same access to transport as all other users by 2030. The document outlines a wide ranging series of interventions which it will employ to achieve this aim, from raising awareness to providing better physical infrastructure. It also describes how the government will hold itself accountable for the delivery of this strategy, including processes for monitoring and evaluation specifying key output indicators.</p>
Clean Growth Strategy (2017) UK Department for Business Energy and Industrial Strategy	<p>Outlines the government's method for ensuring that the UK continues to grow economically, whilst reducing its emissions. The strategy sets out how £2.5bn of funding will be invested by the government to support low carbon innovation from 2015 to 2021. The strategy notes that changes to the transport network will be fundamental for reducing emissions and describes in depth how it expects to encourage a shift to low carbon transport.</p>
The Clean Growth Strategy (2017)	<p>This Strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of "clean growth", i.e. deliver increased economic growth and decreased emissions.</p> <p>Key Policies and Proposals in the Strategy:</p> <ul style="list-style-type: none"> • Develop world leading Green Finance capabilities; • Develop a package of measures to support businesses to improve their energy productivity, by at least 20 per cent by 2030; • Improving the energy efficiency of our homes; • Rolling out low carbon heating; • Accelerating the shift to low carbon transport; • Delivering clean, smart, flexible power emissions; and • Enhancing the benefits and value of our natural resources

Policy Context Tables - National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Transport Investment Strategy (2017) Department for Transport	<p>The Transport Investment Strategy, published in July 2017 by the Department for Transport, describes the UK government's priorities for investment in transport. These are:</p> <ul style="list-style-type: none"> • To create a more reliable, less congested, and better-connected transport network that works for the users who rely on it. The TIS notes UK transport systems are ageing and are facing increasing demands. In many places, the current transport network does not provide the right levels of connectivity for people and business. • To build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities. The TIS notes the UK's national productivity is lower than other G7 countries (e.g. 36% behind Germany), and describes transport as one way of boosting productivity. It is also acknowledged that prosperity hasn't been shared evenly between different places, leaving some communities feeling left behind. • To enhance the UK's global competitiveness by making Britain a more attractive place to trade and invest. Britain is globally renowned as a leader in Research and Innovation, and Scientific fields. Foreign investment in these areas is significant and relies upon good national and international transport links. Retaining the UK's pre-eminence in these areas will require continued investment in the transport network, enhancing "city clusters" and "international connectivity". The TIS therefore views transport as a means of attracting job-creating investment, leveraging the UK's industrial strengths and enabling it to trade with partners with as few frictions as possible. • To support the creation of new housing. The TIS acknowledges parts of the UK face a significant challenge to provide the houses that people need in the places they wish to live. Furthermore, the Government's Housing White Paper recognises that investing in transport infrastructure is one of the best ways of unlocking development in places that are currently poorly served by our transport system.
Road to Growth (2017) Highways England	<p>The Road to Growth sets out Highways England's strategic economic growth plan. It sets out how the economic impact of the Strategic Route Network can be optimised. The paper focusses on the SRN, specifically economic roles which it can play in supporting the economy which are:</p> <ul style="list-style-type: none"> • Supporting business productivity and competitiveness, and enabling the performance of SRN-reliant sectors • Providing efficient routes to global markets through international gateways • Stimulating and supporting the sustainable development of homes and employment spaces
Highways England Route Strategies	<p>"The Government's priorities for investment in the SRN in South East England is described in Highways England's Route Strategies. In total, Highways England has published 18 Route Strategies covering the whole SRN in England, seven of which are relevant for the South East. These are</p> <ul style="list-style-type: none"> • South Coast Central (A23 and A27); and • London Orbital and M23 to Gatwick <p>Each strategy provides a description of the key centres of population and industry, international gateways served by the route, the type of road, and its current performance and constraints. Each strategy outlines options for maintaining, operating and/or enhancing roads. Where appropriate, this could include influencing driver behaviour or considering other modes of travel. "</p>
"Department for Transport, National Policy Statement for National Networks (2014)"	<p>Paragraph 4.38 of the NN NPS states that "New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure."</p> <p>The NN NPS also requires carbon impacts to be considered as part of the appraisal of scheme options, and an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive. It goes on to state that "it is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets."</p>

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
National Planning Policy Framework (2019)	<p>Biodiversity</p> <p>Paragraphs 170 and 174 to 177 of the NPPF require development to protect and safeguard biodiversity, and advise that development should aim to conserve, restore and enhance biodiversity adequately through mitigation or, as a last resort, using compensation.</p> <p>Recognise the wider benefits of ecosystem services; minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. Paragraph 170 of the NPPF requires that planning decisions should be taken to enhance the natural environment by recognising the wider benefits from natural capital and ecosystem services.</p> <p>Further, Paragraph 171 requires plans to take a strategic approach to maintaining and enhancing green infrastructure networks and improving natural capital at a catchment or landscape scale. "</p>
	<p>Landscape & Historic Environment</p> <p>Paragraph 170 of the NPPF requires developments to protect and enhance valued landscapes and recognise the intrinsic character and beauty of the countryside. Paragraph 172 of the NPPF states that great weight should be given to conserving and enhancing landscape and scenic beauty in National parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection. The scale and extent of development within these designated areas should be limited, planning permission for major developments should be refused other than in exceptional circumstances where it can be demonstrated that the development is in the public interest.</p>
	<p>Water Environment</p> <p>"...appropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere".</p> <p>"... if there is no reasonably available site in Flood Zones 1 or 2, then national networks infrastructure projects can be located in Flood Zone 3, subject to the Exception Test. Both elements of the test will have to be passed for development to be consented..."</p> <p>"Any project that is classified as 'essential infrastructure' and proposed to be located in Flood Zone 3a or 3b should be designed and constructed to remain operational and safe for users in times of flood; and any project in Zone 3b should result in no net loss of floodplain storage and not impede water flows".</p> <p>"... impacts on the water environment should be given more weight where a project would have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive".</p>
	<p>Air Quality and Climate Change</p> <p>Paragraph 150 of the NPPF states that "New development should be planned for in ways that:</p> <ul style="list-style-type: none"> • a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and • b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."
	<p>Noise</p> <p>Paragraph 180 state planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life."</p>

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
25 Year Environment Plan (2018)	<p>Biodiversity</p> <p>The 25 Year Environment Plan outlines the Government’s ambition to leave our environment in a better state than we found it and the steps proposed to take to achieve that ambition. The Plan includes ten key targets of which two focus on biodiversity.</p>
	<p>Thriving plants and wildlife:</p> <ul style="list-style-type: none"> • Restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term; • Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits; • Taking action to recover threatened, iconic or economically important species of animals, plants and fungi and where possible to prevent human-induced extinction or loss of known threatened species in England and the Overseas Territories; • Increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042.
	<p>Enhancing biosecurity:</p> <ul style="list-style-type: none"> • Managing and reducing the impact of existing plant and animal diseases; lowering the risk of new ones and tackling invasive non-native species; • Reaching the detailed goals to be set out in the Tree Health Resilience Plan of 2018; • Ensuring strong biosecurity protection at our borders, drawing on the opportunities leaving the EU provides; and • Working with industry to reduce the impact of endemic disease.
	<p>Landscape</p> <p>Goal 6: Enhancing beauty, heritage and engagement with the natural environment, is to “safeguard and enhance the beauty of our natural scenery and improving its environmental value while being sensitive to considerations of its heritage.”</p>
	<p>Climate</p> <p>Goal 7 of the 25 Year Environment Plan, ‘Mitigating and adapting to climate change’, is to “take all possible action to mitigate climate change, while adapting to reduce its impact” by “continuing to cut greenhouse gas emissions including from land use, land use change...” and “making sure that all policies, programmes and investment decisions consider the possible extent of climate change this century”.</p> <p>With regards to the transport sector, the 25 Year Environment Plan identifies four ‘early’ priorities through the ‘Future of Mobility Grand Challenge’. These include encouraging new modes of transport; addressing the challenges of moving from hydrocarbon to zero emission vehicles; and Preparing for a future of new mobility services, increased autonomy, journey-sharing and a blurring of the distinctions between private and public transport.</p>
	<p>Water Environment</p> <p>Goal 2 - Clean and plentiful water:</p> <p>“Improve at least three quarters of our waters to be close to their natural state as soon as is practicable by: [...] Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water”. .</p>

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
National Networks National Policy Statement (NN NPS) (2014)	Noise Paragraph 5.193 states that developments must be undertaken in accordance with statutory requirements for noise. Due regard must have been given to the relevant sections of the Noise Policy Statement for England, National Planning Policy Framework and the Government’s associated planning guidance on noise. Paragraph 5.192 states that the Secretary of State should not grant development consent unless satisfied that the proposals will meet, the following aims, within the context of Government policy on sustainable development: <ul style="list-style-type: none">• Avoid significant adverse impacts on health and quality of life from noise as a result of the new development;• Mitigate and minimise other adverse impacts on health and quality of life from noise from the new development; and• Contribute to improvements to health and quality of life through the effective management and control of noise, where possible.
	Air Quality Paragraph 4.38 of the NN NPS states that “New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.” The NN NPS also requires carbon impacts to be considered as part of the appraisal of scheme options, and an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive. It goes on to state that “it is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets.”
	Soils, waste and materials “Evidence of appropriate mitigation measures (incorporating engineering plans on configuration and layout, and use of materials) in both design and construction should be presented”.
	Landscape and Historic Environment Paragraph 5.149 states that when judging the impact of a project on landscape, the decision is dependent on the nature of the existing landscape likely to be affected and the nature of the effect likely to occur. The project should aim to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.
	Water “... if there is no reasonably available site in Flood Zones 1 or 2, then national networks infrastructure projects can be located in Flood Zone 3, subject to the Exception Test. Both elements of the test will have to be passed for development to be consented...” “Any project that is classified as ‘essential infrastructure’ and proposed to be located in Flood Zone 3a or 3b should be designed and constructed to remain operational and safe for users in times of flood; and any project in Zone 3b should result in no net loss of floodplain storage and not impede water flows”. “... impacts on the water environment should be given more weight where a project would have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive”.
	Biodiversity and Geodiversity NN NPS states that development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation to counteract impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought. Paragraphs 3.2 to 3.5 of the NN NPS state that not only should national road and rail networks be designed to minimise social and environmental impacts, but that they should also seek to improve quality of life. In part this may be achieved by “reconnecting habitats and ecosystems [...] improving water quality and reducing flood risk, [...] and addressing areas of poor air quality.” Paragraph 5.162 recognises the potential for developments to provide positive environmental and economic benefits through the provision of green infrastructure. Paragraph 5.175 of the NN NPS highlights that green infrastructure identified in development plans should be protected and, where possible, enhanced.

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
The Environment Bill (2020)	The Environment Bill 2020 sets out how the Government plan to protect and improve the natural environment in the UK and is a key vehicle in the delivery of the 25 Year Environment Plan. It sets a new and ambitious domestic framework for environmental governance on a number of measures including the clean air strategy; biodiversity net gain; trees; conservation covenants; extended producer responsibility for packaging; recycling; a deposit return scheme for drinks containers and water.
The State of Natural Capital, Natural Capital Committee (2020)	In the report, the Natural Capital Committee sets out: <ul style="list-style-type: none"> • Despite some improvements, only limited progress has been made towards the 25 Year Environment Plan's goals. • Its advice to Government that biodiversity net gain should be expanded to environmental net gain. • Its advice that an England wide baseline of natural capital assets should be established to measure progress towards environmental goals. Natural capital should be seen as infrastructure in its own right, in recognition of its contribution to economic wellbeing.
Planning for the Future (White Paper) August 2020	As part of the government's drive to reform national planning regulations, they have recently released a white paper for consultation. It focusses on digitalisation (moving to a 'data-driven' form of planning) removing 'red tape' around planning policies, and improving the sustainability of housing stock. Key pillars include: <ul style="list-style-type: none"> • 'First, we will streamline the planning process with more democracy taking place more effectively at the plan-making stage, and will replace the entire corpus of plan-making law in England • Second, we will take a radical, digital-first approach to modernise the planning process. This means moving from a process based on documents to a process driven by data. • Third, to bring a new focus on design and sustainability. • Fourth, we will improve infrastructure delivery in all parts of the country and ensure developers play their part, through reform of developer contributions. • Fifth, to ensure more land is available for the homes and development people and communities need, and to support renewal of our town and city centres.'
Clean Air Strategy (2019)	Addresses action to reduce emissions from transport "as a significant source of emissions of air pollution", in-particular oxides of nitrogen (NOx) – which is responsible for high levels of NO2 in ambient air, especially in urban areas - and particulate (PM10 and PM2.5) emissions.
Government Clean Air Strategy (2019) Department for Environment and Rural Affairs	Explains how the government will tackle all sources of air pollution. It sets out potential future legislation around transport, and broad measures to help drive a switch to zero-emissions transport modes.
Our Waste, Our Resources: A Strategy for England (2018)	This Strategy is the first significant government statement in this area since the 2011 Waste Review and the subsequent Waste Prevention Programme 2013 for England. It builds on this earlier work but also sets out fresh approaches to long-standing issues like waste crime, and to challenging problems such as packaging waste and plastic pollution. The strategy is framed by natural capital thinking and guided by two overarching objectives: <ol style="list-style-type: none"> 1. To maximise the value of resource use; and 2. To minimise waste and its impact on the environment. The Strategy has five key principles: <ol style="list-style-type: none"> 1. To provide the incentives, through regulatory or economic instruments if necessary and appropriate, and ensure the infrastructure, information and skills are in place, for people to do the right thing; 2. To prevent waste from occurring in the first place, and manage it better when it does; 3. To ensure that those who place on the market products which become waste to take greater responsibility for the costs of disposal – the 'polluter pays' principle; 4. To lead by example, both domestically and internationally; and 5. To not allow our ambition to be undermined by criminality.

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Industrial Strategy White Paper (2017) Department for Business Energy and Industrial Strategy	<p>The Industrial Strategy White Paper, published by the UK government in November 2017, sets out the government's over-arching industrial policy. This White Paper describes how the government will work to boost the productivity of the UK by helping "business create better, higher-paying jobs in every part of the United Kingdom with investment in the skills, industries and infrastructure of the future". The White Paper describes five "foundations of productivity":</p> <ul style="list-style-type: none"> • ideas; • people; • infrastructure; • business environment; and • places.
Air Quality Plan (2017) Department for Environment and Rural Affairs	<p>Describes how the government plans to improve air quality by ending the sale of new, conventional petrol and diesel cars and vans by 2040. This policy has had a significant impact on the automotive industry and has already resulted in significant changes in consumer behaviour.</p>
Housing White Paper (2017) (Fixing our broken housing market) Ministry for Communities Housing and Local Government	<p>Sets out how the government intends to boost housing supply and create a more efficient housing market. The government wishes to ensure the housing market delivers outcomes that are more closely matched to the needs and aspirations of all households, and support wider economic prosperity. This policy is particularly pertinent to the South East as the region is characterised by relatively low levels of housing affordability.</p>
The Paris Agreement (2015)	<p>Aims to limit the global warming change to well below 2°C above pre-industrial levels. However, countries aim to limit the increase to 1.5°C to reduce the impacts of global warming. The EU has committed to a binding target of a reduction of at least 40% in greenhouse gas emissions by 2030 compared to 1990.</p>
Transforming our World: the 2030 Agenda for Sustainable Development (2015)	<p>Sets a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. It sets 17 Sustainable Development Goals (SDGs) and 169 targets. Applicable goals include:</p> <ul style="list-style-type: none"> • Goal 6 - Ensure availability and sustainable management of water and sanitation for all • Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all • Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation • Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable • Goal 12 - Ensure sustainable consumption and production patterns • Goal 13 - Take urgent action to combat climate change and its impacts • Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development • Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Strategic Economic Plans (SEPs) (2014)	<p>Outline each LEP's vision and strategic priorities for their region up to 2020/21. The first round of SEPs were published by each LEP in 2014. These are currently being updated to reflect the emerging Industrial Strategy (described under "National Policy Context"). The next round of SEPs will outline a vision to 2030. The regions which currently have SEPs in the South East are: Coast to Capital, Enterprise M3, Solent, South East and Thames Valley Berkshire. The SEPs also outline the industrial and sectoral priorities for their region, which are based on each region's perceived economic strengths and stated growth ambitions. Please note that not all of the SEPs cover all of the areas highlighted to the right - they are selected based on what is representative of the 'general' SEPs in the South East.</p>

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
A 2030 Framework for Climate and Energy Policies Green Paper (2013)	<p>The framework sets three key targets for the year 2030:</p> <ul style="list-style-type: none"> • At least 40% cuts in greenhouse gas emissions (from 1990 levels); • At least 27% share for renewable energy; and • At least 27% improvement in energy efficiency.
EU Adaptation Strategy (2013)	<ul style="list-style-type: none"> • Promoting action by member states and supporting adaptation in cities; • Promoting adaptation in vulnerable sectors and ensuring Europe's infrastructure is more resilient; and • Better informed decision making by addressing gaps in knowledge about adaptation.
Green Infrastructure: An integrated approach to landscape use. Landscape Institute Position Statement (2013)	<p>The Landscape Institute's most recent position statement, 'Green Infrastructure LI Position Statement 2013' sets out why GI is crucial to our sustainable future. The publication showcases a range of successful GI projects and shows how collaboration is key to delivering multifunctional landscapes. It also illustrates why landscape professionals should take the lead on the integration of GI.</p>
EU Biodiversity Strategy to 2020 – towards implementation (2011)	<p>Aimed at halting the loss of biodiversity and ecosystem services in the EU by 2020, the strategy provides a framework for action over the next decade and covers the following key areas:</p> <ul style="list-style-type: none"> • Conserving and restoring nature; • Maintaining and enhancing ecosystems and their services; • Ensuring the sustainability of agriculture, forestry and fisheries; • Combating invasive alien species; and • Addressing the global biodiversity crisis.
Noise Policy Statement for England (2010)	<p>The long-term vision for the Noise Policy Statement for England is to “promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.”</p>
Accessible Natural Green Space Standards in Towns and Cities: A review and Toolkit for their Implementation (2003) and Nature Nearby: Accessible Green Space Guidance (2010)	<p>English Nature (now Natural England) recommends that provision should be made of at least 2ha of accessible natural greenspace per 1000 population according to a system of tiers into which sites of different sizes fit:</p> <ul style="list-style-type: none"> • no person should live more than 300m from their nearest area of natural greenspace; • there should be at least one accessible 20ha site within 2km from home; • there should be one accessible 100ha site within 5km; and • there should be one accessible 500ha site within 10km.
Ambient Air Quality Directive (2008)	<p>The Ambient Air Quality Directive provides the current framework for the control of ambient concentrations of air pollution in the EU. The control of emissions from mobile sources, improving fuel quality and promoting and integrating environmental protection requirements into the transport and energy sector are part of these aims.</p>
The Climate Change Act, 2008	<ul style="list-style-type: none"> • Improve carbon management and help the transition towards a low carbon economy in the UK. • Demonstrate strong UK leadership internationally, showing the commitment to taking shared responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement at Copenhagen in 2009. • Greenhouse gas emission reductions through action in the UK and abroad of at least 80% by 2050, and reductions in CO2 emissions of at least 26% by 2020, against a 1990 baseline. However, more ambitious targets are being set under the Paris Agreement.

Policy Context Tables - National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Directive 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste	Waste management in the EU should be improved and transformed into sustainable material management, with a view to protecting, preserving and improving the quality of the environment, protecting human health, ensuring prudent, efficient and rational utilisation of natural resources, promoting the principles of the circular economy, enhancing the use of renewable energy, increasing energy efficiency, reducing the dependence of the Union on imported resources, providing new economic opportunities and contributing to long-term competitiveness.
Future Water The Government's water strategy for England (2008)	The vision for water policy and management is one where, by 2030 at the latest, England has: <ul style="list-style-type: none"> • improved the quality of our water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from our taps; • sustainably managed risks from flooding and coastal erosion, with greater understanding and more effective management of surface water; • ensured a sustainable use of water resources, and implemented fair, affordable and cost reflective water charges; • cut greenhouse gas emissions; and • embedded continuous adaptation to climate change and other pressures across the water industry and water users.
Directive 2000/60/EC of the European Parliament - "The Water Framework Directive" (2000)	The main aims of the Water Framework Directive (WFD) are to: <ul style="list-style-type: none"> • prevent deterioration and enhance status of aquatic ecosystems, including groundwater • promote sustainable water use • reduce pollution • contribute to the mitigation of floods and droughts The WFD requires the creation of River Basin Management Plans (RBMPs).
Conservation of Natural Habitats and Wild Fauna & Flora (the 'Habitats Directive') (1992)	The identification of a European network of Sites of Community Importance (SCIs) to be designated as Special Areas of Conservation (SACs). A SEA would need to report on any potential effects on SACs and all development plans should aim to avoid adverse effects on them.
Planning (Listed buildings and Conservation Areas) Act 1990	This is an Act relating to special controls in respect of buildings and areas of special architectural or historic interest.
Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)	The convention has three main aims which are stated in Article 1: <ul style="list-style-type: none"> • to conserve wild flora and fauna and their natural habitats; • to promote cooperation between states; and • to give particular attention to endangered and vulnerable species including endangered and vulnerable migratory species.
1979 Ancient Monuments and Archaeological Areas Act	Where Ancient Monuments occur on agricultural land the following Act influences the extent of public control to ensure the protection of scheduled ancient monuments.

Policy Context Tables – Sub-National Transport Policy – Local Transport Plans

Plan or Policy	Relevant Aims/Objectives/Key Messages
Surrey LTP (2018)	<ul style="list-style-type: none"> • Facilitate end-to-end journeys for residents, business and visitors by maintaining the road network, delivering public transport services and, where appropriate, providing enhancements. • Improve road safety and the security of the travelling public. • Provide an integrated transport system that protects the environment, keeps people healthy and provides for lower carbon transport choices. • None have been identified in the Local Transport Plan. The Districts and Boroughs are producing Local Transport Strategies which identify priorities at a spatial level.
Brighton and Hove LTP4 (2015)	<p>Brighton and Hove council identify three main priorities for the transport plan which are:</p> <ul style="list-style-type: none"> • Maintaining and renewing the transport network and its infrastructure to increase resilience. • Managing movement on the transport network, changing travel behaviour and informing people's travel choices in dynamic ways to increase efficiency and sustainability. • Improving sustainable and accessible transport infrastructure, connections, information and options to link people with places and communities, and provide a safer and more attractive environment. <p>The plan includes a long-term strategy for delivering transport improvements that looks ahead to 2030; and a short-term Delivery Plan focussed on the next four years (2015/16 – 2018/19) which is primarily based on the £20.3 million worth of capital funding that will be provided by the government during this period.</p> <p>The strategic priorities are:</p> <ul style="list-style-type: none"> • Grow the Economy Sustainably • Reduce Carbon Emissions • Increase Safety & Security • Provide Equality, Mobility & Accessibility • Improve Health & Well-being • Enhance the Public Realm • Encourage Respect & Responsibility
West Sussex LTP (2011)	<ul style="list-style-type: none"> • Provide a high-quality transport network that promotes a competitive and prosperous economy in all parts of the County. • Provide a resilient transport network that complements the built and natural environment whilst reducing carbon emissions over time. • Provide access to services, employment and housing. • Provide a transport network that feels and is safer and healthier to use. • Improvements to the A27 trunk road and complementary public transport improvements to local bottlenecks. • Improve connectivity to Gatwick – extend Fastway, improve Brighton Main Line and Arun Valley Line
East Sussex LTP (2011)	<ul style="list-style-type: none"> • Reduce congestion by improving the efficiency of the transport network and encouraging greater use of sustainable modes of transport. • Improve road safety for vulnerable road users – pedestrians, cyclists, motorcyclists and horse riders. • Reduce the number of people killed and seriously injured in road crashes. • Reduce greenhouse gas emissions, local air pollution and noise from transport. • Increase the resilience of transport infrastructure and services to the effects of climate change. • Improve personal health and well-being by encouraging and enabling increased physical activity through active travel. • Improving shortcomings in the rail infrastructure which affects both east/west movements along the coastal corridor, connections to Brighton, Ashford and Gatwick Airport, and between Hastings and London. • Improving bus services in rural areas. • Gap and Lewes town centre around Fisher Street.

Policy Context Tables – Sub-National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
SELEP COVID19 Economic Statement (2020) South East Local Enterprise Partnership	<p>SELEP's LIS is currently on hold while the economic challenges from COVID19 are being assessed. In the interim, a COVID19 economic statement has been released, which explains SELEP's response to the crisis and the economic support it is providing. It notes that they are providing more than £90m of investment to accelerate the recovery effort, focussing on delivering key infrastructure which will provide jobs now, and long-term positive economic benefits in the future. It also notes a number of areas where SELEP will focus its attention in the coming months in order to aid the recovery, including:</p> <ul style="list-style-type: none"> • Supporting businesses to adapt, recover and grow. • Re-skilling the workforce, supporting people back into the labour market • Driving forward innovation, research and development to help stimulate the economy and increase productivity • Promoting and enabling clean recovery in the future planning of our towns and communities • Addressing gaps in digital connectivity • Accelerating planned growth through investment in £85m Getting Building Funds • Tackling the implications of BREXIT • Continuing a strong dialogue with government as a LEP
Logistics and Gateway Review (2019) Transport for the South East	<p>The aim of this study was to provide a consistent view of current and future patterns of freight activity and key cross-cutting issues relating to freight logistics and gateways across the TfSE area. Recommends developing a comprehensive freight strategy, which sets out the interventions and management actions required across the TfSE area, as well as the cost of undertaking these. Second, thought should be provided about how the promotion of best practice can be undertaken. Third, the strategy must incorporate local freight planning, including consolidation centres, land use, and retiming.</p>
West Sussex Electric Vehicle Strategy 2019-2030	<p>Aims:</p> <ol style="list-style-type: none"> 1. At least 70% of all new cars in the county to be electric by 2030. 2. There is sufficient charging infrastructure in place to support the vehicles predicted to be reliant on public infrastructure to charge. 3. Ensure a renewable energy source for all charging points on County Council land or highway. <p>Series of clear actions and objectives laid out which will help to deliver said aims.</p>
Future Mobility Review (2018) WSP on behalf of Transport for the South East	<p>This paper examined how future mobilities have the potential to change the transportation and provide opportunities in the South East area. The study provides a number of key recommendations for TfSE, which include;</p> <ul style="list-style-type: none"> • Energy – develop a sufficient and reliable supply of energy across all sectors • Communications – provide consistently fast and reliable digital coverage in all communities/corridors • Spatial Planning – integrate spatial planning, economic development, and transport policy. Plan new developments that prioritise major trip generators in the most accessible locations. • Health – improve health and social care outcomes through comprehensive and consistent access to services. • Education – consider the implications of future mobility trends upon the skills and education sector, in particular those associated with automotive, AI and robotics. • Environment – reduce emissions related to poor air quality, and wider environmental impacts from transport.
TfSE Economic Connectivity Review (2018) Transport for the South East	<p>Highlights the unique position of the South East as a powerful driver of the UK economy and as the nation's major international gateway for people and business. It provides the evidence that underlines the South East's competitiveness in the maritime, defence, advanced engineering, biosciences, and connected digital sectors. These strengths are all supported by digital enabling technologies and other high growth sector specialisms in finance, professional services, transport and logistics. The study estimates the South East's high-growth priority sectors and their economic assets could deliver as much as £500 billion per year to the UK economy by 2050. However, it concludes that the region needs a period of sustained investment in infrastructure if it is to maintain its competitiveness in the face of intensifying global competition. and realise its full economic potential.</p>

Policy Context Tables – Sub-National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Network Rail Local Studies	<p>Local Studies, which bring together the suggested outputs for all the market sectors of a part of the network. These studies evaluate the trade-offs between the suggested outputs for the different sectors, form a view of the likely long-term allocation of different sectors, and use these findings to inform decisions on the appropriate capability of the network. In total, there are five Local Studies in the South East:</p> <ul style="list-style-type: none"> • London and South East • South East (Sussex) • South East (Kent) • Wessex • Western
West Sussex Connectivity Modular Strategic Study (2020) Network Rail	<p>This Study is intended to focus on the requirements of stakeholders and the rail industry for the next 20-30 years. As well as looking at rail provision, this Study also looks at wider transport issues and housing growth. The recommendations for funders from this Study aim to enable the railway will grow in a sustainable way to help balance the economy of the region and contribute to decarbonisation. Overall, three key strategic themes are identified:</p> <ul style="list-style-type: none"> • Planning for sustainable growth • Wider transport connectivity • Rebalancing the economy <p>The immediate interventions identified in this paper are:</p> <ul style="list-style-type: none"> • Replace the Class 313 units with modern Coastway configured trains • Introduce the Train Service Specification Option 1, which requires no additional rolling stock or infrastructure • Improve coastal connectivity to London through improvements to the Class 377s to enable faster attaching/detaching • Advertise the last trains from Brighton to Worthing • Enable reduced level crossing down times by lengthening platforms that are too short for the longest trains • Enable faster east-west journeys and improve service resilience by progressing Worthing bi-directional working, see TSS Option 2 • Enable later/earlier trains between Horsham and Gatwick Airport • Progress Worthing bi-directional working and an additional platform at Brighton through the RNEP process <p>Other recommendations requiring further development with Transport for the South East:</p> <ul style="list-style-type: none"> • Further development of TSS (Train Service Specifications) Options considering the following: <ul style="list-style-type: none"> o Improve east-west journey times o Consistent intervals within the timetable o Optimising the mix of long-distance and stopping services o Increasing the volume of services between Brighton and Southampton/Bristol o Encapsulating the recommendations of the Solent Study • Bus links connecting neighbourhoods and employment locations to stations with integrated timetables • Consistent approach to the options available for passengers to use other modes to connect to the railway • Improving connections from stations to the South Downs National Park • Exploit the opportunities for improved cycle and walking routes to the station and the facilities at the station to make interchange as easy as possible.

Policy Context Tables – Sub-National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
London Mayors Transport Strategy (2018)	There are several aspects of the London Mayoral transport strategy which link to the South East. Notes that it is important, if London is to be a car-free city, that the wider economic region remains economically successful. It notes that "Economic growth and the provision of new housing in London and the Wider South East – the economic powerhouse of the country – depend on improvements to the connectivity and capacity of the strategic transport network. Improvements to the rail network are particularly important, as they support more active, efficient and sustainable travel." It also notes the particular importance of orbital networks to reduce pressure on London's congested system.
Unblocking the Croydon Bottleneck (2018)	The Croydon area is the busiest, most congested and most complex part of the country's rail network. This scheme (currently out to public consultation) will provide more reliable, more frequent and faster services on the Brighton main line. It includes East Croydon station expansion and enhancement, 'Selhurst triangle' remodeling, Windmill Bridge reconstruction and Norwood Junction station upgrade. As the main route connecting the capital with Gatwick Airport and the South Coast improving the Brighton Main Line will provide a significant boost to the regional and national economy.
West Sussex Bus Strategy (2018-2026)	Purpose of this document is to: 1. To clearly state the County Council's aims and objectives for local buses and community bus transport between 2018 and 2026 2. To determine the County Council's priorities for funding, reflecting its overall passenger transport aspirations. 3. To provide guidance in support of prioritising bus infrastructure in new developments. 4. To provide a framework through which local interest and community groups can assist in 5. the development of passenger transport improvements 6. To support interested parties in securing additional funding where available. 7. To provide fit for purpose services and infrastructure supporting those services. 8. To determine which opportunities within the Bus Services Act 2017 are supported
Freight Market Study (2017) Network Rail	The study brings together the strategic freight recommendations from individual routes and also provides an outline of the wider non-route specific priorities for rail freight capacity and capability. The study notes that there has been a recent growth in rail freight, a geographical shift in freight flows towards busier rail corridors, and a growth in passenger numbers. All of these trends are placing additional capacity constraints on the freight sector. This market study identifies future requirements on individual corridors and highlights capacity gaps. It also considers the need for increased capability (e.g. speed improvements and train length).
Kent Local Transport Plan 4: Delivering Growth without Gridlock 2016–2031	Ambition: To deliver safe and effective transport, ensuring that all Kent's communities and businesses benefit, the environment is enhanced and economic growth is supported. Desired outcomes: - Economic growth and minimised congestion - Affordable and accessible door-to-door journeys - Safer travel - Enhanced environment - Better health and wellbeing

Policy Context Tables – Sub-National Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
West Sussex Walking and Cycling Strategy 2016-2026	<p>Key objectives which are highlighted in this document include:</p> <ol style="list-style-type: none"> 1. To ensure that cycling and walking are recognised as important travel modes and therefore part of the transport mix 2. To make cycling and walking the natural choice for shorter journeys (such as journeys to school), or as part of a longer journey 3. To reduce the number of cyclists and pedestrians that are killed or seriously injured on our roads 4. To support economic development by facilitating travel to work and services without a car 5. To reduce congestion and pollution by encouraging and enabling people to travel without a car 6. To increase levels of physical activity to help to improve physical health 7. To help to maintain good mental health and staying independent later in life 8. To increase the vitality of communities by improving access by bicycle and on foot 9. To help people to access rural areas and enjoy walking and cycling
London South East Market Study (2013) Network Rail	<p>This study quantifies the importance of rail travel in South East England (nearly half of all trips to Central London are by rail) and forecasts that demand for off-peak travel and commuting into regional centres is expected to grow. The strategic goals identified for this market are:</p> <ul style="list-style-type: none"> • to enable economic growth; • to reduce carbon emissions and the transport sectors' impact on the environment; • to improve the quality of life for communities and individuals; and • to improve affordability. <p>Long term conditional outputs developed from the study include accommodating peak demand on short distance services and improving services between regional centres.</p>

Policy Context Tables – Sub-National Non-Transport Policy – Local Enterprise Partnership Strategy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Coast2Capital Build Back Stronger, Smarter and Greener (2020)	<p>Coast to Capital regional economic output is estimated to have declined by up to 22% in the same year. The Coronavirus (COVID-19) Economic Impact Assessment examines in detail how the pandemic will bring major shocks to many parts of our region, particularly those towns with economies that are closely linked to Gatwick airport. Build Back Stronger, Smarter and Greener sets out a compelling case for a series of place based, transformational infrastructure projects for the area that will speed recovery and accelerate growth. They will address long term productivity challenges in our economy as well as the significant short-term impacts of the Coronavirus pandemic, identified in the Coronavirus (COVID-19) Economic Impact Assessment. The goals of the strategy are:</p> <ul style="list-style-type: none"> • To build back stronger, Coast to Capital will support Crawley with a plan to grow and evolve the UK's most COVID-19 impacted town into a more economically diverse and dynamic place. • To build back smarter, we will build upon the knowledge and innovation community which already exists in Brighton. • To build back greener, we will draw on the talented workforce and local business specialisms, to lead a green recovery across the whole region. <p>Headline transformational projects to facilitate recovery and future productivity include:</p> <ul style="list-style-type: none"> • Innovation Centre – to foster a new innovation ecosystem in Crawley which will connect international advanced engineering companies with local supply chains and skills. • Quantum equity investment fund – to support commercialisation of ideas from the Quantum Technology Lab at University of Sussex. • Natural Capital Investment Company – to create an investment vehicle to develop a long-term pipeline of biodiversity increase and carbon offsetting investment opportunities. • Digital infrastructure delivery – to improve digital infrastructure across our area and align skills provision with industry specialism to create new jobs. • Croydon Area Upgrade Scheme – to address the bottleneck on the Brighton Main Line at Croydon, increasing rail capacity across our region.
Coast2Capital Gatwick 360° Strategic Economic Plan and Local Industrial Strategy (2018)	<p>Gatwick 360° identified that despite the many economic strengths of our area, productivity has not grown at the rate it could have done compared to other, similar Local Enterprise Partnership areas. The strategy identified eight economic priorities:</p> <ol style="list-style-type: none"> 1 - Deliver Prosperous Urban Centres 2 - Develop Business Infrastructure and Support 3 - Invest in Sustainable Growth 4 - Create Skills for The Future 5 - Pioneer Innovation in Core Strengths 6 - Promote Better Transport and Mobility 7 - Improve Digital Network Capability 8 - Build a Strong National and International Identity

Policy Context Tables – Sub-National Non-Transport Policy – Local Enterprise Partnership Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Energy South 2 East, Local Energy Strategy (2019)	<p>This local energy strategy has been developed to enable the Coast to Capital, Enterprise M3 and South East Local Enterprise Partnerships (LEPs) of England to achieve clean growth from now until 2050 in energy across the power, heat and transport sectors. The strategy has five priority themes:</p> <ul style="list-style-type: none"> • Low Carbon heating - district heat networks, off-gas grid homes, hydrogen injection into the natural gas grid, new-build homes on hydrogen grid • Energy Saving and efficiency - off gas grid homes, energy efficiency in homes, SME support programme • Reducing carbon in a global economy – international aspects of transportation – shipping and aviation – are vital to the UKs economy; the UK must become a centre of expertise to drive low carbon transport, boosting the UK economy and helping to lead the change internationally. • Renewable generation - offshore wind, solar and microgrid on landfill sites, biomass fuel supply chain, solar energy for network rail, car park solar potential, biofuel evolution • Smart energy system - housing and community microgrids, EV charging and hydrogen fuelling infrastructure, setup of ESCO/MUSCO infrastructure, support developments in CO2 capture • Transport Revolution - port modernisation, EV charging, CNG fleet fuelling
Coast to Capital LIS Logic Chains (2019) Coast to Capital	<p>The Coast to Capital LEP have submitted a set of 'logic chains' to the Government's LIS Analytical Panel for review, presenting the rationale behind a set of draft interventions for the LIS (which is now on hold due to the COVID-19 pandemic) which were identified through extensive engagement with partners and in response to the findings from the evidence base. These logic chains cover the following areas;</p> <ul style="list-style-type: none"> • People: local talent pipeline • Business environment: business growth • Business environment: business space • Places: sustainable growth • Place: natural capital • Infrastructure: 5G digital region • Infrastructure: smart, clean mobility • Ideas: innovation acceleration
Coast to Capital Rural Statement (2016)	<p>The purpose of the Rural Statement is highlight the contribution of the unique rural area to the future economic, social and environmental success of Coast to Capital and to identify the priorities for action which will be included in the action plan which is to follow. The key to improving rural competitiveness is not only to recognise the interdependencies between rural and urban areas but also to develop strong rural areas in their own right which reflect the varied and rapidly changing nature of the rural economy and communities. The evidence suggests that: high-performing rural areas have five essential attributes:</p> <ol style="list-style-type: none"> 1. A highly skilled workforce 2. An innovative economic base serving both national and global markets 3. A physical environment that provided the basis of a high quality of life 4. A strong sense of place and identity 5. Good access to urban employment centres.

Policy Context Tables – Sub-National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
Future water resource requirements for South East England (2020)	<p>The plan will take a long-term view, looking ahead to 2100 and consider the water needed in homes and at work, and that required by industry, agriculture, electricity generation and the water needs of the environment. The plan will seek to:</p> <ul style="list-style-type: none"> • Ensure there is enough water to serve the growing population and support growth in the economy • Address the impacts of climate change on water availability • Improve the environment by leaving more water in the region's rivers, streams and underground sources • Increase the region's resilience to drought and other events.
West Sussex Draft Economy Reset Plan: July 2020	<p>Lays out some of the issues which have been caused by COVID-19 across the area, and suggests possible options for alleviating them.</p> <p>Priority themes:</p> <ol style="list-style-type: none"> 1. Protecting and reviving Crawley and the Gatwick Diamond economy 2. Protecting and reviving the coastal towns 3. Protecting and reviving the rural economy 4. Enabling business start-ups, business survival and business adaptation 5. Enabling an employment and skills reset (includes unemployment) 6. Protecting and reviving tourism and the visitor economy 7. Enabling a health and social care market for the future 8. Enabling a digital technology focussed reset Theme 9: Embedding climate change and the environment into the reset
Surrey Hills AONB Management Plan (2019)	<p>Key objectives of the plan include:</p> <ul style="list-style-type: none"> - Improve/influence the preparation of Local Plans and Major Developments influencing the AONB - Landscape Conservation and Enhancement - Improve Access, Enjoyment and Understanding - Grow the Surrey Hills Economy - Improve Partnership and Coordination
The High Weald AONB, Management Plan (2019 - 2024)	<p>Key objectives of the plan include:</p> <ul style="list-style-type: none"> • To restore the natural function of rivers, water courses and water bodies. • To protect and enhance soils, sandstone outcrops, and other important landform and geological features. • To help secure climatic conditions and rates of change which support continued conservation and enhancement of the High Weald's valued landscape and habitats. • To reconnect settlements, residents and their supporting economic activity with the surrounding countryside. • To enhance the architectural quality of the High Weald and ensure development reflects the character of the High Weald in its scale, layout and design. • To enhance the ecological function of routeways. • To enhance the ecological quality and functioning of woodland at a landscape scale. • To secure agriculturally productive use for the fields of the High Weald, especially for local markets, as part of sustainable land management. • To enhance the ecological function of field and heath as part of the complex mosaic of High Weald habitats. • To improve amenities, infrastructure (including the provision of appropriate affordable housing), and skills development for rural communities and related sectors that contribute positively to conserving and enhancing natural beauty

Policy Context Tables – Sub-National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
MMO, South Inshore and South Offshore Marine Plan (2018)	<p>The south inshore marine plan area stretches from Folkestone in Kent to the river Dart in Devon, whilst the offshore marine plan area includes the area from 12nm to the maritime borders with France and the Channel Islands, totalling approximately 10,000sq km.</p> <p>The south marine plan areas are home to a number of ports including Southampton and Portsmouth, contain one of the busiest shipping channels in the world, support significant fishing and aquaculture activity and have a strong association with the defence of Britain.</p> <p>The main vision of the plan is "By 2038, the south marine plan areas' iconic and unique qualities, characteristics and culture will be conserved, promoted and where needed enhanced, through good management of its marine space. The natural beauty of the coastline and busy coastal and offshore waters are qualities that make the south marine plan areas distinctive. By 2038, the south marine plan areas will have maintained this distinctive natural beauty and diversity while sustainable economic growth, protection of the natural and historic environment, as well as the well-being of those who live, work and visit the South Coast, will have been enhanced through balanced and sustainable use of its resources".</p>
West Sussex Joint Minerals Local Plan (2018)	<p>The overall vision of the plan is to create a "place where minerals are produced in ways which conserve and enhance the beautiful outdoors of West Sussex, including the special qualities of the South Downs National Park and Areas of Outstanding Natural Beauty, for the benefit of current and future generations".</p> <p>"Will have contributed to the supply of minerals, in particular, aggregates (soft sand, sharp sand and gravel, and marine won aggregate), clay, chalk, building stone, silica sand and oil and gas, to support growth in West Sussex. In particular social and economic progress of both the Coastal West Sussex and Gatwick Diamond strategic growth areas will be supported through the provision of aggregate to enable the delivery of new development".</p>
Brighton and Hove Open Space Strategy (2017)	<p>The Strategy sets out a range of policies and actions to put parks on a firm footing in order to maintain facilities for the future. The strategy highlights funding opportunities and the need to build on ideas that came out of the consultation. Key policies include:</p> <ul style="list-style-type: none"> • Continue to encourage habitats and opportunities for wildlife to thrive within all open spaces including parks and gardens. • Promote and pursue positive conservation management of semi-natural habitats on the council's managed land holdings, especially in designated nature conservation sites, the Nature Improvement Area , priority habitats and those acting as a wildlife stepping stone, and for priority species. • Seek ways to encourage investment in the Public Rights of Way and Open Access infrastructure including missing paths, signs, fences and gates etc. • Promote the importance of open and play space health.
Kent Local Flood Risk Management Strategy 2017 - 2023	<p>The aims of the local strategy are:</p> <ul style="list-style-type: none"> • To support and improve the safety and wellbeing of Kent's residents and the economy of Kent through appropriate flood risk management; • To ensure that we all work together effectively to understand and deliver appropriate flood risk management in Kent • To contribute to sustainable development, regeneration and land management in Kent through the promotion of sustainable flood risk management practices that utilise natural processes where appropriate.
South Downs Green Infrastructure Framework (2016)	<p>This Framework sets out a roadmap for green infrastructure planning for the South Downs National Park and the wider region. It is the first, united step by a range of partners working together to ensure that economic growth and development is achieved sustainably through planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.</p> <p>The overall aim of the framework is to " create, protect and enhance a connected network of green and blue spaces; which sustainably meet the needs of local communities and supports the special qualities of the South Downs National Park; by achieving a consensus about the strategic principles for planning, delivery and management of green infrastructure".</p>

Policy Context Tables – Sub-National Non-Transport Policy

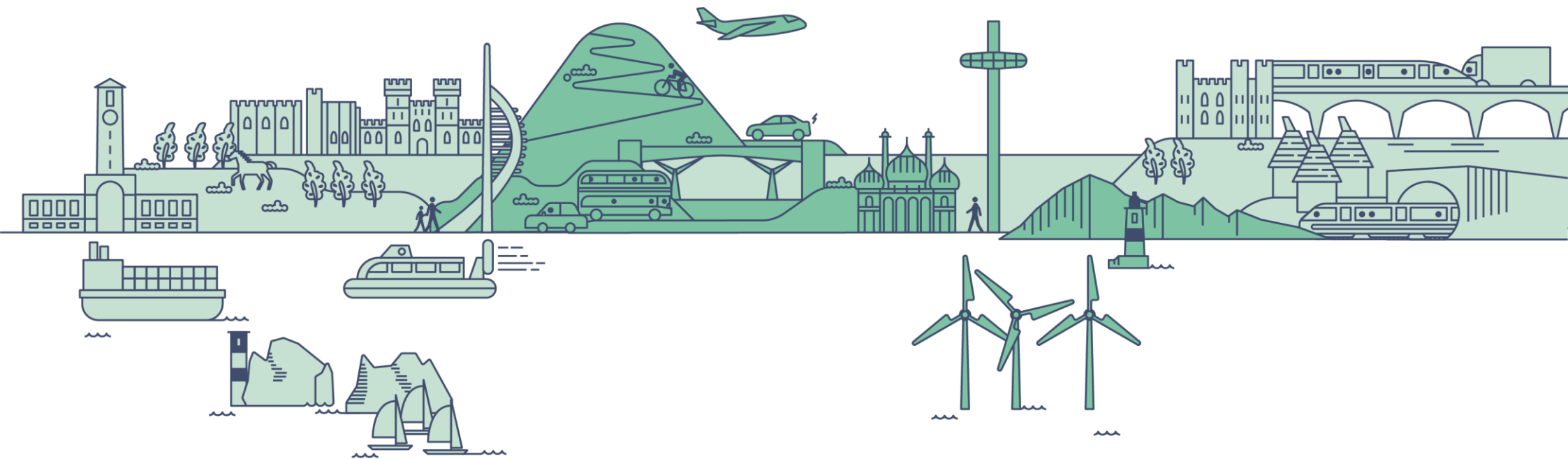
Plan or Policy	Relevant Aims/Objectives/Key Messages
Blue Green Infrastructure through Social Innovation (BEGIN) 2016 -2020	<p>BEGIN (Blue Green Infrastructure through Social Innovation) is a 4 year project funded through the European Regional Development Fund (ERDF) by the Interreg Europe programme. BEGIN proposes an approach to climate resilience for cities that mimics nature's potential to deal with flooding. Blue and Green Infrastructure (BGI) supports existing grey infrastructure to cope with extreme weather events and improves urban liveability.</p> <p>The aims and objects of the BEGIN project are to:</p> <ul style="list-style-type: none"> • Demonstrate improved climate change adaptation through Blue Green Infrastructure (BGI) in urban areas • Capture and sustain BGI's multiple benefits by using social innovation • Implement viable BGI solutions in pilot projects • Incorporate BGI solutions into schemes to deliver drainage management and other multiple benefits. • Establish the value of ecosystem services using innovative economic valuation tools.
East Sussex Local Flood Risk Management Strategy 2016 – 2026	<p>The principal elements of the Strategy include;</p> <ul style="list-style-type: none"> • the implementation of a proportionate approach to managing risk; • managing flood risk as part of the planning process; • ensuring that landowners and property owners are aware of their responsibilities; • the communication of flood risk information to those who need it; • improving the evidence base; • partnership working to deliver solutions to flooding problems; and, • identifying opportunities to bid for external funding to assist in delivering solutions
Brighton and Hove Local Flood Risk Management Strategy (2016)	<p>The Strategy includes eight key objectives:</p> <ul style="list-style-type: none"> • Work with Partners, Stakeholders and Local Community Groups to Understand and manage flood risk. • Continue to improve BHCC knowledge and evidence base of local flood risk • Work with Partners and Funders to implement sustainable measures to reduce flood risk • Manage development impact on flood risk through land allocation and development control policy • Raise public awareness and resilience to flooding • Undertake annual inspection, maintenance and improvement, where necessary of flood defence assets • Work with Partners and Funders to implement sustainable public health protection measure
Kent Biodiversity 2020 and beyond – a Strategy for the Natural Environment (2015-2025)	<p>The vision for biodiversity in Kent and Medway is: <i>"By 2050 our land and seas will be rich in wildlife, our biodiversity will be conserved, restored, managed sustainably and be more resilient and able to adapt to change and will be enjoyed and valued by all, underpinning our long-term economic, social and personal wellbeing"</i></p> <p>Key aims of the strategy include:</p> <ul style="list-style-type: none"> • Restoring at least 15% of degraded ecosystems as a contribution to climate change mitigation and adaptation. • More, bigger and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in the overall extent of priority habitats of 10,260 ha. • By the end of 2016 in excess of 25% of waters around Kent and Medway will be contained in a well-managed Marine Protected Area network that helps deliver ecological coherence by conserving representative marine habitats that are nationally and internationally important. This target should not include the area already covered by the Outer Thames SPA. • Better wildlife habitats in the county, with 70% of Local Wildlife Sites in favourable condition and at least 90% of Local Wildlife Sites in favourable or recovering condition, at least 50% of SSSIs in favourable condition, while maintaining at least 95% in favourable or recovering condition. • By 2020, landscape scale initiatives that address the conservation of key species, through effective, integrated and joined up approaches including through management of our existing systems of protected areas and the establishment of nature improvement areas, in place on 17% of land and water.

Policy Context Tables – Sub-National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
South Downs National Park Local Plan (2014 - 2033)	<p>There are 9 key overarching objectives which include:</p> <ol style="list-style-type: none"> 1. To conserve and enhance the landscapes of the National Park 2. To conserve and enhance the cultural heritage of the National Park 3. To conserve and enhance large areas of high-quality and well-managed habitat to form a network supporting wildlife throughout the landscape 4. To achieve a sustainable use of ecosystem services thus enhancing natural capital across the landscapes of the National Park and contributing to wealth and human health and wellbeing 5. To protect and provide opportunities for everyone to discover, enjoy, understand and value the National Park and its special qualities 6. To adapt well to and mitigate against the impacts of climate change and other pressures 7. To conserve and enhance the villages and market towns of the National Park as thriving centres for residents, visitors and businesses 8. To protect and provide for the social and economic wellbeing of National Park communities supporting local jobs, affordable homes and local facilities 9. To protect and provide for local businesses including farming, forestry and tourism that are broadly compatible with and relate to the landscapes and special qualities of the National Park
Kent Minerals and Waste Local Plan (2013 -2030)	<p>Throughout the plan period 2013-2030, minerals and waste development will:</p> <ol style="list-style-type: none"> 1. Make a positive and sustainable contribution to the Kent area and assist with progression towards a low carbon economy. 2. Support the needs arising from growth within Kent. 3. Deliver cost effective and sustainable solutions to Kent's minerals and waste needs through collaborative working with communities, landowners, the minerals and waste industries, the environmental and voluntary sector and local planning authorities. 4. Embrace the naturally and historically rich and sensitive environment of the plan area, and ensure that it is conserved and enhanced for future generations to enjoy. 5. Seek to deliver a sustainable, steady and adequate supply of land-won minerals including aggregates, silica sand, crushed rock, brickearth, chalk and clay, building stone and minerals for cement manufacture. 6. Facilitate the processing and use of secondary and recycled aggregates and become less reliant on land-won construction aggregates. 7. Safeguard economic mineral resources for future generations and all existing, planned and potential mineral transportation and processing infrastructure (including wharves and rail depots and production facilities). 8. Restore minerals sites to a high standard that will deliver sustainable benefits to Kent communities. 9. Move waste up the Waste Hierarchy, reducing the amount of non-hazardous waste sent to landfill. 10. Encourage waste to be used to produce renewable energy incorporating both heat and power if it cannot be re-used or recycled. 11. Ensure waste is managed close to its source of production. 12. Make provision for a variety of waste management facilities to ensure that Kent remains at the forefront of waste management with solutions for all major waste streams, while retaining flexibility to adapt to changes in technology. 13. Ensure sufficient capacity exists to meet the future needs for waste management. 14. Restore waste management sites to a high standard that will deliver sustainable benefits to Kent communities.

Policy Context Tables – Sub-National Non-Transport Policy

Plan or Policy	Relevant Aims/Objectives/Key Messages
East Sussex, South Downs and Brighton & Hove Waste and Minerals Local Plan (2013)	<p>The overall vision for the plan includes:</p> <p>"By 2030 the environmental footprint, in particular greenhouse gas emissions, associated with the production and management of waste and minerals in the Plan Area will have been significantly reduced.</p> <p>Reductions in waste arisings will have occurred and the efficient production and use of materials will have been maximised. Most waste will be reused, recycled to provide goods or raw materials, or processed to provide energy (heat or power), with as little as possible being disposed of because it is the least sustainable option and because the environmental characteristics of the Plan Area mean that opportunities for disposal to land are severely restricted.</p> <p>Facilities needed to manage waste and produce minerals will be designed, located, and operated to ensure that the area's built and natural heritage are preserved and even enhanced - from its exceptional countryside, which includes part of the South Downs National Park, the Heritage Coast, the High Weald AONB including Ashdown Forest, the Low Weald, and the Levels at Pevensey and Rye, to its distinctive and varied built environment which includes seaside towns and a city with grand Regency architecture as well as scattered Weald and downland villages".</p>



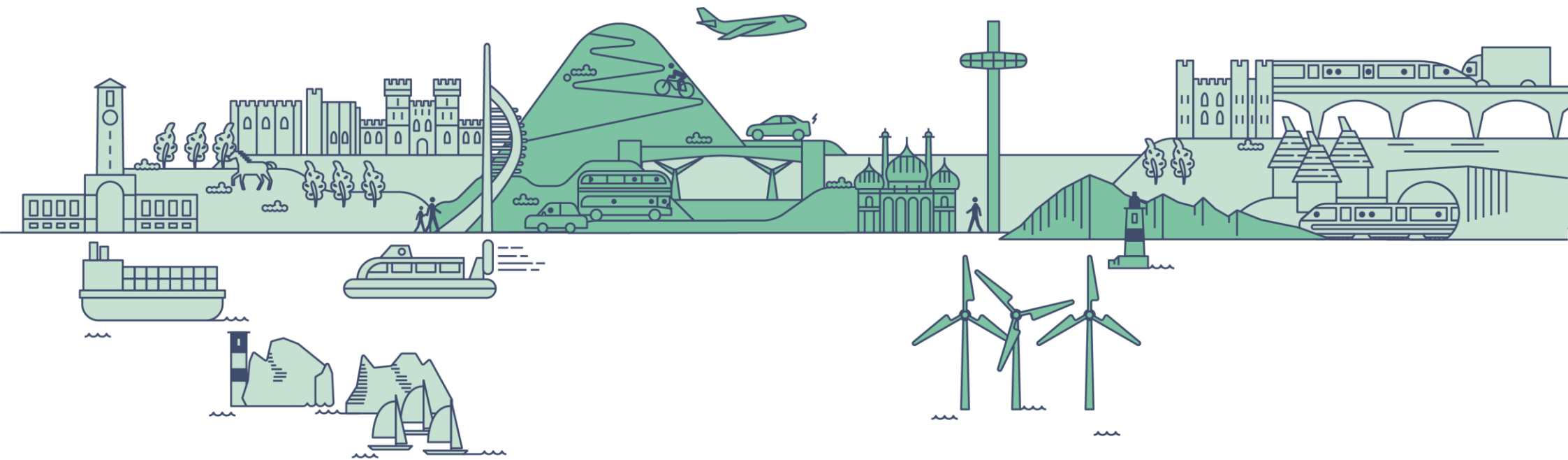
Appendix B

Socioeconomic Indicators

Area	GVA (2018, £m)	GVA (2008, £m)	GVA Growth (%)	GVA per capita (£)	Jobs Available	Eligible workforce (16-64)	Jobs minus workers	Jobs / Workforce (%)	Priority Sectors Jobs	Priority Sectors Jobs (%)	Priority Sector Quotient	Population (2019)	Population (2009)	Population Growth
Outer Orbital	81,031	62,686	29%	23,405	1,373,870	2,088,000	(714,130)	66%	160,965	11.7%	0.41	3,462,171	3,210,710	7.8%
South West (Outer Orbital)	42,060	32,359	30%	25,907	694,725	986,000	(291,275)	70%	102,545	14.8%	0.51	1,623,484	1,521,374	6.7%
South Central (Outer Orbital)	31,437	24,359	29%	22,281	546,285	846,600	(300,315)	65%	50,985	9.3%	0.32	1,410,944	1,298,734	8.6%
South East (Outer Orbital)	15,734	12,699	24%	18,355	293,780	504,200	(210,420)	58%	23,795	8.1%	0.28	857,216	789,620	8.6%
Inner Orbital	140,517	107,337	31%	35,906	1,846,655	2,400,100	(553,445)	77%	227,435	12.3%	0.43	3,913,426	3,614,802	8.3%
South West (Inner Orbital)	94,225	70,973	33%	42,018	1,134,900	1,383,100	(248,200)	82%	141,950	12.5%	0.43	2,242,472	2,092,937	7.1%
South Central (Inner Orbital)	22,773	19,300	18%	35,813	317,550	380,600	(63,050)	83%	48,135	15.2%	0.53	635,882	591,488	7.5%
South East (Inner Orbital)	32,424	24,518	32%	24,533	520,825	803,100	(282,275)	65%	48,075	9.2%	0.32	1,321,668	1,200,989	10.0%
South Central Radial	54,210	43,659	24%	26,485	863,835	1,227,200	(363,365)	70%	99,120	11.5%	0.40	2,046,826	1,890,222	8.3%
South West Radial	136,285	103,332	32%	35,253	1,829,625	2,369,100	(539,475)	77%	244,495	13.4%	0.46	3,865,956	3,614,311	7.0%
South East Radial	45,169	34,892	29%	22,046	758,315	1,227,100	(468,785)	62%	66,695	8.8%	0.31	2,048,852	1,874,915	9.3%
South East	226,759	174,429	30%	29,545	3,325,155	4,656,700	(1,331,545)	71%	399,585	12.0%	0.42	7,675,038	7,108,836	8.0%

Area	Current Dwellings (2019)	Planned Dwellings (up to 2050)	% Dwelling Growth	Current Jobs (2017)	Planned Jobs (up to 2050)	% Job Growth	Number of LSOAs in Planning Authority	Number of LSOAs in Most Deprived Areas	% of Total LSOAs	In Scope Population	Population NVQ4+	NVQ Level 4+ (%)
Outer Orbital	1,541,926	200,309	13%	1,373,870	129,332	9%	2,038	415	20%	2,081,200	834,300	40%
South West (Outer Orbital)	714,661	74,984	10%	694,725	33,725	5%	970	195	20%	983,300	392,300	40%
South Central (Outer Orbital)	632,893	76,507	12%	546,285	26,256	5%	822	121	15%	843,400	376,400	45%
South East (Outer Orbital)	386,842	77,261	20%	293,780	92,066	31%	497	144	29%	503,300	166,300	33%
Inner Orbital	1,646,633	278,783	17%	1,846,655	294,760	16%	2,293	243	11%	2,396,900	1,077,400	45%
South West (Inner Orbital)	951,399	135,195	14%	1,134,900	104,511	9%	1,334	82	6%	1,381,200	673,900	49%
South Central (Inner Orbital)	283,964	31,714	11%	317,550	38,166	12%	368	16	4%	379,600	193,000	51%
South East (Inner Orbital)	551,581	125,003	23%	520,825	169,010	32%	757	150	20%	802,800	302,900	38%
South Central Radial	916,857	108,221	12%	863,835	64,422	7%	1,190	137	12%	1,223,000	569,400	47%
South West Radial	1,666,060	210,179	13%	1,829,625	138,237	8%	2,304	277	12%	2,364,500	1,066,200	45%
South East Radial	884,030	186,359	21%	758,315	232,760	31%	1,176	282	24%	1,225,900	437,500	36%
South East	3,326,636	491,630	15%	3,325,155	418,491	12.6%	4,504	691	15.3%	4,646,700	1,980,700	42.6%

Area	Average Workplace Earning	% South East Average	Average Resident Earning	% South East Average		Average House Price (2019)	Affordability Ratio (2019 - %)		Total Carbon Emissions (2018) kTCO2	Transport Carbon Emissions (2018) kTCO2	Minor Road Carbon Emissions (2018) kTCO2	Carbon Emissions per capita TCO2	Transport Carbon Emissions per capita TCO2	Minor Road Carbon Emissions per capita TCO2	Transport as % of total Carbon emissions
Outer Orbital	28,642	96%	30,701	93%		290,389	9.5		13,737	6,017	2,178	4.0	1.7	0.63	44%
South West (Outer Orbital)	29,144	98%	30,847	93%		273,147	8.9		6,959	3,183	1,046	4.3	2.0	0.64	46%
South Central (Outer Orbital)	28,247	95%	31,525	95%		326,031	10.3		5,181	2,223	924	3.7	1.6	0.65	43%
South East (Outer Orbital)	27,363	92%	29,831	90%		260,757	8.7		3,285	1,305	449	3.8	1.5	0.52	40%
Inner Orbital	30,907	104%	35,231	106%		360,162	10.2		19,669	9,368	2,118	5.0	2.4	0.54	48%
South West (Inner Orbital)	31,038	100%	36,506	110%		395,787	10.8		11,086	5,231	1,298	4.9	2.3	0.58	47%
South Central (Inner Orbital)	31,879	100%	35,202	106%		406,076	11.5		3,125	1,523	381	4.9	2.4	0.60	49%
South East (Inner Orbital)	30,236	100%	33,181	100%		295,557	8.9		6,640	3,134	613	5.0	2.4	0.46	47%
South Central Radial	29,582	99%	32,665	99%		350,822	10.7		8,306	3,746	1,305	4.1	1.8	0.64	45%
South West Radial	30,318	102%	34,151	103%		343,180	10.0		18,045	8,414	2,344	4.7	2.2	0.61	47%
South East Radial	29,155	98%	31,912	96%		281,902	8.8		9,327	4,123	987	4.6	2.0	0.48	44%
South East	£29,807	100.0%	£33,108	100.0%		£324,890	9.8	South Central Radial Area Study Evidence Base	34,496	15,764	4,462	4.5	2.1	0.58	46%



Appendix C

Development Opportunities and Challenges

Development Opportunities and Challenges (1 of 2)

Major Economic Hub	Main location of housing growth	Main location of employment growth	Strategic and Major Road Network risks	Public Transport opportunities	Active Transport opportunities
Bognor Regis	Periphery of the town e.g. west of Bersted (6,250 homes) and Pagham North (2,000 homes).	The northern side of the town.	Poor: Development risks adding more stress to the A259 and the A269.	Fair: Some development close to the rail station, however most on the periphery of the town.	Fair: Approximately half of planned developments will occur in locations accessible to the town centre/public transport sites by walking/cycling.
Brighton and Hove	Across the area, particularly at the Marina and along the River Adur e.g. the Shoreham harbour development (2,425 homes).	Predominantly in the city centre.	Poor: Pressure will be added to the A259, A23 and A270. These roads already see significant congestion.	Good: Most development will be well served by Brighton, Southwick, Hove and Mouslecoomb rail stations.	Good: Most development is situated within walking/cycling distance of the town centre and/or public transport hubs.
Burgess Hill/ Haywards Heath	North west of Burgess Hill (3,500 homes). South of Haywards Heath e.g. Rookery Farm (360 homes). Centre of Burgess Hill.	N/A	Poor: Developments risk adding some strain to the A272 and the A2300. These routes currently see some congestion in the AM peak.	Fair/good: Development will be to the south and west of the rail stations in Haywards Heath, and near Wivelsfield In Burgess Hill.	Fair: Most of this development will occur within reasonable walking/cycling distance of the public transport network/urban amenities.
Chichester	Mostly to the north east of the city e.g. North East Chichester Strategic Development (200 homes) and the Land North of Stane Street (300 homes).	One major site to the west of the city, and one between Chichester and Tangmere.	Poor: Pressure will be added to the A27 and the A259. The A27 already sees significant congestion in the AM peak.	Fair: Most development will occur over 1.5km to the north of Chichester station.	Fair: Most housing development is on the periphery of Chichester urban area, but within feasible walking/cycling distance of the train station/town centre.
Crawley/ Gatwick	Most development in the centre e.g. 15-29 The Broadway Northgate Crawley (78 homes), with some to the west e.g. as Kilnwood Vale, (1,200 homes).	Some development in the Crawley town centre and major development at North Gatwick.	Poor: Most development planned close to the A2011 and the A2220, could add strain to the M23 These A-roads already see significant congestion.	Good: Most development will occur close to Crawley station.	Good: Most housing development in the city centre/within walking and cycling distance of public transport.
Eastbourne	Most development in the centre in disparate sites e.g. 20 Upperton Road (73 homes), and to the north near Polegate and Stone Cross.	Predominantly near the harbour and the town centre.	Poor: Developments risk adding strain to the A27 and the A22. Both these roads see some congestion near major intersections.	Good: Most housing development planned near Eastbourne and Polegate stations.	Good: Most housing development planned within walking/cycling distance of public transport sites and the town centre.

Development Opportunities and Challenges (2 of 2)

Major Economic Hub	Main location of housing growth	Main location of employment growth	Strategic and Major Road Network risks	Public Transport opportunities	Active Transport opportunities
Epsom/Ewell	Focused around Epsom e.g. the TK Maxx store development (65 homes).	N/A	Poor: Developments will centre around the A24, which risks adding strain here. This road already sees major congestion in the AM peak.	Good: Most development planned around Epsom railway station.	Good: Future developments will be situated within walking/cycling distance of Epsom train station.
Hastings/Bexhill	In Hastings development is focused in the town centre e.g. Hastings Station Yard (103 homes) and around the perimeter ring road. In Bexhill development is focussed on the perimeter of town e.g. Gullivers Bowls Club (39 homes).	In Hastings, focused in the town centre and around the perimeter ring road in the north east of the town. In Bexhill, mostly on the perimeter of town.	Poor: Developments risk adding pressure to the A259 between Hastings and Bexhill and the A21 into Hastings.	Poor: In Hastings, some development will occur near the railway station, but most will occur on the perimeter of the town to the north east. In Bexhill, development is also quite far from the town centre.	Fair: Approximately a third of development will occur in sites which are beyond easy walking/cycling access of the city centre.
Horsham	Town centre e.g. St Marks Court Chart Way (203 homes)	One major site to the north of the A264.	Fair: May add some strain to the A24 and A264, although these roads are currently relatively uncongested.	Good: Most developments are close to Littlehaven and Horsham stations	Good: Most future development planned within walking distance of key amenities and transport hubs.
Redhill/Reigate	Mostly in Redhill e.g. Marketfield Way (153 homes).	Mostly in Redhill.	Poor: May add some strain to the A23. This road already suffers from serious congestion.	Good: Most development will occur close to Redhill train station.	Good: Most future development is planned within walking and/or cycling distance of employment sites, amenities and public transport hubs.
Tonbridge/Royal Tunbridge Wells	In the centre, to the north east e.g. High Brooms (170 homes) and the south west e.g. Telephone Engineering Centre (170 homes).	In the town centre.	Good: Unlikely to have a significant impact on the Strategic or Major Road Networks.	Good: Most development will occur near Tunbridge wells station.	Good: Most future development is planned within walking and/or cycling distance of employment sites, amenities and public transport hubs.
Worthing	There will be some housing development around the city centre, with some closer to Lancing.	The majority of job growth will happen around Worthing city centre.	Good: Unlikely to add significant additional strain to the road network.	Good: The majority will occur close to the city centre.	Good: The majority of development is planned within walking and/or cycling distance of employment sites, amenities and public transport hubs.

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