

Report prepared to support the development  
of the Transport Strategy for the South East

# Freight, logistics and gateway review

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Transport for South East

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# LOGISTICS AND GATEWAY REVIEW





Transport for South East

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## LOGISTICS AND GATEWAY REVIEW

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## ***APPENDICES***

Appendix A: Stakeholder themes

Appendix B: Full survey results

Appendix C: Gateway analysis

# 1 INTRODUCTION

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## 1.1 AIMS OF THE STUDY

- 1.1.1. The aim of this study is 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 and beyond to ensure that these issues are considered the development of the Transport Strategy. It will describe the current pattern of freight activity, analyse the implications of future demand changes, identify how TfSE can capitalise on opportunities and mitigate the risks identified as part of the study. This will allow for TfSE to plan for future freight demands and incorporate this into their Transport Strategy.

## 1.2 TRANSPORT FOR THE SOUTH EAST

- 1.2.1. The South East is home to the UK's busiest international and national transport infrastructure – the busiest airports serving the most destinations, ports served by the major container shipping lines, cross channel ferries and Eurotunnel, the busiest passenger rail network in the country, and some of the busiest motorways, notably the M25, M20, and M3.
- 1.2.2. The Transport for the South East (TfSE) Economic Connectivity Review (2018) identified that the transport and logistics sector in the South East generates a Gross Value Added (GVA) of over £8 billion per year and acts as an influential driver of the UK economy.

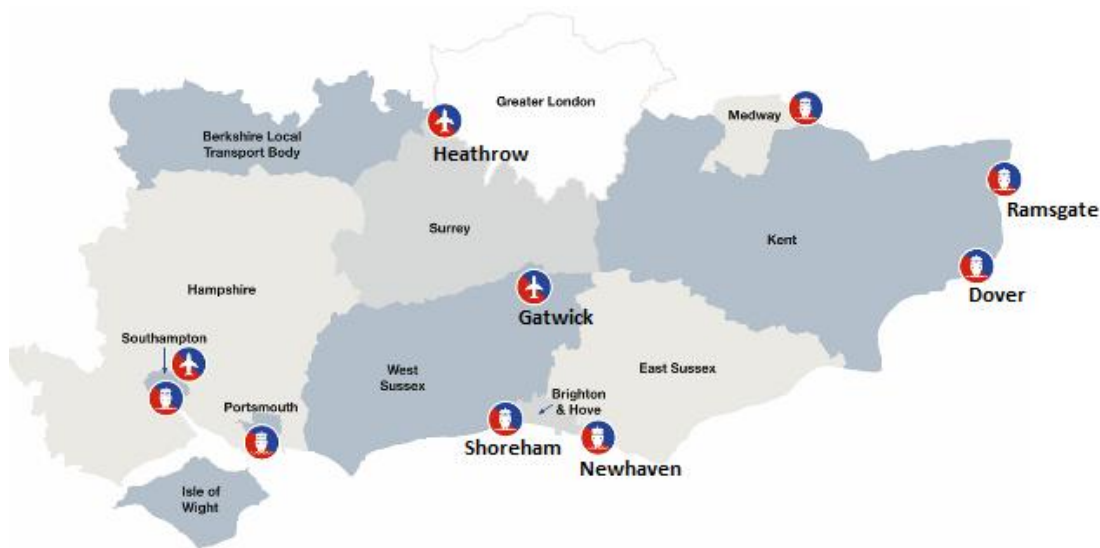


1.2.3. TfSE is an emerging Sub-national Transport Body (STB) and covers: Berkshire, Brighton and Hove, Kent, Hampshire, the Isle of Wight, Surrey, East Sussex and West Sussex. The TfSE area includes 16 local transport authorities and five Local Enterprise Partnerships (LEPs).

1.2.4. Transport for the South East's (TfSE) vision statement states:

"The South East is crucial to the UK economy and is the nation's major international gateway for people and businesses. We will grow the South East's economy by facilitating the development of a reliable, high quality, sustainable, integrated transport system that makes the region more productive and competitive, improves access to opportunities for all and protects the environment".

**Figure 1-1 – Map of the TfSE area**



1.2.5. Supporting this are a number of strategic principles:

- Ensuring the delivery of a high quality, sustainable and integrated transport system that supports increased productivity to grow the South East and UK economy and compete in the global marketplace
- Facilitating the development of a high quality, sustainable and integrated transport system that works to improve safety, quality of life and access to opportunities for all
- Facilitate the delivery of a high quality, sustainable and integrated transport system that protects and enhances the South East's unique natural and historic environment

1.2.6. The role of TfSE is significant in the development of a transport strategy that covers a geographically significant and economically important area and this is especially important for the freight and logistics sector. This commission forms part of a larger piece of work to develop the overall transport strategy.

## 1.3 BACKGROUND AND PURPOSE OF THE COMMISSION

- 1.3.1. Within the context of the strategic priorities, and recognising the reliance on the South East for the UK's import/export performance, one of TfSE's aims is to facilitate 'improved connectivity between international gateway ports, airports and Eurotunnel Terminals and their markets within the South East and to the wider UK and the rest of the world.' This was reflected in the Economic Connectivity Review (ECR) which highlighted the importance of connectivity to the gateways in the South East to the UK and local economy. It also sets out the case for enhanced connectivity to these gateways to facilitate further economic growth. Therefore, international gateways are a particular focus of this report.
- 1.3.2. The findings from this thematic study will be incorporated into the overarching Transport Strategy.
- 1.3.3. The key lines of enquiry within this study include:
- Background
    - current conditions and future issues and opportunities in the freight logistics sector and the operations of international gateways in the TfSE area;
    - the existing economic importance of the freight and logistics sector to the South-East economy;
    - patterns of freight activity and flows identified from existing freight statistics and data from ports and gateway operators, producing plots of flows between key origins and destinations;
  - Stakeholders
    - views from port, airports and freight and logistics operators about current and future issues they face;
  - Brexit
    - potential impacts of Brexit, from a freight perspective, noting that this has been considered in more depth elsewhere as part of the overall Transport Strategy development;
  - Gateways
    - profiles of each of the key gateways in the TfSE area including Eurotunnel and Heathrow (given its proximity to and impact on the TfSE area), including current and future scale of activity, their development plans, current surface access arrangements;
    - the role of the economic corridors identified in the Economic Connectivity Review in facilitating improved access to gateways;
    - identification of the impact of current planned infrastructure interventions to facilitate improved access to gateways; as well as identifying any additional interventions required to improve access on the economic corridors;
  - Future
    - emerging trends and future influences on demand;

- collation of the findings of existing research and evidence on the potential impact of evolving technology, economic conditions and consumer habits; and
- Research gaps and conclusions
  - identification of gaps in the evidence and areas for further investigation and analysis.

## 1.4 STRUCTURE OF THIS REPORT

- 1.4.1. Firstly, the study considers the policy context for the freight and logistics environment and how this impacts investment and planning decisions. The study reviews the constituent parts of the TfSE area, by LEP and by Local Authority. The aim of this is to review the current programme of freight management and how local considerations have been taken into account when planning for freight and logistics at a local level.
- 1.4.2. Having established this context, the study then looks at logistics in the region, including patterns of freight movements, future trends and the economic importance of logistics for the area.
- 1.4.3. Whilst data is essential in understanding the nature, and importance of freight in TfSE, stakeholder needs and aspirations must also be taken into account to ensure that planning and investment serve a real need and are appropriate to achieve the desired outcomes. Therefore, the themes identified as part of the stakeholder consultation process are presented.
- 1.4.4. International gateways are of key importance to the region and the UK economy and therefore the study has analysed their current and future strengths and weaknesses. The study has used SWOT analysis to review the performance of the key gateways. The review considers access to gateways as part of the assessment of the performance of the key freight corridors in the region.
- 1.4.5. Whilst the study has considered a wide range of data sources as well as primary research through engagement with stakeholders', gaps in evidence have been identified which will need to be filled to allow for a full picture of freight opportunities and threats to be fully evaluated.
- 1.4.6. The report concludes with high level conclusions and sets out high level interventions available to TfSE for consideration.

## 1.5 METHODOLOGY

### DATA COLLECTION: KEY INPUTS INTO THIS STUDY

- 1.5.1. Whilst there is limited freight data available, there have been a number of important studies undertaken recently which highlight the necessity for improved connectivity within the freight and logistics sector. These include:
  - The DfT's study on Port Connectivity;
  - The NIC Future of Freight Study;
  - Highways England study into International gateways and the strategic road network;
  - TfSE Economic Connectivity review;
  - TfL Freight Strategy; and
  - DfT's Future of Mobility: Urban Strategy.

- 1.5.2. These, as well as others, will be considered as part of this study.
- 1.5.3. As the wider Transport Strategy develops the proposed infrastructure improvement and investments will be included, where this fits within the timelines of this study. This we will supplement this with known specific freight investments, particularly for Network Rail.
- 1.5.4. The study has reviewed the Strategic Economic Plans produced by the LEPs in the TfSE areas and transport and economic strategies produced by the local authorities across the area to identify:
- Scale and location of planned population and employment growth
  - Industrial and business focus, including clusters of industry
  - Transport investment proposals
- 1.5.5. As part of the data gathering exercise the study has reviewed and collated various datasets relating to freight movements from a variety of sources which include:
- Continuing Survey of Road Goods Transport;
  - DfT Port Statistics;
  - Traffic counts undertaken by DfT and Highways England; and
  - Network Rail's corridor level PolkaDot model
- 1.5.6. The study has also reviewed data relating to future forecasting; these datasets include:
- National Road Traffic Forecasts for freight;
  - Ports forecasts;
  - Rail freight forecasts from Network Rail; and
  - Emerging published forecasts from the NIC Future of Freight research.

## **ANALYSIS**

- 1.5.7. As well as analysis of the data gathered mentioned above, the study has examined the future by looking at the significant trends affecting the logistics sector in the TfSE area. The existing policy framework has been reviewed to ascertain how these factors affect the recommendations for future policy making. As part of this the importance of the gateways has been considered as well as the economic significance of logistics in the area.

## **STAKEHOLDERS**

- 1.5.8. Whilst a robust approach to data analysis is essential to developing an understanding of the freight and logistics industry within the area, stakeholder views from port, airports and freight and logistics operators are critical to get a full picture of the needs and aspirations of an industry which contributes significant economic value to the area. This enables appropriate interventions to be developed that allow the industry and therefore the area to reach their economic potential. This has been a key part of the study and stakeholders have been engaged throughout the development of this study through one to one discussions as well as an online survey to expand the reach and scope of stakeholder views.

## 2 NATURE AND STRUCTURE OF FREIGHT AND LOGISTICS



- 2.1.1. This chapter provides a general introduction to logistics, and considers the economic importance of logistics generally and in the South East. It goes on to look at the role of each mode involved in inland transport nationally and in the South East and outlines the main drivers of change in the sector.

## 2.2 LOGISTICS

- 2.2.1. The Chartered Institute of Logistics and Transport (CILT) defines logistics as “the time-related positioning of resource.” It is also described as the five rights. Essentially, it is the process of ensuring that goods or services are:

- In the right place;
- At the right time;
- In the right quantity;
- At the right quality; and
- At the right price.

- 2.2.2. The significance of these definitions is that logistics is about much more than transport. The challenge facing logisticians is minimising the cost of the entire supply chain while meeting tough demands from their customers (internal and external) in terms of delivery lead times and other quality factors.
- 2.2.3. As transport is only one part of complex supply chains, decisions may be made which improve the efficiency of a business overall, but result in the increasing of distances that goods are transported or their frequency (potentially leading to lower average payloads and more movements). Prime examples include centralisation, just in time manufacturing, and same day or same hour deliveries. For example, just in time manufacturing (JIT) expects suppliers to deliver just before components are required, often at the expense of waiting for a load to be full.
- 2.2.4. The industry can be defined in broadly three ways:
- Long-haul freight occurs largely along motorways and trunk routes (as well as major rail corridors), moving goods between ports, factories and national distribution centres;
  - Regional distribution consists of shorter, more disaggregated journeys, often from national to regional distribution centres and to out-of-town retail sites; and
  - Urban and last-mile (even last metre) distribution connects regional distribution centres with urban retailers and consumers, usually in smaller, more frequent deliveries.
- 2.2.5. For the TfSE area, all three categories of logistics are important, although long haul freight originating from or destined for the international gateways is a key consideration. Therefore, this freight study considers all levels of freight movement.
- 2.2.6. Whilst this study focusses on the connectivity of the transport elements of logistics within the TfSE area, it is important to remember the wider picture of economic efficiency when considering solutions and the fact that freight does not stop at geographical boundaries in terms of its impact.
- 2.2.7. Decisions about where logistics hubs are situated and the resulting transport plans are based on the optimum location given the inbound and outbound origins and destinations for that particular supply chain. This is then defined by availability of appropriately priced and sized warehousing and labour markets. A lack of either of these will result in a less than optimum network resulting in extra miles and inefficiencies. Therefore, logistics has a land use planning aspect as well as a transport aspect.

## 2.3 SIZE OF THE INDUSTRY

- 2.3.1. In 2016, an estimated 1,472 million tonnes of goods were moved by road and rail freight in the UK. The UK's freight and logistics sector comprises around 195,000 enterprises, employing 2.5 million people and contributing £121 billion gross value added (GVA) to the economy.
- 2.3.2. The quantity of freight moved in the UK, when measured as tonne kilometres, has increased over time, with distance travelled increasing more quickly than the volume of goods transported. Since the mid-1990s, the growth in total tonne kilometres has been at a lower rate than Gross Domestic Product (GDP), showing a decoupling of UK GDP and the intensity of freight activity.
- 2.3.3. The freight industry is a disparate industry, with a large proportion of SMEs. When considering how to work with the industry this will affect how it responds to different interventions. This needs to be



considered when consulting with the industry and developing any approach that impacts freight and logistics.

## **2.4 ECONOMIC IMPORTANCE OF LOGISTICS IN TFSE**

- 2.4.1. The South East adds more than £200 billion to the UK economy each year and this is forecast to grow to over £330 billion per year in the next 30 years. Even under this 'business as usual' scenario with a corresponding increase in employment from 4 million to 4.5 million jobs, a significant increase in investment is required in transport and related infrastructure.
- 2.4.2. In addition to global competition, the area's outstanding export performance, which relies on reliable and efficient transport of goods and people to the International Gateways of the South East including the two busiest UK airports – Heathrow and Gatwick; Southampton – a deep-sea port on the main international shipping line; Port of Dover – through which one seventh of all UK trade passes and Europe's busiest ferry port; and a high speed railway link to Europe via the Channel Tunnel Rail Link.
- 2.4.3. Within the TfSE Economic Connectivity Review a number of priority industrial sectors within the area:
- Advanced manufacturing;
  - Creative industries;
  - Financial and professional services;
  - IT and data services;
  - Low carbon environmental;
  - Marine, maritime and defence;
  - Tourism; and
  - Freight and Logistics
- 2.4.4. These sectors account for more than 36% of total GVA of the South East and when the wider supply chains of these sectors are included, this grows to over half.
- 2.4.5. Many industries in the South East have a reliance on efficient logistics services – in particular construction, retail and maritime, but also creative industries and IT which rely on speedy transport of packages.
- 2.4.6. As well as being an enabler for other businesses, the logistics sector is a key component of the economy in the South East its own right. Transport and logistics with TfSE alone is currently generating more than £8bn per annum to the UK GVA and is forecast to grow in the future. Logistics plays an economically vital link between the international gateways of the South East and the UK's international businesses.
- 2.4.7. As part of the review of priority sectors, Table 3-5 - Employment by LEP in Chapter 3 shows the contribution logistics and transport makes to employment levels.

### **SUPPORTING TFSE STRATEGIC PRINCIPLES**

- 2.4.8. Freight and logistics has a key role to support the delivery of TfSE's strategic principles.

**Table 2-1 – TfSE strategic principles and the importance of freight and logistics**

TfSE Key Strategic Principles	Importance of Logistics
Principle 1: Ensuring the delivery of a high quality, sustainable and integrated transport system that supports increased productivity to grow the South East and UK economy and compete in the global marketplace.	The efficient movement of goods is a key contributor towards this principle. Logistics supports jobs, helps with the delivery of new homes, and enables trade. The logistics industry has a role to support these principles if the economic environment, created by TfSE is right but could help TfSE deliver this through improvements in efficiency and through innovation in services.
Principle 2: Facilitating the development of a high quality, sustainable and integrated transport system that works to improve safety, quality of life and access to opportunities for all	Efficient logistics can contribute to this by providing good quality goods and services and jobs to communities. Freight transport has significant impacts on road safety and communities which must be addressed by businesses and within TfSE's transport strategy. The provision of appropriate facilities for freight movements is part of creating a high quality, safe and sustainable logistics industry.
Principle 3: Facilitate the delivery of a high quality, sustainable and integrated transport system that protects and enhances the South East's unique natural and historic environment:	The logistics industry has a major role to play in reducing emissions through technology and more efficient operations. This can be supported by TfSE and its partners through the development of appropriate conditions (low emission zones, delivery restrictions etc) that create the right behaviours.

## **COST OF CONGESTION**

- 2.4.9. The freight transport industry suffers from congestion, but it is also a contributor to congestion. The NIC "Better Delivery" report found that the contribution that road freight makes to morning peak congestion – the main driver of highway investment – is reduced as freight is a lower percentage of morning peak traffic than at other times of the day.
- 2.4.10. Nationally there are widely varying estimates of the cost of congestion for the freight industry. The NIC Better Delivery report cites that congestion costs an estimated £3 billion per annum to the freight sector. However, such estimates are generally based only on the increased cost of haulage due to delays. They do not factor in the secondary impacts of delays, including, for example, missed deliveries or even production lines having to stop.
- 2.4.11. The Economic Connectivity Review looked at the cost of congestion on the main corridors within the TfSE area. This estimated the total cost of congestion to businesses to be £389 million in the base year, potentially rising to £1.1 billion by 2041. Of the base year total cost to business, £97.5 million is the cost of congestion for Light Goods Vehicles (LGVs), and £186 million is the cost of congestion for HGVs (The remainder is the cost to business travellers in cars).

## 2.5 ROLE OF MODES

- 2.5.1. Road transport dominates inland freight movements – carrying two-thirds of goods moved. But in recent years the mix of road freight traffic has changed – the number of HGV kilometers travelled has reduced, while the number of vans has increased markedly. Despite the dominance of road freight, there has been substantial growth in rail freight, up by almost 50 per cent over the past decade. This growth has particularly been in the existing bulk and unitised markets, and much has involved the transport of imported goods, but some has been traffic previously carried by road.
- 2.5.2. With energy consumption and the associated CO<sub>2</sub> being a key issue for government and society, it is interesting that whilst HGVs remain dominant for freight, emissions from vans are a growing concern. There is however, currently insufficient evidence to indicate the contribution of vans used for freight rather than service or domestic usage.
- 2.5.3. One of the reasons for road's high freight market share is the relatively short distances that much freight travels. Analysis of the origins and destinations of goods shows that, on average, around 70 per cent of road freight has its origin and destination within the same region of the UK.
- 2.5.4. Rail freight moves 9% of goods in the UK, with 17.2 billion net tonne kilometres of freight moved on the railways in 2016.<sup>32</sup> Since 2013/14 rail freight volumes and revenues have been affected by the rapid fall in demand for the haulage of coal for electricity generation, making these the lowest volumes since the late 1990s.
- 2.5.5. A broad estimate for this study of rail freight modal share is that rail accounts for 7% of the tonnage lifted for inland transport to, from, or within the region. Most road transport is relatively short distance, and the rail volume share rises to 18% when considering only movements to and from the region (excluding movements that stay within the region).
- 2.5.6. UK's coastal ports are the principal gateway to our economy, handling 95 per cent of the country's imports and exports by weight in 2017 and the vast majority of the UK's international road freight. The weight of freight handled by UK ports peaked in 2005 at 585 million tonnes before declining to 481 million tonnes in 2017, due mainly to the reduction in the movements of fossil fuels, particularly North Sea oil and gas exports. However, there have been increases in key areas such as roll on and roll off which has risen to 107 million tonnes in 2017.
- 2.5.7. Inland waterways carry a small percentage of freight, but this does include some movements from Thames wharves in the TfSE area into London. Coastal shipping (between UK ports) is more significant, but is generally focussed on shipments of bulk materials, for example between oil terminals and refineries.
- 2.5.8. Air freight transports less than one per cent of UK trade by tonnage but represents approximately 40 per cent of UK trade by value with non-EU countries. Almost 70 per cent of air freight by weight travels in the 'belly holds' of passenger jets, rather than in dedicated freight aircraft.<sup>11</sup> This means that freight movements tend to be concentrated at the airports with the greatest number of long haul passenger flights. As such, Heathrow is the UK's hub for air freight movement, with around 86 per cent of UK belly hold air freight passing through it, which accounts for 65 per cent of all air freight in the UK. East Midlands and Stansted Airports are the UK's hubs for dedicated freight aircraft.

## 2.6 KEY LOGISTICS TRENDS

- 2.6.1. Four key trends can be identified as being the primary causes of change impacting the freight and logistics industry, which whilst national have impacts on the TfSE area too:

### CUSTOMER DRIVEN CHANGES

- 2.6.2. The move towards e-commerce is clear, with almost 20% of UK retail sales being recorded online. This is driving other changes such as increased home deliveries, same day and same hour deliveries, and click and collect. Changing consumer habits include changes in the way we use cities, with less shopping, more at-home eating and entertainment, and a shift of purchasing power from material things to virtual things or experiences e.g. declining record sales and growing use of online streaming. The consequences of this on freight are significant for urban areas, with very low load factors for delivery vehicles in cities (e.g. an average of 38% for vans in London) (ALICE/ERTRAC, 2014).
- 2.6.3. Consumers are driving other changes through the supply chain; this includes concerns about environmental issues such as waste, a preference for locally sourced products, or pressure to reduce greenhouse gas emissions. In addition to consumers making different choices, some changes are prompted by wider societal changes such as population growth, urbanisation and new working and living demands.
- 2.6.4. These changes are disrupting the traditional logistics models. Giving rise to greater demands for sites in or near to large urban markets. Litchfields' undertook some work which noted that the pace of change in the sector is currently running ahead of the planning system, with 58% of authorities viewing a lack of an up to date local plan as a key barrier to meeting last mile needs (Litchfields, 2018).

### GOVERNMENT DRIVEN CHANGES

- 2.6.5. Goods traffic can be seen in two ways, both as a concern due to environmental impacts and as a necessary means to sustain the economy and grow businesses. This dichotomy is summarised, for example, in the Minister's introduction to the DfT's Freight Carbon Review (DfT, 2017): "Road freight's positive contribution to our economy extends beyond its direct employment and financial benefits - the sector is a critical enabler of wider business across the UK - of all sizes, from internet entrepreneurs to large distribution businesses. However, I am also aware that HGVs account for a significant portion of the UK's air quality impacts from transport, and am committed to working collaboratively with industry to address these issues."
- 2.6.6. Two major changes in approach from Government over the last twenty years have been the increased recognition of the impact of freight emissions, particularly greenhouse gases, and appreciation that efficient freight transport is an enabler of economic growth.
- 2.6.7. Response to the challenge of freight emissions has been set out in the Fifth Carbon Budget (Department for Business Energy and Industrial Strategy, 2016) and the Freight Carbon Review (DfT, 2017), and there is some common ground between dealing with emissions and dealing with congestion (more efficient use of vehicles; fewer trips). Policy to improve the efficiency of freight is less developed, although there is substantial funding being devoted to innovation and new technology.

- 2.6.8. In cities, local and city authorities have had a much more direct impact on freight movements. While there is a clear understanding of the importance of efficient deliveries to local economies, cities see the urgent need to tackle air quality and congestion. In a positive light, many cities wish to become more pleasant, healthy, and safer places to live and work – this has led to proactive policies such as Low or Zero Emissions Zones and pedestrianisation.
- 2.6.9. The challenge of delivering to cities, with a growing preference for electric or human power for the last mile, means that more and more businesses are seeking to tranship goods from trunking vehicles to delivery vehicles around the city periphery. This disconnect between trunking and delivery has important implications for businesses and transport planners, such as the use of smaller vehicles and the need to provide land for new logistics uses.
- 2.6.10. The revised National Planning Policy Framework (NPPF) (paragraph 107) states the “importance of providing adequate overnight lorry parking facilities, taking into account any local shortages” to promote the need for overnight lorry parks and reflecting the current deficiency across the UK, including the South East.

## **INDUSTRY DRIVEN CHANGE**

- 2.6.11. At the same time as customer driven changes (market) and government driven changes (legislative environment), the logistics industry continues to develop and innovate to deliver solutions which meet those competing needs. In the UK in particular, logistics is a low margin activity, with highly competitive businesses ranging from owner operators to major multinational businesses. Technological and operational changes provide opportunities for disruptive entrants and new solutions. There is considerable sharing of experience and expertise across the world.

## **THE IMPACT OF TECHNOLOGY AND DATA ON FREIGHT AND CONGESTION**

- 2.6.12. Technology can act as a driver and enabler of change. The logistics sector is already taking on board technological changes which affect every element of their operations, from automation of warehouses to real time monitoring of haulage fleets. Where available, the industry has been quick to adopt changes in vehicle technology, whether in the form of more fuel efficiency, driver assistance / awareness devices, or safety monitoring devices. In urban areas there has been a rapid uptake of electric vehicles for last mile deliveries.
- 2.6.13. The way that freight is managed is being changed by delivery management systems (that can plan and monitor every delivery end-to-end), online collaboration tools, and sophisticated fleet management systems. In the future, change is expected to be even more rapid. Connected and automated / autonomous vehicles, low or zero emission vehicles for trunking operations, technology, and better availability of data has the potential to revolutionise the way that supply chains are managed. This is considered further later in this study but is considered in more detailed as well as part of Lot Ds output.

## **2.7 IMPACTS OF LOGISTICS**

- 2.7.1. Efficient logistics is a fundamental requirement of a successful economy. Fast, frequent, and low-cost freight transport allows businesses to reach suppliers and markets and encourages businesses to invest. Logistics is a major employer in its own right. However, logistics also has impacts on the environment and society. This is particularly true for road freight.

2.7.2. The following text from the NIC Future of Freight report concisely summarises the other impacts of freight transport.

*“Despite being cost efficient; freight activity has a range of negative consequences. All major forms of freight create harmful emissions that reduce air quality and contribute towards climate change. Freight contributes to congestion, and congestion affects the quality of freight services to customers.*

*HGVs only constitute five per cent of the total vehicle mileage in Great Britain but they contributed 16 per cent of the UK’s greenhouse gas emissions from transport in 2014.*

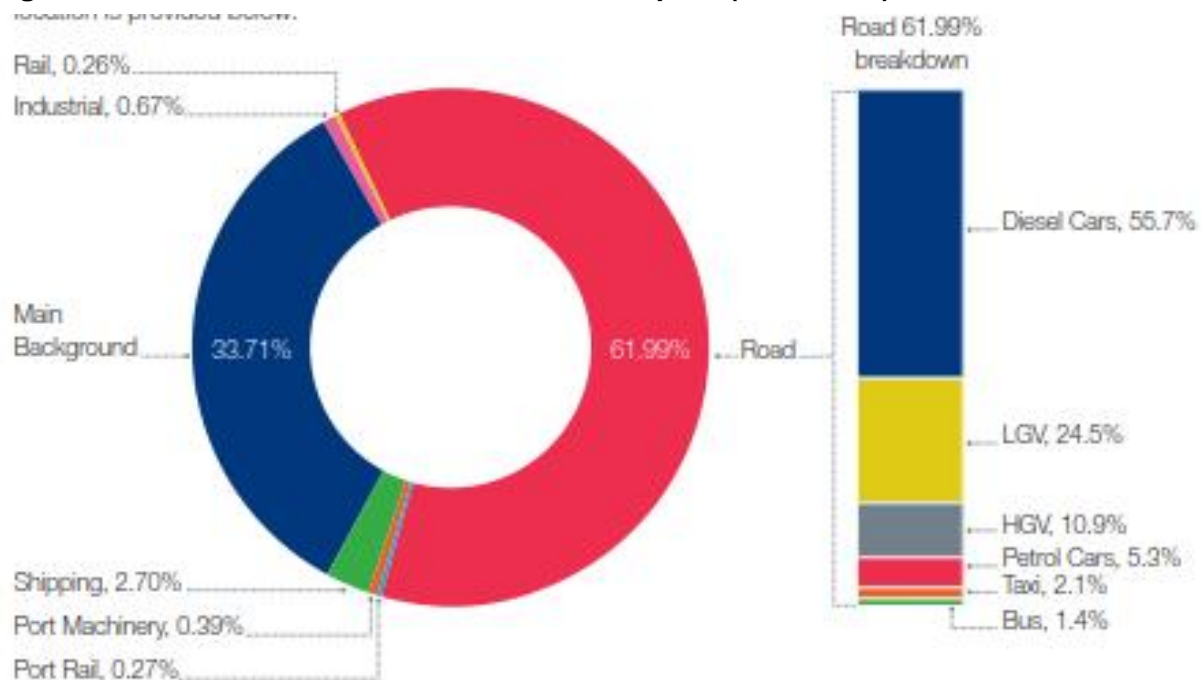
*There is unlikely to be a single approach to reducing the harmful effects from the freight system. However, emerging technologies and alternative fuels could play a substantial role in reducing emissions and it is likely that a mixture of policy and disruptive technology will help in reducing other unwanted by-products”.*

2.7.3. In addition to greenhouse gas emissions, freight traffic also contributes to poor air quality, which is particularly concentrated in urban areas. 13 per cent of nitrogen oxide (NOx) pollution from road transport sources came from HGVs and 32 per cent from LGVs. In 2016, HGV and LGV tailpipe emissions together accounted for 11 per cent of PM10 and 17 per cent of PM2.5 pollution from road transport.

2.7.4. Emissions from road freight – greenhouse gases, NOx, and particulates – are all expected to fall over the next five to six years mainly because of improvements in engine technology such as EURO VI compliant engines and better fuel efficiency.

2.7.5. In TfSE for example, Southampton port access routes suffers in particular from poor air quality. Figure 2-1 illustrates the role of road traffic on air quality in this location, but it is worth noting the relatively low contribution from HGVs.

**Figure 2-1 – Source emissions on A33 Southampton (ABP, 2018)**





- 2.7.6. The Government's Road to Zero strategy outlines a number of schemes that aim to further reduce road freight emissions including; a voluntary 15 per cent reduction of greenhouse gas emissions by 2025, research projects with Highways England assessing the opportunities for zero emissions technologies for HGVs, and potential reform to Vehicle Excise Duty (VED) to encourage uptake of the cleanest vans.
- 2.7.7. Freight transport both contributes to congestion and is a victim of it. Congestion tends to occur at pinch points on road and rail networks, particularly where long-distance traffic meets local traffic and around major interchanges such as ports and airports. Freight is a significant component of road traffic generally and its contribution is magnified by slower speeds, longer braking distances and involvement in a disproportionate percentage of incidents.
- 2.7.8. Freight congestion cannot be considered in isolation from general congestion and the wider demand for road and rail space. Freight's specific contribution to road congestion is complex. HGVs are disproportionately concentrated on the Strategic Road Network (SRN). Only five per cent of all vehicle miles were completed by HGVs in Great Britain in 2017, but this percentage increases to 11 per cent of mileage on motorways and nine per cent of mileage on urban and rural A roads.
- 2.7.9. Once translated into road capacity, HGVs occupy space equivalent to 2.5 Passenger Car Units (PCUs). Using this measure, HGVs account for 12 per cent of traffic across all roads in Great Britain, 25 per cent of traffic on motorways, and 19 per cent of traffic on urban and rural highways.
- 2.7.10. There is limited evidence to suggest that HGVs are a significant contributor to congestion and, given the ratio of cars to HGVs on the UK's roads, it is likely that congestion caused by the insufficient capacity of a route is at least as much, if not more so, due to the volume of cars as HGVs.
- 2.7.11. By contrast, HGVs are a small component of urban traffic, making up only two per cent of vehicle miles, or four per cent of traffic (again, as measured by counting each HGV as 2.5 cars), on urban roads. However, HGVs, and in many cases LGVs, have a disproportionate effect on urban congestion, particularly where they are stationary (when loading or unloading) and because of the difficulty manoeuvring them in constrained areas.
- 2.7.12. Data from London suggests that freight vehicles (HGVs and LGVs) are particularly active at peak times – the Greater London Authority states that a third of central London's traffic in the morning peak is HGVs and LGVs (though it is recognised that a significant proportion of LGVs could be for other purposes).
- 2.7.13. The logistics sector is fast moving and in recent years it has changed significantly. This has had disputing influence on the traditional supply chain models – impacting where warehouse space is needed, the size and scale of the space, the mode of transport and the systems used to manage information to make logistics happen. This has in part lead to an increasingly complex and fragmented industry. For TfSE these trends will impact how it responds to the needs of the industry; what they need now, may not be what's needed in the future and this needs to be reflected in a flexible and future focused strategic plan.

## 3 POLICY REVIEW

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- 3.1.1. This section summarises the policies, strategies and investment in freight transport at national, regional, and local levels, with a particular emphasis on the TfSE area. It also considers the various modes and major committed and planned investments.

### 3.2 NATIONAL POLICY

- 3.2.1. The review has considered freight and logistics policy at a national level from DfT, and Highways England perspectives as the key deployment route for strategies for the SRN. The study reviewed the National Infrastructure Commission (NIC) work and also Network Rail, Air and other policies and strategies as they relate to port investment.
- 3.2.2. No consideration has been given to Brexit in this section, but is picked up later in this study and as part of the wider Transport Strategy programme of work.

#### UK GOVERNMENT STRATEGY – THE LOGISTICS INDUSTRY

- 3.2.3. The importance of efficient logistics is recognised at government level. For example, the 2017 Industrial Strategy for Britain sets out a programme which includes several actions to improve supply chains and supports a focus on supply chains when planning infrastructure.
- 3.2.4. The DfT Logistics Growth Review of 2011 identified five core principles in which government can play a significant part in helping to increasing the productivity of the UK logistics industry and strengthening its role in the UK economy. These included

- giving industry greater confidence to invest;

- improving the longer-term capacity, performance and resilience of our congested road and rail networks;
- promoting the image of the sector at local level;
- reduce unnecessary regulation; and
- attracting and retaining high calibre recruits.

3.2.5. Whilst as can be seen within this chapter there are a number of documents that refer to or consider logistics, there is however no national industrial or transport strategy specifically for the logistics sector. For TfSE this represents an opportunity within the Transport Strategy to set the agenda and to improve productivity of freight and logistics at a regional level. Table 3-1 summarises the key national strategies and policies as they relate to freight and logistics and the implications for TfSE.

**Table 3-1 - National policy in relation to freight and logistics**

Strategy	Transport Investment Strategy 2017
Key points	<p>The Investment Strategy sets out the Government's priorities and approach for future transport investment decisions. It estimates that under a high growth scenario, by 2040, congestion could cost the freight industry £3.7 billion.</p> <p>The Strategy seeks to:</p> <ul style="list-style-type: none"> <li>■ create a more reliable, less congested, and better-connected transport network that works for the users who rely on it,</li> <li>■ build a stronger, more balanced economy by enhancing productivity and responding to local growth,</li> <li>■ enhance our global competitiveness by making Britain a more attractive place to trade and invest, and support the creation of new housing.</li> </ul>
Implications for TfSE	<p>This document suggests that under current projections, growth is predicted in a number of areas. This will place more constraints on TfSE transport infrastructure.</p> <ul style="list-style-type: none"> <li>■ By 2040, traffic on England's roads is forecast to increase by between 19% and 55%.</li> <li>■ By 2030, rail journey demand is forecast to increase by 40%, and with unconstrained growth, rail freight has the potential to nearly double.</li> <li>■ Substantial growth is expected to continue in container freight, against a global backdrop of an expected doubling of seaborne trade by 2030.</li> </ul> <p>The TfSE region plays a significant role in international trade, this Strategy notes over 40% of goods by value traded with non-EU countries are carried by air freight, with Heathrow carrying more freight by value than all the other UK airports combined. The lack of freight rail connections to airports, including Heathrow mean that air freight has no reasonable potential for modal shift, and its prediction is that this is unlikely to change in terms of logistics for the foreseeable future. The long-term impact on TfSEs road network as a result could therefore be significant as growth in volumes expected to continue as Heathrow's role as the largest UK hub airport relatively unchallenged. The expected expansion of the third runway will support continued volume growth.</p> <p>Transport accounts for almost a quarter of domestic emissions, and emissions have fallen by only 1.5% since 1990. In the longer term, a key part of Government's strategy for reducing emissions from road transport is the commitment to almost all cars and vans in the UK being zero-emission by 2050, cars being responsible for roughly four times the amount of emissions of HGVs. The Government notes that road freight emissions are particularly challenging as these are no clear technological solutions at the moment. This is a fast-moving field however, and TfSE infrastructure strategy will need to be flexible enough to respond to the changing needs of the technology being developed to address environmental factors.</p> <p>The Strategy also refers to the Government's Rail Freight Strategy, published in September 2016 which signals a priority for modal shift from road to rail. Each tonne of freight moved by</p>

	<p>rail reduces CO2 emissions by 76% compared to road so shifting more freight from road to rail has potential to make a real contribution to meeting the UK's emissions reductions targets, as well as improving safety by reducing lorry miles. The Government committed £235m up to 2019, on a ring-fenced fund specifically to support investment in rail freight needs and deliver greater capacity and capability creating opportunity for more freight to be transported by rail. TfSE could be well placed to take advantage, or at least investigate the opportunity for modal shift.</p>
<b>Strategy</b>	<b>National Infrastructure Delivery Plan 2016-2021</b>
<b>Key points</b>	<p>Like the DfT Growth Review, this plan recognises that roads are the backbone of the transport system, used for almost 70% of freight. The plan sets out an ambitious infrastructure vision for the next parliament and beyond, reinforcing the Government's commitment to investing in infrastructure and improving its quality and performance. It is underpinned by a pipeline of over £460 billion of planned public and private investment. The Government is prioritising the public funding of infrastructure, putting in place the right policy framework to give investors the confidence to commit to long-term projects, and ensuring the supply chain has the certainty and tools it needs to deliver effectively.</p>
<b>Implications for TfSE</b>	<p>These ambitions are reflected within TfSEs aspirations and supports the work already undertaken as part of the Economic Connectivity Review.</p>
<b>Strategy</b>	<b>National Infrastructure Assessment 2018</b>
<b>Key points</b>	<p>The assessment predicts that the numerous and successful primary urban areas will continue to grow, but will need to heed the recommendations for sustainable growth. The Assessment recommends prioritising urban transport over intercity networks in the 2030s. The NIC notes that increasing electric vehicle uptake will still lead to increased road congestion, and planning for cycling, walking, and public transport must be integrated into growth planning, especially for cities, but it does not go so far as to recommend prioritising rail schemes over road schemes for interurban travel, despite a general theme of recommending decarbonisation measures throughout the report. Regarding road investments, the NIC predicts that by 2025, most of the Strategic Road Network will have 5G coverage, which could assist with connected and autonomous vehicle uptake. The NIC notes that it is more important to invest in maintenance and incremental upgrading of roads than in mega-projects while the impacts of exploiting new autonomous vehicle technologies remain uncertain.</p>
<b>Implications for TfSE</b>	<p>The assessment also recognises the importance of the connectivity with international gateways, which is key for TfSE and is reflected in the Economic Connectivity Report. These priorities are important inputs in the prioritisation process for investment and are reflected the outcomes of the TfSE Transport Strategy. Whilst freight was not specifically addressed within the assessment, this was the lever for the Future of Freight Study, which is discussed later.</p>
<b>Strategy</b>	<b>Industrial Strategy 2017</b>
<b>Key points</b>	<p>The strategy values the role of UK ports which handle 95 percent of UK freight by weight. This is recognised within this study where the report reviews the economic value the international gateways, including ports. Otherwise, freight is not mentioned in this strategy, but does consider personal mobility and the need to decarbonise cars and vans. Whilst not specifically relating to freight, the Industrial Strategy contains two "Grand Challenges" which have impacts on freight; one on clean growth and one on the "Future of Mobility", with both focussed on reducing carbon and pollution across the road and rail networks. The Government is also planning on alleviating congestion through higher-density use of road space enabled by automated vehicles and 5G connectivity. The Industrial Strategy predicts roll out of full-fibre broadband, new 5G networks and smart technologies all important to the evolution of the transport network. 5G will be essential to support smart motorways, autonomous vehicles, and any future freight platooning strategies, while charge points at the moment will mainly support decarbonised van-based freight movements and last mile solutions</p>

Implications for TfSE	The value the industrial strategy places on ports supports TfSE's vision and strategic principles and the "Grand Challenges" will inevitably influence the possibilities for the TfSE region and the Transport Strategy and, in the case of 5G the potential applications for freight.
<b>Strategy</b>	<b>National Planning Policy Framework 2012</b>
Key points	Paragraph 31 calls for local authorities to work with each other to develop strategies to support sustainable development such as rail freight interchanges. Paragraph 35 stipulates the need for new development to be located and designed, where practical, to accommodate the efficient delivery of goods and supplies.
Implications for TfSE	This is an important development for the freight industry but it is as yet unclear how well this is being implemented and is a potential mechanism to be explored when considering how freight and logistics is being supported within the TfSE area.
<b>Strategy</b>	<b>The Policy Statement for National Networks (NN NPS) 2014</b>
Key points	This statement sets out the need for, and Government's policies to deliver, development of nationally significant infrastructure projects (NSIPs) on the national road and rail networks in England. Like many of the documents referred to in this section this statement recognises the importance of the national road and rail networks. The Eddington Transport Study, 2006 states that "...connecting our cities, regions and international gateways play a significant part in supporting economic growth, as well as existing economic activity and productivity and in facilitating passenger, business and leisure journeys across the country. Well-connected and high-performing networks with sufficient capacity are vital to meet the country's long-term needs and support a prosperous economy" and this is reflected in the policy statement.
Implications for TfSE	For TfSE the policy shows congestion on the SRN in 2040 of which a number of are in the TfSE region. The statement supports the need for infrastructure development to protect the industry, of particular note is the development of Strategic Rail Freight Interchanges as part of the solution to improving network capacity.
<b>Strategy</b>	<b>Rail Freight Strategy 2016</b>
Key points	This strategy examines the future potential of the rail freight industry and considers what new skills and technology is required to deliver the economic benefits associated with delivering more goods by rail. This is covered in more detail in the Rail chapter of this report. The strategy highlighted the potential to reduce emissions by growing rail freight and reducing HGV journeys and as such it will accelerate activity to enable cost-effective options for shifting more freight from road to rail. This includes using low emission rail freight for deliveries into urban areas.
Implications for TfSE	Main opportunity for TfSE is associated with the Port of Southampton.
<b>Strategy</b>	<b>NIC Future of Freight Study 2018/9</b>
Key points	<p>This seminal report review options to improve the existing infrastructure, recommending ways to use new technologies and processes to transform how freight moves by road and rail through the country. The final report concludes that the UK's freight system is one of the best in the world, providing a high quality, low cost service to businesses and consumers. It notes that freight also however produces negative by-products such as congestion, carbon emissions and particulate matter, which cause harm to society and are a drag on the UK's prosperity. The Commission's central finding is that without action, freight's contribution towards congestion and carbon emissions will remain problematic. The key recommendations were:</p> <ul style="list-style-type: none"> <li>Government should commit to decarbonising road freight by 2050, including by the end of 2021 to ban the sale of new diesel-powered HGVs no later than 2040. To support this: <ul style="list-style-type: none"> <li>Government should, in conjunction with distribution and transmission network operators, prepare detailed assessments of the infrastructure required to enable the uptake of battery electric or hydrogen HGVs, including the refuelling requirements at depots and key rest areas on major freight routes.</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>• Ofgem, as part of the next energy distribution price review (RIIO-ED2) starting in 2023, should include a clear requirement for distribution network operators (in partnership with the freight industry) to map out the infrastructure upgrades and opportunities for alternative solutions, such as energy storage, required to enable large scale freight van charging at depots.</li> <li>■ Government should undertake detailed cross-modal analysis, using a corridor-based approach, of the long-term options for rail freight's transition to zero emissions, including low carbon rail services and the scope for road based alternatives. It should then publish, by the end of 2021, a full strategy for rail freight to reach zero emissions by 2050, specifying the investments and/or subsidies that it will provide to get there.</li> <li>■ To help manage peak time congestion on the urban transport network, local authorities should include a plan for urban freight within the infrastructure strategies they are developing. These plans should review local regulations to incentivise low congestion operations, consider the case for investments in infrastructure such as consolidation centres, and identify the land and regulatory requirements of new and innovative low congestion initiatives.</li> <li>■ Government should produce new planning practice guidance on freight for strategic policy making authorities. The guidance should better support these authorities in planning for efficient freight networks to service homes and businesses as part of their plan making processes. This new planning practice guidance, which should be prepared by the end of 2020, should give further detail on appropriate considerations when planning for freight.</li> </ul> <p>Government should develop a data standard for freight data collection to support local authorities, outlining the requirements for technological capability, data requirements, and data format. Such a standard must seek to ensure consistent data quality and format across technologies to allow regional and national aggregation, and should be complete by the end of 2020</p>
Implications for TfSE	<p>The report provides a very clear indication of the priority that TfSE needs to give to freight and logistics and identifies the areas that need to be addressed in order to make the most of this important sector. The NIC also seeks to support existing infrastructure developments, for example, the Transforming Cities fund which includes 2 cities within the TfSE area. For TfSE this could support the development of Southampton and Portsmouth as key logistics hubs, supporting their transport infrastructure to unlock some of the congested areas and improve the associated air quality issues.</p>

### Other policies

- 3.2.6. The preceding policies identify the Government's perspective in investment priorities for transport, and whilst in some areas, freight is omitted, the investment in transport infrastructure will impact the freight industry. However, there are other Government policies that will undoubtedly impact freight. The following briefly summarises these:

**Table 3-2 – Other national policies in relation to freight and logistics**



Policy	What is it	Impact on freight	Considerations for TfSE
UK plan for tackling roadside nitrogen dioxide concentrations 2017	Government pledges that this will be the first generation to leave the environment in a better state than which it was inherited. It includes, a goal for almost every car and van on the road to be a zero-emission vehicle by 2050 and investing over £2.7 billion overall in air quality and cleaner transport. The policy also plans to reduce nitrogen dioxide emissions by phasing out vehicles which create emissions.	Potential HGV bans resulting in increased mileage, low emission zones which have the potential to increase costs to some parts of the sector	Government scrutiny of local authority plans to ensure that they reflect these emission-dissipation measures. Government will support to reduce air pollution to legally-permissible levels in the shortest possible time is to allow local authorities to introduce access restrictions on vehicles, such as charging zones or other measures to prevent certain vehicles
The Clean Growth Strategy 2018	Here the Government emphasises the need to enable cost-effective options for shifting more freight from road to rail, including using low emission rail freight for deliveries into urban areas, with zero emission last mile deliveries. Part of the strategy to achieve these carbon budgets requires emissions from transport falling by 29 per cent from today, largely achieved by accelerating the shift to electric. This transition could involve reducing the energy and emissions intensity of road transport by 30 per cent and 44 per cent respectively. In addition to workplace and residential charging support, the Government has provided £80 million to support charging infrastructure deployment, alongside £15 million from Highways England to ensure rapid charge points every 20 miles across 95 per cent of England's SRN.	Electric Vehicle (EV) solutions for HGVs are noticeably absent and do not yet form part of the carbon budget strategy. Hydrogen vehicle solutions for HGVs are not mentioned. New powers under the Automated and Electric Vehicles Bill will allow specific requirements to be set for the provision of EV charge points or hydrogen refuelling.	TfSE need to consider the wider take up of alternative fuels for HGV that will allow infrastructure to be flexible enough to adapt to whichever alternative fuel takes dominance.
Hydrogen for Transport Advancement Programme	Provision of £4.8 million to create a network of twelve hydrogen refuelling stations. A new £23 million fund was recently announced to boost the creation of hydrogen fuel infrastructure and encourage the roll-out of hydrogen vehicles.	This could have an impact on freight as some operators and manufactures are looking to hydrogen as a viable alternative low emission solution.	TfSE need to consider the wider take up of alternative fuels for HGV that will allow infrastructure to be flexible enough to adapt to whichever alternative fuel takes dominance.

Policy	What is it	Impact on freight	Considerations for TfSE
Low emission plug in grant, 2016	Low emission vans and HGVs between 3.5 and 44 tonnes have been eligible since late 2016 for plug-in grants worth up to £20,000 for the first 200 vehicles bought using the grant. The Government is also consulting on proposals to allow category B car licence holders to drive slightly heavier vans if they are powered by a low emission technology, to encourage further uptake of cleaner goods vehicles.	Currently this is only relevant for van freight as there are no real plug in HGVs available in the UK.	TfSE need to consider infrastructure needs for plug in facilities across their region. How this relates to HGV movements is currently unclear.
Freight Carbon Review 2017	Identified a range of measures to help fleet operators reduce their emissions: <ul style="list-style-type: none"> <li>Improving fuel economy through efficient driving and in-cab driver monitoring technologies</li> <li>Optimising fleet design through retrofit technologies and improved engine efficiency</li> <li>Reducing road miles through modal shift, longer-semi trailers and further industry collaboration.</li> <li>Reducing emissions through wider use of alternative fuels</li> <li>Shifting the focus to future, more radical, solutions such as electric trucks, e-highways and hydrogen fuel cell technologies</li> </ul>	The review brings together evidence and opportunities for and barriers to reducing emissions caused by road freight. It identifies a number of emission reduction initiatives and outlines what the Government will put in place to support the industry in tackling the task of reducing greenhouse gas (GHG) emissions.	There are a number of useful freight measures to consider within this review that could help to shape support for the freight industry and this should be considered as part of any TfSE freight strategy.
Road to Zero Strategy 2018	The Government has committed to investing £1.5 billion in ultra-low emission vehicles by 2020 and the Road to Zero Strategy outlines a number of ambitious measures, including a number which may support freight. The Government has also launched an Electric Vehicle Energy Taskforce to bring together the energy and automotive industries to plan for the increase in demand on energy infrastructure that will result from a rise in the use of electric vehicles.	More widespread charging schemes will support small vehicle freight and last mile solutions. More specific to freight, the extension of the Plug-In Car and Van Grants in some form until at least 2020, will support subsidised rates for new electric vans	TfSE need to consider the wider take up of alternative fuels for HGV that will allow infrastructure to be flexible enough to adapt to whichever alternative fuel takes dominance.
National policy on E-bikes	£2 million funding package to promote e-cargo bikes, to “encourage alternate green technologies to counter the increasing usage of diesel delivery	Whilst very specific, this area highlights a national drive to address emissions from freight in urban areas with the use of EV. Latest road traffic	TfSE may need to consider how this can be encouraged as part of their urban freight planning.

Policy	What is it	Impact on freight	Considerations for TfSE
	vans that has accompanied the 15.3% increase in UK online spending in 2017.	estimates indicate van traffic increased by 4.7 per cent to 49.5 billion vehicle miles in 2016. It is unknown to date how much of this is freight related. At about the same time 16 of the UK's largest van fleet operators have signed up to the clean van commitment in a bid to go electric. In previous grants a London-based E-cargobikes.com to set up on an industrial estate in Islington and conduct grocery delivery trials in partnership with Sainsbury's. The trials showed that 96.7 per cent of orders could be fulfilled in a single e-cargo bike drop. This indicates a high potential for near-term modal shift for local and last mile freight solutions.	

## BREXIT

- 3.2.7. As part of the overall Transport Strategy programme of work a report has been produced examining the potential transport impacts of Brexit in the South East before the United Kingdom (UK) leaves the European Union (EU) (Steer and WSP, 2019). These impacts will be reassessed once a clear trajectory has been agreed by the UK government. Given the uncertainty about the terms of any exit deal, this task sets out the potential high-level consequences. A more detailed analysis will be undertaken by Lot A, once the terms of any deal or no deal are understood.
- 3.2.8. As recognised in TfSE's Economic Connectivity Review (ECR) withdrawal from the EU presents significant uncertainty. Given the level of import/export activity in the region and the associated logistics activity as part of that, understanding the terms of any agreement will be important part of the future development of the region. The impact could have positive impacts as well as negative consequences that will need to be understood, planned for and managed in both the short and longer term.
- 3.2.9. Brexit will potentially bring important changes in terms of customs procedures and other border formalities, regulatory regimes, and transport law, to name but a few. These changes could affect procurement and logistics choices and delivery lead times for EU-UK trade. Brexit will also bring changes to companies operating domestically, for instance in terms of access to skills. Brexit will also affect global trade to and from the UK, opening new opportunities (FTA, 2019).
- 3.2.10. The potential "likely" scenarios are:
- A "no deal" Brexit;
  - Norway plus;
  - Soft Brexit; and
  - No Brexit.

### Key freight issues

- 3.2.11. Aside from the economic impact on trade which is reviewed in detail in the Potential Impacts of Brexit report referred to previously, there are a number of freight specific operational concerns:
- Operations and procedures: paperwork requirements impacting the speed to import/export processes, causing delays impacting cost and creating further congestion at both sides of the import/export process;
  - Skills shortages: particularly in the movement of food/animals, that requires food safety procedures could be impacted by a lack of qualified staff to undertake control procedures. It could also exacerbate the general skills shortage in the industry;
  - Economies of scale: much import/export process is dependent on gaining return loads to improve the economics of transport. Depending on the level of restrictions of "foreign" operators on both sides of the channel could make this more difficult, pushing up cost;
  - Displacement of international gateways: if the key TfSE ports become congested, this could be an opportunity for other TfSE ports (with impacts on local road/rail networks) but could also mean a movement of trade to ports outside of TfSE – impacting transport costs; and
  - Potential development of free ports: could increase volumes and the pressure on the network

- Access to Dover: When Operation Stack was called in 2015, this had a significant impact on congestion on the surrounding roads. The uncertainty around the potential Brexit impact at Dover requires the need for contingency plans such as Operation Brock.

The FTA has identified eight priorities to support the smooth transition:

- Urgent confirmation of the terms and duration of the transition/implementation period;
- Frictionless trading arrangements during the transition/implementation period;
- Continued access for UK companies to the benefits of EU agreements with third countries throughout the transition period;
- Urgent clarification regarding the UK's customs classification system, duty rates and VAT arrangements to be used after Brexit in the absence of an agreement;
- Arrangements ensuring that conformity, sanitary and phytosanitary checks can take place at the point of production rather than at the border;
- Continued unrestricted numbers of vehicles able to cross the UK-EU border;
- Continued recognition of vocational driving licences and qualifications, such as Driver Certificate of Professional Competence; and
- Ability to retain EU workers currently employed by the UK logistics sector and continued access to EU logistics workers employed in the UK on a seasonal basis, but not permanent residents in the UK, to cope with peak demand (FTA, 2019).

## DEPARTMENT FOR TRANSPORT

3.2.12. As part of reviewing national policy the study needs to consider DfT policy and strategy in their role in planning and investing in the UK's transport infrastructure. Their overall mission to "create a safe, secure, efficient and reliable transport system that works for the people who depend on it". (DfT, 2018). There is no specific freight department, therefore the freight and logistics industry cuts across a number of functional areas within the Department. The DfT's main responsibilities are:

- Roads - Investing in, maintaining and operating around 4,300 miles of the motorway and trunk road network in England through Highways England, providing policy, guidance, and funding to English local authorities to help them run and maintain their road networks and develop new major transport schemes;
- Rail – Develop strategy for the rail industry, funding investment in infrastructure through Network Rail, awarding and managing rail franchises;
- Buses - Setting the policy framework to determine how bus services are managed;
- Shipping - Overall national maritime strategy and guidance; and
- Aviation - Setting national aviation policy, working with airlines, airports, the Civil Aviation Authority and NATS.

3.2.13. In the UK, transport functions and responsibilities are substantially devolved, to make sure "decisions are made at the right level" (DfT, 2017). Transport powers and funding devolution settlements vary nationally by government (Wales, Scotland and Northern Ireland), regionally through the recent creation of Sub-National Transport Bodies (STBs) such as TfSE and at a local level through local transport authorities. For the freight industry, which often crosses a number of authority borders, local decision making can result in an inconsistent approach to investment to support the industry.

- 3.2.14. In 2013, the Government announced a series of “Road Reform” measures, which were designed to improve the management and operations of the SRN (DfT, 2013). The Road Investment Strategy (RIS) was established as one of the main aspects of the “Roads Reform” and committed the Government to £11.4 billion of funding to road enhancement works. The types of road enhancement projects can include Smart motorways, Expressways, Junction improvements, Technology upgrades (such as signals on slip roads, Motorway Incident Detection and Automatic Signalling (MIDAS), Variable Message Signs, CCTV cameras and gantries). Whilst not specific to the freight industry any actions to improve road reliability will improve the industries productivity.
- 3.2.15. Whilst there no specific freight strategy, there are number freight specific interventions, aimed at reducing freight's impact on road capacity being pursued by DfT which include:
- HGV platooning;
  - Longer semi-trailers (LST); and
  - HGV single-carriageway roads speed limit increase.
- 3.2.16. Of particular importance to freight and to TfSE is the DfT's National survey of lorry parking 2018 which was a comprehensive study the capacity and utilisation rates of overnight lorry parking in England. The most urgent need of parking was found to be in the South East, where 37% more overnight parking spaces are required. This is discussed in more detail later in this study.

## HIGHWAYS ENGLAND

- 3.2.17. Highways England is responsible for motorways and major (trunk) roads in England (Highways England, 2018) known as the strategic road network (SRN). The SRN totals around 4,300 miles; while this represents only two per cent of all roads in England by length, these roads carry a third of all traffic by mileage and two thirds of all freight traffic.
- 3.2.18. Highways England's stated priorities are to ensure the SRN is free flowing, is safe and serviceable, is accessible and integrated, supports economic growth with a modern and reliable road network that reduces delays, creates jobs, helps business and opens up new areas for development and ensures these activities result in a long term and sustainable benefit to the environment.
- 3.2.19. Highways England notes that 1 billion tonnes of freight transported uses the SRN (Highways England, 2015); however, it currently specifies few tangible responsibilities towards the freight industry specifically. However, Highways England has commissioned a three-year programme aimed at improving their understanding of freight businesses. This programme started in late 2018 and its current status is unclear.
- 3.2.20. There is a large number of SRN roads within the TfSE area, including M2, A2, M20, A21, A27, M275, A3(M), M27, M271, M3, M4, A3 and so there is a reliance on investment by Highways England to enable growth in the area. Highways England do recognise this and have for example, acknowledged the importance of Ports and their reliance on good road networks (Highways England, 2016).
- 3.2.21. Increasingly Highways England is interacting with LEPs and Sub-National Transport Bodies (STB) in the development of local and regional transport plans reflecting a greater desire to work on SRN issues both at a strategic level and locally. Highways England engage with the STBs through a forum called the Strategic Planning Advisory Panel. This is relatively new and just getting off the



ground and therefore its effectiveness has yet to be seen. Highways England's do have key partner account managers whose aim is to ensure a regular dialogue is maintained.

- 3.2.22. Highways England Strategic Business Plan (Highways England, 2015) emphasises the importance of collaboration and consultation without committing to specific actions. It states that Highways England will:
- “Work with the freight and logistics sectors and other frequent and extensive users of the network to better understand their needs and help them achieve their business objectives; and
  - Consult with representatives of the freight and road haulage sectors to assist future network planning”.
- 3.2.23. Highways England Strategic Economic Growth Plan discusses in more detail specific potential problem areas and solutions for the freight industry (Highways England, 2017). Highways England states that:
- 3.2.24. “Supporting business productivity and competitiveness, and enabling the performance of SRN reliant sectors:
- We are also investing in innovation research and development to make journeys more reliable and efficient, and to improve communications with our customers to enable them to plan their journeys more effectively. These include working with the DfT and the freight industry on trials for freight platooning (lorry convoys) that should reduce journey times and could bring other savings for the logistics sector” – enabled/enhanced by Highways England investment in connected vehicle technology;
  - There are also large potential benefits from embracing the potential for modal shift onto the rail network for both people and businesses and for greater use of rail freight”.
- 3.2.25. A particular example of where Highways England has identified freight congestion issues is in the provision of efficient routes to global markets through international gateways: e.g. improving access to ports (Highways England, 2017).
- 3.2.26. Highways England has identified the significant contribution of goods vehicles to major incidents, and has developed an Incident Management Team, include a freight function, to improve incident management to maintain free flowing roads.

## NATIONAL RAIL

- 3.2.27. The DfT sets overall rail policy and strategic objectives and in 5-year periods, it defines the outputs required to be delivered by Network Rail (England and Wales) and setting the public funds available to deliver them. Transport Scotland has the equivalent role for Scotland. It manages the 15 passenger rail franchises in England and Wales, pays subsidies to loss-making rail franchises and receives premium payments from profit-making franchises. As well as delivering the renewal and enhancement projects within the 5-year investment programme, it is also responsible for the day-to-day maintenance of the network infrastructure.
- 3.2.28. DfT employs a rail freight team, and has published its Rail Freight Strategy (RFS) (DfT, 2016). The RFS emphasises the importance of moving goods by rail and recognises the importance of a stable policy framework to enable rail freight to grow and achieve its potential. It seeks to provide a clear

vision for rail freight, in order to provide a sense of direction from Government to help the industry plan ahead and provide greater certainty to customers and investors.

## AIR

- 3.2.29. The National Policy Statement for Airports, published by the Department for Transport in June 2018, describes the important role the aviation sector plays in supporting sectors of the economy such as business and financial services and the creative industry. The NPS sets out the need for additional airport capacity in the South East, noting that Heathrow Airport – the busiest two-runway airport in the world – is operating close to maximum capacity, while Gatwick Airport – the busiest single runway airport – is approaching maximum capacity. By the mid-2030s, all major airports in the South East are expected to be “full”, which could place the UK’s status as a major international hub at risk. The NPS argues that if the UK does not expand airport capacity in the South East, then capacity constraints would “lower economic output by making aviation more expensive and less convenient to use, with knock-on effects in lost trade, tourism and foreign direct investment”.

## PORTS

- 3.2.30. As with roads and rail, ports play a role in delivering an effective UK transport network and this is of particular importance to TfSE given the number of significant ports in the area, such as Southampton and Dover. Port policy as it relates to waterborne freight are principally centred around specific port centred projects, support to operating costs for intermodal water freight handling and support to capital costs for intermodal water freight handling facilities.
- 3.2.31. The policy for ports in England and Wales is set out in the National Policy Statement for Ports (DfT, 2017). The NPS describes the essential role ports play as international gateways in the UK, and how they support many forms of economic and social activity. These activities include freight and bulk movements; the import and export of energy supplies; tourism and leisure; and wider economic benefits such as job creation. The NPS describes an overarching objective to promote sustainable port development that caters for long-term forecast growth in imports and exports and contributes to long-term economic growth. It describes the potential for new and expanded infrastructure to:
- contribute to local employment, regeneration and development;
  - minimise greenhouse gas emissions (from port related development);
  - enhance access to ports and the jobs, services and social networks they create; and,
  - support sustainable transport by offering more efficient transport links with lower external costs.

- 3.2.32. The detailed review of the port gateways in TfSE is discussed in detailed in Chapter 5.

## 3.3 NATIONAL IMPORTANCE OF INTERNATIONAL GATEWAYS

- 3.3.1. TfSE contains three of the UK’s biggest ports, together with two airports that manage a large proportion of the UK’s aviation activity – both for freight and passengers. Their contribution to TfSE economy is significant and explored in Chapters 2,3 and 5 which also demonstrates the national significance of these international gateways.
- 3.3.2. In 2016, Highways England’s produced a report on International gateways and the SRN to identify key international gateways of national significance and their relative importance to England’s

economy, to help guide where future investment is needed in the SRN to support these facilities (Highways England, 2016).

- 3.3.3. In its original ports statements in 2012 (DfT, 2012) states that the Government seeks to “encourage sustainable port development to cater for long-term forecast growth in volumes of imports and exports by sea with a competitive and efficient port industry capable of meeting the needs of importers and exporters cost effectively and in a timely manner, thus contributing to long-term economic growth and prosperity”.
- 3.3.4. The UK shipping sector is responsible for:
  - 95% of UK trade by volume (75% by value);
  - A contribution of £14.5bn to the UK economy from the Shipping industry;
  - 24,000 FTE directly employed at Ports. Total industry estimated at 186,000 jobs;
  - £2.2bn direct tax revenue to Exchequer (£6.2bn total) (Oxford Economics, 2015).
- 3.3.5. The airports provide a significant benefit to the UK economy. The wider aviation and aerospace industry in the UK directly provides 230,000 jobs, consists of c4,500 business, and contributes over £22bn to the UK economy. In addition, millions of people use airports for holidays and to visit friends, therefore supporting the tourism industry which contributes £127 billion in GVA (9% of UK GDP). Effective air connectivity is essential for global connectivity for businesses, the transport of high value freight and for tourism, in particular the UK visitor economy (Oxford Economics, 2011).
- 3.3.6. The Solent area in particular is a gateway economy of international significance, providing connectivity to global markets, for the wider UK economy. There are three international gateways: Port of Southampton, Port of Portsmouth (Commercial and Naval Dockyard) and Southampton International Airport.
- 3.3.7. Highways England note that SRN links in the vicinity of the ports have high proportions of HGVs travelling on them (Highways England, 2016). The proportions of HGVs, on links serving the key ports, range from 10.5% of vehicles to 47% of vehicles at certain times. Seven (Immingham, Bristol, Liverpool, Tilbury / London Gateway, Felixstowe, Dover and Southampton) out of the ten ports have SRN links that are in the top 30% in terms of the proportion of HGVs.
- 3.3.8. These ports are highly dependent on road access and delay to vehicles travelling on the SRN in the vicinity of the key ports is important in terms of impacting the economic value of using the gateways. Delay to all vehicles varies from total delay of 4,980 hours on the A14 approach to Felixstowe to 215,680 hours on the A13 (between A126 and M25 Junction 30) serving Tilbury and London Gateway per year. Three (Tilbury / London Gateway, Tees and Southampton) out of the ten ports have SRN links that are in the top 30% in terms of total delay to vehicles (Highways England, 2016). This adds cost to businesses and reduces the attractiveness of those gateways for both import and export.
- 3.3.9. The Port Connectivity Study, acknowledges that “The Connectivity is about the movement of everything to and from our ports which is vital to our everyday lives” and as such the challenges and opportunities facing our ports needs to be considered to ensure our ports can continue to thrive (DfT, 2018).

- 3.3.10. Highways England recognise that “The UK, as an island nation, is critically dependent on its ports, airports and the Channel Tunnel, and patterns of global trade strongly influence the roles of these gateways in the UK economy. The SRN plays a critical role in connecting these gateways to the wider UK” (Highways England, 2016).
- 3.3.11. A detailed review of International Gateways is considered in Chapter 5.

## CONCLUSIONS FROM NATIONAL POLICY ASSESSMENT

- 3.3.12. National policy will unquestioningly have an impact on the future of the TfSE area and the role of freight and logistics. It is worth noting that whilst there are a number of policies that impact freight in the UK generally, there is no overarching national strategy for logistics, and little or no coordination between national stakeholders regarding freight policy. That said the findings from the seminal work by the NIC on the future of freight could influence transport planning and freight strategy development for local bodies. A number of the documents reviewed highlighted a recognition that freight is the back bone of the UK economy and that as an island international gateways are critical. This will support work within the TfSE area to improve connectivity to the key gateways within the region.
- 3.3.13. The Government and other national bodies have all emphasised the importance of decarbonisation and emission reductions for freight, and for transport in general. The most effective ways to decarbonise freight and reduce emissions include modal shift to rail, making road freight transportation models more efficient, and decarbonisation of freight road vehicles. To date there has been a focus on a widespread shift to electric vehicles as a longer-term strategy to reduce emissions, but the likely future adoption rate of electric vehicles is unknown. This combined with the lack of an electric solution for HGVs means the rate of emissions reduction as a result of this policy in the longer term is also unknown. Therefore, road freight emission reduction strategies rely on modal shift and initiatives that enable long term behaviour change and developing local freight road strategies, clean air zones, and possible local junction/road improvements.

## 3.4 LOCAL POLICY

- 3.4.1. Moving to more local policies and how they relate to freight, this section reviews policies at LEP and Local Authority level within the TfSE area.
- 3.4.2. Policy in the South East encompasses any policy set by Government at a sub-national level, but above a Local Authority level (such as a County Council or Unitary Authority). In the South East, responsibility for developing regional economic and transport policy is shared between:
- Highways England, which prioritises investment on the SRN in the South East;
  - Network Rail, which prioritises investment on the rail network in the South East;
  - Local Transport Authorities who develop Local Transport Plans; and
  - Five Local Enterprise Partnerships (Thames Valley Berkshire, Solent, Enterprise M3, Coast to Capital, and South East), which set strategic economic priorities for their LEP area.
- 3.4.3. Although not yet a statutory body, TfSE will seek to use the Transport Strategy to exert strategic influence over the development of the transport system in its area. The initial consideration

of the economic rationale for increased investment in the transport network of the South East has been set out by TfSE in its Economic Connectivity Review.

- 3.4.4. Local Authorities are responsible for creating Local Transport Plans. Local transport plans are an important part of transport planning in England. Strategic transport authorities (county councils, unitary authorities, passenger transport authorities and London Borough councils), are expected to prepare them as forward-looking plans covering a number of years (typically five years), and present them to the DfT.
- 3.4.5. LTPs must:
  - Outline the current baseline with regard to transport, accessibility and pollution;
  - Set out challenging but achievable objectives;
  - Set out the programme for achieving these objectives; and
  - Outline 'bids' for funding from the DfT
- 3.4.6. LEPs bring together businesses, Local authorities, academic institutions and other industry players to form non- statutory partnerships whose geography properly reflects the natural economic areas of England. LEPs understand their economy and are directly accountable to local people and local businesses. Using DfT criteria and working in partnership with other bodies, part of their role is to decide where investment should be for highway investment scheme, buildings, and facilities in the area as part of an integrated approach to growth and infrastructure delivery. LEPs represent a major step forward in fostering a strong environment for business growth.
- 3.4.7. There are 5 LEPS covering the TfSE area together with 16 Local Authorities.

## LOCAL AUTHORITIES

- 3.4.8. The TfSE area includes 16 local transport authority areas. These are West Berkshire, Windsor and Maidenhead, Wokingham, Bracknell Forest, Reading and Slough, Brighton and Hove, Kent, Hampshire, the Isle of Wight, Medway, Portsmouth, Southampton, Surrey, East Sussex and West Sussex.
- 3.4.9. Local authorities have taken a wide range of different approaches to managing freight which would be expected given their diverse geographical, demographic, economic and social characteristics. Local Authorities have an opportunity to best manage urban freight and given the concentrated harmful effects, high cost and inefficiency of urban freight relative to the rest of the supply chain, it is an area where having clear freight plans could have the greatest impact. However, most authorities still do not have specific freight management policies beyond objectives to manage the negative impacts of freight. For example, nationally only 27 local authorities have policies in place for last mile logistics. This reflected in the work undertaken by Lichfields (Litchfields, 2018) which identified that 58% of authorities viewing a lack of an up to date local plan as a key barrier to meeting last mile needs.
- 3.4.10. The following highlights the results of the literature review of the 16 authorities and their approach to freight and logistics:

**Table 3-2 - Evidence of Local Authorities freight policies highlights where freight is a consideration as part of Local Transport Plans (LTPs)**

Local Authority	Freight strategy	Last mile
Bracknell Forest	Yes (2011)	No
Brighton and Hove	Yes	Part of the Freight Strategy
East Sussex	Yes	No
Hampshire	Yes (2013) only South Hampshire	No
Kent	Yes (2016)	No
Medway	Yes (2011)	No
Portsmouth	Yes (2011) part of South Hampshire strategy	No
Reading	Yes (2011)	Referenced in Freight Strategy
Slough	Yes (2011)	Yes
Southampton	Yes (2011) part of South Hampshire strategy	No
Surrey	Yes (2011)	Referenced in Freight Strategy
The Isle of Wight	No	No
West Berkshire	Yes (2014)	No
West Sussex	Yes	No
Windsor and Maidenhead	No	No
Wokingham	No	No

3.4.11. Table 3-2 highlights where freight is a consideration as part of Local Transport Plans (LTPs). Freight is mentioned in some of the current LTPs, with only Slough, Surrey, West Berkshire, East Sussex having specific freight strategies. None have a specific last mile plan, although some have referenced specific urban issues within their freight plans or LTPs. This is reflected nationally where 84% of LTPs include a sector specific policy or objective, and only 27% include last mile policies and objectives (Litchfields, 2018).

Where there are separate freight strategies, these are outlined in



**Table 3-3.**

**Table 3-3 - Freight specific transport plans**

Local Authority	Freight strategy
Kent	<p>The Kent Freight Action plan is undated, however, implies it was written at the same time as LTP4 2016. The key actions contained in the action plan are:</p> <ul style="list-style-type: none"> <li>■ To tackle the problem of overnight lorry parking in Kent</li> <li>■ To find a long-term solution to Operation Stack</li> <li>■ To effectively manage the routing of HGV traffic to ensure that such movements remain on the strategic road network for as much of its journey as possible</li> <li>■ To take steps to address problems caused by freight traffic to communities</li> <li>■ To ensure that KCC continues to make effective use of planning and development control powers to reduce the impact of freight traffic</li> </ul>
East Sussex	<p>Within East Sussex the approach to freight set out in the Freight Strategy developed in 2011 which clearly identifies some specific issues to be addressed:</p> <ul style="list-style-type: none"> <li>■ promote the use by goods vehicles of an advisory freight route network of A and B class roads,</li> <li>■ develop Freight Quality Partnerships with industry and communities to address local freight issues,</li> <li>■ support the transfer of freight by rail</li> <li>■ work with Ordnance Survey and the freight industry to help address inappropriate use of routes identified by satellite navigation systems,</li> <li>■ encourage more sustainably accessible locations for new business premises,</li> <li>■ encourage safer, more efficient deliveries and raise awareness of freight and distribution, and</li> <li>■ ensure the freight traffic generated by potential new goods distribution facilities does not have a significant impact on the Ashdown Forest SAC/SPA</li> </ul>
Slough	<p>The purpose of the freight strategy produced in 2011 is to co-ordinate all policies and programmes of action which will assist in promoting and managing freight as part of Slough Borough Councils Transport objectives. The strategy is intended to form the basis for consultation on freight issues in Slough and provide an action plan for delivery of the related schemes and initiatives to be taken forward. The strategy includes a series of interventions focused on the freight industry – ranging from Freight Quality</p>

	Partnerships through to Delivery Servicing Plans and the potential use of water for freight movements.
Surrey	<p>The aim of the freight strategy produced in 2011 is: "To assist in the effective transportation of goods whilst minimising the impact of large goods vehicles on Surrey's environment and its residents".</p> <p>The objectives are:</p> <ul style="list-style-type: none"> <li>■ To continue to provide up-to-date information to the freight industry to enable more effective, reliable, safe and sustainable deliveries;</li> <li>■ To reduce the adverse impact of lorries on congestion, air quality and road safety in urban areas; and,</li> <li>■ To reduce incidences of lorries diverting along unsuitable lower category roads when not being used for access.</li> </ul>
West Berkshire	<p>West Berkshire have noted that freight is an important issue in West Berkshire. The Freight Strategy produced in 2014 is West Berkshire's vision for balancing the requirement for efficient distribution of goods around the District with the social and environmental effects of freight movement over the period of the Council's Local Transport Plan (LTP) to 2026. It builds upon the Freight Strategy developed for the previous Local Transport Plan 2006/7-2010/11. The strategy includes 12 actions to progress the freight strategy.</p>

## LEPS



- 3.4.12. Since 2013 LEPs have each published Strategic Economic Plans (SEPs), backed up with analysis of local sectors, skills challenges and places of opportunity. The SEPs are used to negotiate Growth Deals and this is where freight and logistics considerations are often found. It is the role of the LEPs to identify where enhancements are required to support economic growth, however, responsibility for funding remains with the Local Authority.
- 3.4.13. In addition to this the national Industrial Strategy launched by BEIS in November 2017, required Local Industrial Strategies (LIS) to be developed which will 'build on local strengths and deliver on economic opportunities' identifying 'priorities to improve skills, increase innovation and enhance infrastructure and business growth. These will eventually replace SEPs.
- 3.4.14. This study considers, for each of the LEPs a number of areas that ultimately have an impact of the demand for freight and logistics. This review is based on published LEP documents. Where other sources are used these are cited.
- 3.4.15. This study has reviewed each of the LEPs in relation to:
- Scale and location of planned population and employment growth: The review has indicated population growth and GVA as an indicator of increased employment activity both of which has an impact on freight and logistics demand;

- Industrial and business focus, including clusters of industry which can drive logistic demand to a lesser or greater extent dependant on the industry; and
- Proposals for transport investments which will impact freight efficiency.

3.4.16. The following summarises how each of the LEPs perform against key economic criteria. This is important for freight and logistics; as population grows this places demands on the logistics industry in the provision of goods and services together with added potential congestion. Priority sectors identified in Strategic Economic Plans are also shown. This is summarised in Table 3-6 and shows the importance of this for logistics planning, highlighting how logistics needs must be considered in order to be able to deliver growth in the priority sectors, especially those that have a high dependency on the freight sector.

**Table 3-4 - LEP Economic KPIs**

	GVA per head	GVA Growth	Current employment	Population Growth	Priority sectors
Enterprise M3	High	High	High	High	Aerospace and defence, creative industries, Foreign owned business, Healthcare, medical technology and life sciences, IT and digital media, Professional, finance and business services, Space and satellite technology
Thames Valley	High	High	High	Low	Corporate activities, Foreign owned businesses, IT and digital media
Solent	Med	High	High	Not published	Advance manufacturing, Aerospace and defence, Creative industries, Engineering, IT and digital media, Low carbon/environmental technology, goods and services, Marine and maritime, Transport and logistics, Visitor economy

Coast to Capital	Med	Not published	High	Not published	Advance manufacturing, creative industries, Healthcare, medical technology and life sciences, Horticulture, IT and digital media, Low carbon/environmental technology, goods and services, Professional, finance and business services, Visitor economy
South East	Low	Not published	High	High	Advance manufacturing, creative industries, Healthcare, medical technology and life sciences, IT and digital media, Low carbon/environmental technology, goods and services, Visitor economy

Key:

Measured as against UK averages for KPI

- Pop Growth 3.7%;
- Employment Rate 75%;
- GVA per head £24,538; and
- GVA Growth 1.9%

High – higher than UK

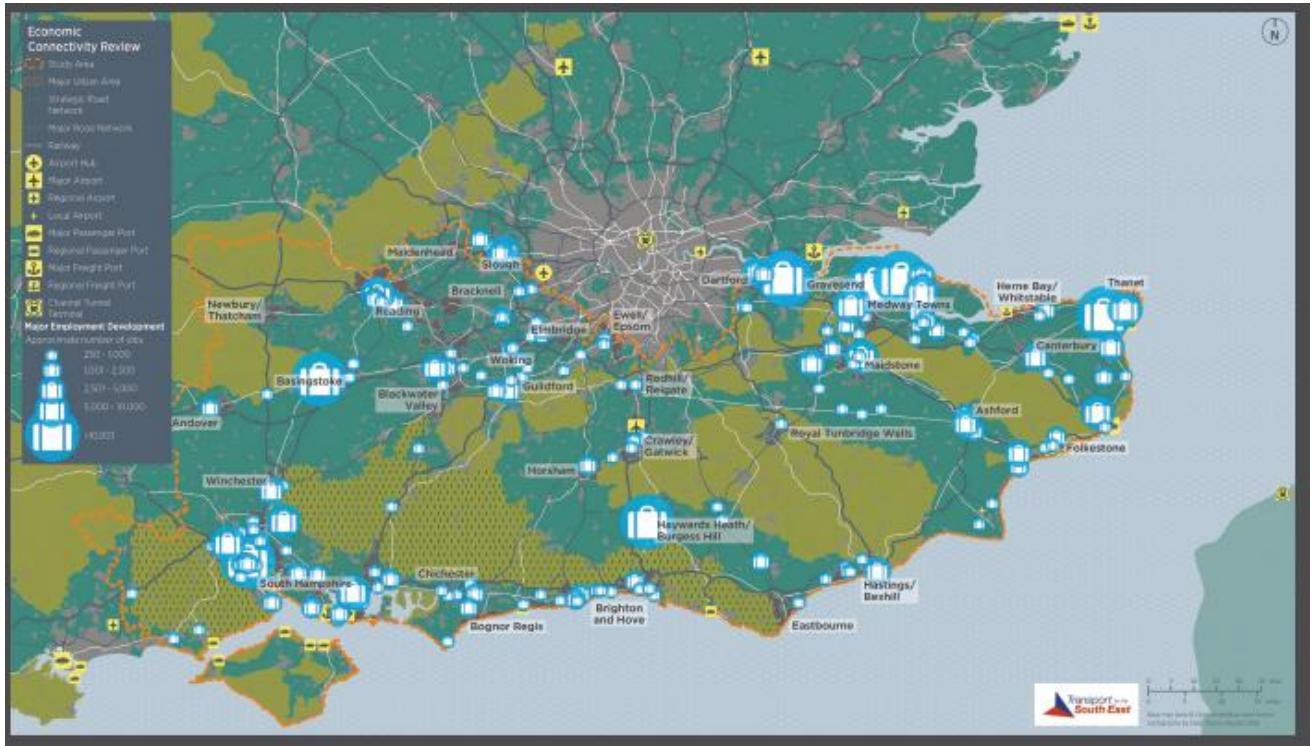
Med – same as UK

Low – lower than UK

- 3.4.17. The outcomes of the Economic Connectivity Review (Steer, 2018) demonstrate that overall from a population and economic growth perspective the area has the second highest productivity in the UK outside of London. The South East adds more than £200 billion to the UK economy each year and this is forecast to grow to over £330 billion per year in the next 30 years. Even under this 'business as usual' scenario with a corresponding increase in employment from 4 million to 4.5 million jobs. Some areas have a greater challenge than others, with some large disparities between in housing and employment. Housing growth is impacted by the ability of the logistics industry to support it and as such therefore logistics needs to be considered as part of the design of new urban areas. All LEPs highlight retail as a large employer, which has a high dependency on logistics.

## ECONOMIC HUBS

**Figure 3-1 – Planned Employment Space Growth (Steer, 2018)**



3.4.18. The above shows employment growth hubs, which may give an indication of the location of drivers of changes in freight demand, discussed further in Chapter 4, however, it is worth noting here that there is a high dependency on logistics as an employment sector and generator of economic activity. Table 3-5 shows the percentage of jobs in sectors and those that have a high dependence on the logistics sector currently. This together with the potential growth identified in Table 3-4 can help to show that logistics is needed even to maintain the status quo as well as meeting growth aspirations.

**Table 3-5 - Employment by LEP**

	Dependence on Logistics	Enterprise M3	Thames Valley	Solent	Coast to capital	South East
Industry		% of jobs				
Accommodation and food service activities	Medium	7.8	6.2	7.7	7.6	7.4
Administrative and support service activities	Low	7.8	9.5	8.8	9	8.3
Arts, entertainment and recreation	Low	3.4	2.6	2.5	2.7	2.7
Construction	High	5.9	4.2	5.4	5.2	6.8
Education	Low	9.6	8.7	10.6	9.6	9.8
Electricity, gas, steam and air conditioning supply	Medium	1	0.6	0.4	0.5	0.2
Financial and insurance activities	Low	2.6	2	2.9	4.4	2.6

Human health and social work activities	Low	12.2	8.9	13.5	14.4	14.4
Information and communication	Low	7	13.7	4.2	4.4	2.8
Manufacturing	High	5.6	5.2	7.9	4.7	6.7
Mining and quarrying	High	0	0	0	0	0
Other service activities	Low	2.9	2.6	2.1	2.5	2.1
Professional, scientific and technical activities	Low	9.8	10.3	6	7.2	7
Public administration and defence; compulsory social security	Low	2.8	2.2	4.4	4	3.5
Real estate activities	Low	1.7	1.4	1.3	1.8	1.6
Transportation and storage	High	3	4.4	5.2	5.1	5.2
Water supply; sewerage, waste management and remediation activities	Medium	0.7	1.2	0.7	0.8	0.8
Wholesale and retail trade; repair of motor vehicles and motorcycles	High	16	15.9	16.3	16	17.5

- 3.4.19. The lack of recognition of logistics and freight has in part has been redressed through TfSEs Connectivity Review, where their 8 priority sectors for development includes transport and logistics, Table 3-6 identifies these sectors.

**Table 3-6 - Priority sectors by LEP**

Priority sectors	Dependency on Logistics (High Medium Low)
Advanced manufacturing and engineering	Medium
Creative industries	Low
Financial and professional services	Low
IT and data services	Low
Low carbon	Medium
Martine, maritime and define	High
Tourism	High
Transport and logistics	High

- 3.4.20. The plans reviewed as part of this study suggest that logistics is increasingly seen as priority sector in its own right, not just as an enabler for other industries. This is an important step forward to allow for the investment and growth of the industry.

## PROPOSALS FOR TRANSPORT INVESTMENTS

- 3.4.21. The Economic Connectivity Review (Steer, 2018) identified the corridors TfSE are prioritising for improvement, recognising that transport investment needs to focus on connectivity between key areas, serving hubs and key routes. This will have a significant impact on how well the freight and logistics industry can serve the region and through the gateways the UK.



## 3.5 PLANNED INFRASTRUCTURE INVESTMENT

- 3.5.1. The key challenge for all Local Transport Authorities and LEPs in the region is to relieve congestion through in part effective infrastructure provision, that are constrained by a densely populated area and flanked on 3 sides by water, the coast to the east and south and the Thames in the north. Transport infrastructure is an essential part of the regional economy as well as the UK given the position of the international gateways. This in turn presents challenges for the logistics operations both operating within the regional and rely on the area as a through way to access the rest of the UK.
- 3.5.2. There are already planned and proposed improvements and investments and as such this will be considered where known. This forms part of the wider Transport strategy development (LOT A) and this report should be used to influence that process.
- 3.5.3. The Government's priorities for investment in the SRN in South East England is described in Highways England's Route Strategies (Highways England, 2015). In total, Highways England has published 18 Route Strategies covering the whole SRN in England, six of which are relevant for the South East. These are:
- Kent Corridor to M25 (M2 and M20);
  - London Orbital and M23 to Gatwick;
  - London to Wales;
  - M25 to Solent (A3 and M3);
  - Solent to Midlands; and
  - South Coast Central.
- 3.5.4. These strategies cover all elements of the challenges and opportunities, these have been reviewed and then considered as it relates to freight and logistics in the corridor assessments in Chapter 7.
- 3.5.5. From a freight perspective, feedback from the industry suggest the following areas that present specific challenges for them from a delivery goods perspective (this is taken directly from the Survey and therefore further details on what the respondent meant is not possible):
- Central London;
  - Motorways: M25 (J1A, J1B, J9, J12, J25, J28); M27 (J3 and J4); M271 (Redbridge Roundabout); M3 (J9), M4, M26;
  - Roads: A27, A34, A281, A3 (Guildford town centre), A2 (Brenley Corner);
  - South of M20 towards Hastings;
  - Dover TAP (Traffic restrictions to help minimise disruption in Dover's from traffic using the port. This means: A 40mph speed restriction which applies to all vehicles approaching Dover from the west via the A20 and lorry drivers heading for the Port should remain in the left lane of the A20, from the Roundhill Tunnel to the Port;
  - Gatwick triangle;
  - Coastal access between Chichester - Brighton – Folkestone;
  - Dartford Crossing; and
  - Isle of Wight connections
- 3.5.6. Some of these are reflected in the Governments priority investment areas identified above.

## 3.6 CONCLUSIONS FROM LOCAL POLICY

- 3.6.1. Whilst there is some recognition of the needs of the freight and logistics industry across the TfSE area, this is similar to the national level policy perspective, in that it is relatively limited. The region has challenges geographically, bordered as it is on three sides by water and a significant proportion of its area is covered by protected landscape. Plans for growth in homes and employment will inevitably put more pressure on already congested network by increasing demand for travel.
- 3.6.2. There is limited local policy to address the conflict in urban areas between HGV and LGV traffic and residential traffic. In some areas the proximity of commercial areas to residential areas presents a number of issues and a consistent approach to managing this needs to be considered.
- 3.6.3. The international gateways are an economic strength for the region, but any expansion of these will have knock on impacts on performance of the transport network across the wider region. For example, as Heathrow grows the implications for the road network surrounding the airport and the logistical support may be significant. Other STBs' policies on transport, priority sector investment and housing may have both a positive and negative impact on TfSE. This needs to be considered and is not limited to TfL.
- 3.6.4. Whilst freight has been considered within some local plans, and in lesser case with specific freight plans, there is a theme that freight is a "problem" that needs to be resolved rather than an opportunity that can be explored.

## 4 LOGISTICS IN TFSE

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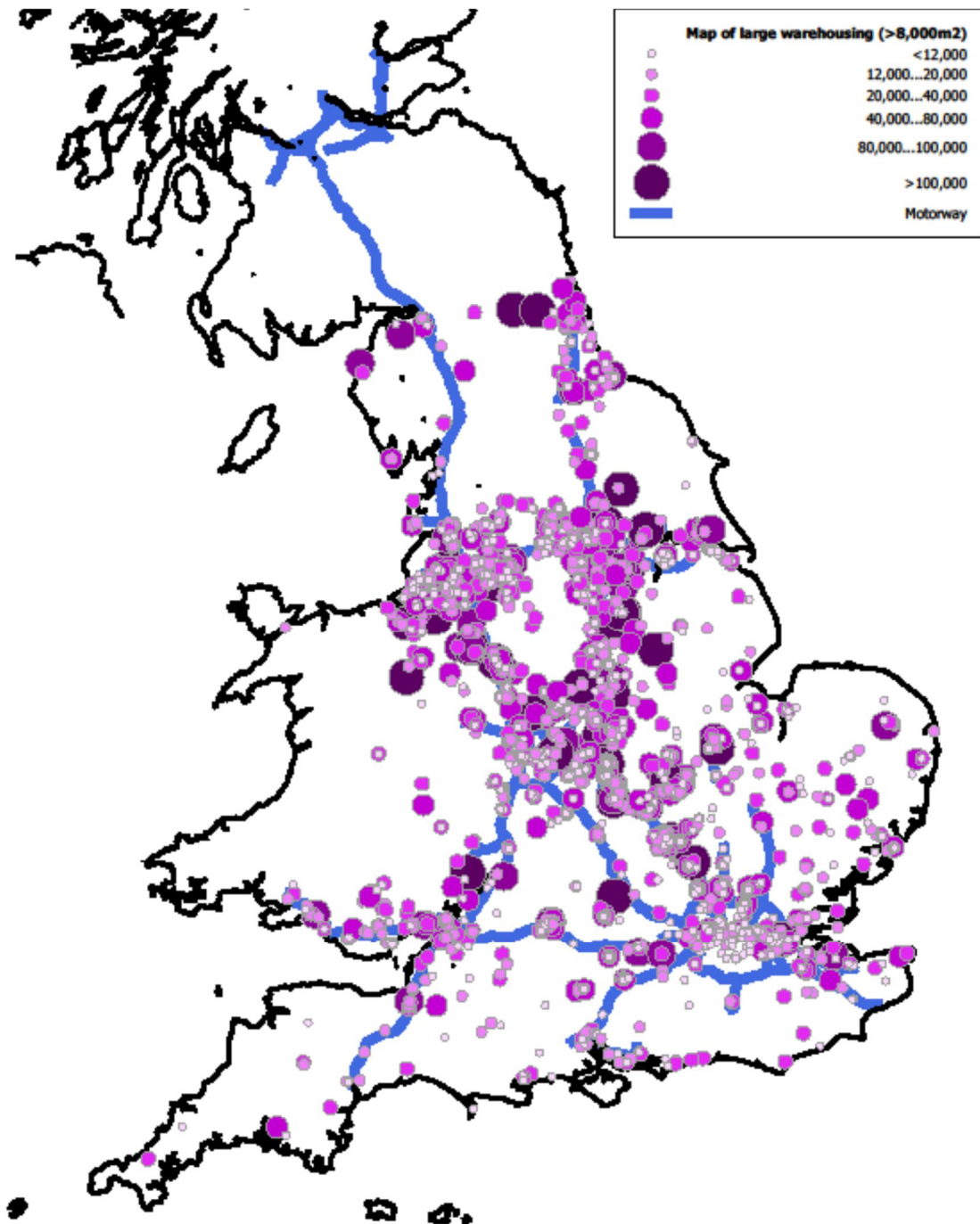
### 4.1 FREIGHT GENERATORS AND HUBS

- 4.1.1. This section looks at some of the main generators of freight in the TfSE area in order to develop an understanding of patterns of demand.
- 4.1.2. The key features of TfSE are:
- Large population with a number of large cities or groups of towns such as Medway, Brighton, and the Solent area;
  - Generally, a lack of major manufacturing plants;
  - Strengths in high technology industries and service industries;
  - Partly due to land constraints, a lack of major warehouses or distribution centres across much of the area;
  - The presence of major air and sea port gateways (considered in Chapter 5); and
  - Proximity to London (discussed in Chapter 6).
- 4.1.3. A common theme when discussing logistics is the lack of data, and this is also true when considering where freight moves from and too and the volumes of freight generated by industry or location. Chapter 4 provides data on total volumes of goods moved by road to and from TfSE, but at this level the data used cannot provide information on the type of commodities moved.
- 4.1.4. Nonetheless, for some key business sectors it is possible to identify key locations generating freight demand, and in some cases to estimate volumes.

## 4.2 DISTRIBUTION CENTRES AND HUBS

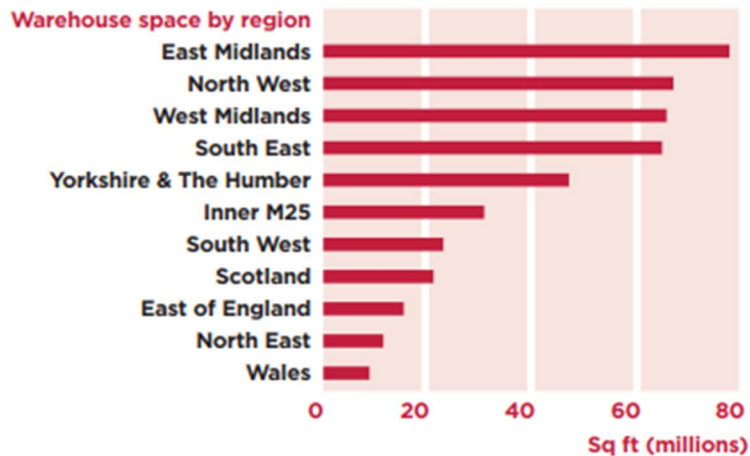
- 4.2.1. A very high percentage of UK HGV volume is generated by trips to and from large distribution centres (DCs) with a significant proportion of DCs located near to manufacturing plants, around ports or close the end customer. Supply chains for large UK businesses, particularly in the retail sector, involve a complex pattern of National Distribution Centres (NDCs) and Regional Distribution Centres (RDCs). These may be further segmented into ambient food, temperature controlled food, and non-food DCs and supplemented by other specialist DCs such as Customer Replenishment Centres where vans for home deliveries are loaded.
- 4.2.2. A common pattern is to locate NDCs in the Midlands – the Golden Triangle for logistics. Such NDCs can receive imported products from any of the main ports within a 4-hour journey, and have good access to UK suppliers and outbound to any of the GB regions. Regions may then be served by RDCs which receive some products direct from suppliers but also a large volume of goods from the NDCs in the Midlands.
- 4.2.3. Thus, for the TfSE area, goods imported via Southampton or Dover may travel to a Midlands NDC before then being returned to an RDC in the TfSE region.
- 4.2.4. This pattern may be changing, for example from the growth of home shopping, with companies like Amazon wanting to locate DCs closer to their customers for same day / same hour deliveries.
- 4.2.5. With its large population, TfSE would be expected to be served by a significant number of DCs, but, as **Figure 4-1** shows, in fact DCs are clustered into a relatively small part of the region. In part this is due to land constraints (lack of availability and high cost of suitable sites), and also due to a lack of or the high cost of a suitable workforce.
- 4.2.6. **Figure 4-1** shows the locations of large warehouses across England. The source of this map is the Foresight report “Understanding the UK Freight Transport System, February 2019” (Government Office for Science, 2019).
- 4.2.7. This shows clearly some distribution operations around or near the ports and near to urban centres, and also the concentration in the golden triangle.
- 4.2.8. Within TfSE the map in **Figure 4-1** shows concentrations around the Solent and North Kent, and also in Berkshire.

**Figure 4-1 -The location of distribution space over 8,000 square metres in England**



- 4.2.9. The UKWA undertook a survey of warehousing space in 2016 (UKWA, 2016) where they identified over 1500 individual warehousing units used for storage and distribution which account for almost 424m sq ft of warehouse space. It shows that of these units a good proportion were in in the South East, on a par with the North West, and West Midlands. However, the UKWA data does refer to the whole SE region, and so includes Oxfordshire and Buckinghamshire, with Milton Keynes in particular having a very high concentration of DCs.

**Figure 4-2 - UK Warehousing space 2016 (UKWA, 2016)**



4.2.10. In their analysis the UKWA looked at the sector the warehousing space was being used for, in the South East, 27% (market share) was “Retail, Food” with “Retail, High Street” being a close second, not surprising given the population density that needs to be served.

**Table 4-1 – Warehouse sectors (UKWA, 2016)**

Region	Dominant tenant sector (market share %)	Secondary tenant sector (market share %)
East Midlands	3PL/Transport (35%)	Retail, High St (28%)
North West	Retail, High St (33%)	3PL/Transport (22%)
West Midlands	Retail, High St (27%)	Manufacturing (16%)
South East	Retail, Food (27%)	Retail, High St (23%)
Yorkshire & The Humber	Retail, High St (34%)	3PL/Transport (24%)
Inner M25	Retail, Food (32%)	3PL/Transport (30%)
South West	Retail, High St (31%)	Retail, Food (25%)
Scotland	3PL/Transport (25%)	Manufacturing (21%)
East of England	3PL/Transport (37%)	Retail, High St (32%)
North East	Retail, Food (52%)	3PL/Transport (14%)
Wales	Retail, Food (23%)	3PL/Transport (21%)

4.2.11. The map overleaf shows the location of a selection of major warehouses across the South East, clearly showing the importance of the North Kent and Solent areas.



**Figure 4-3 – Selected major distribution centres (WSP)**



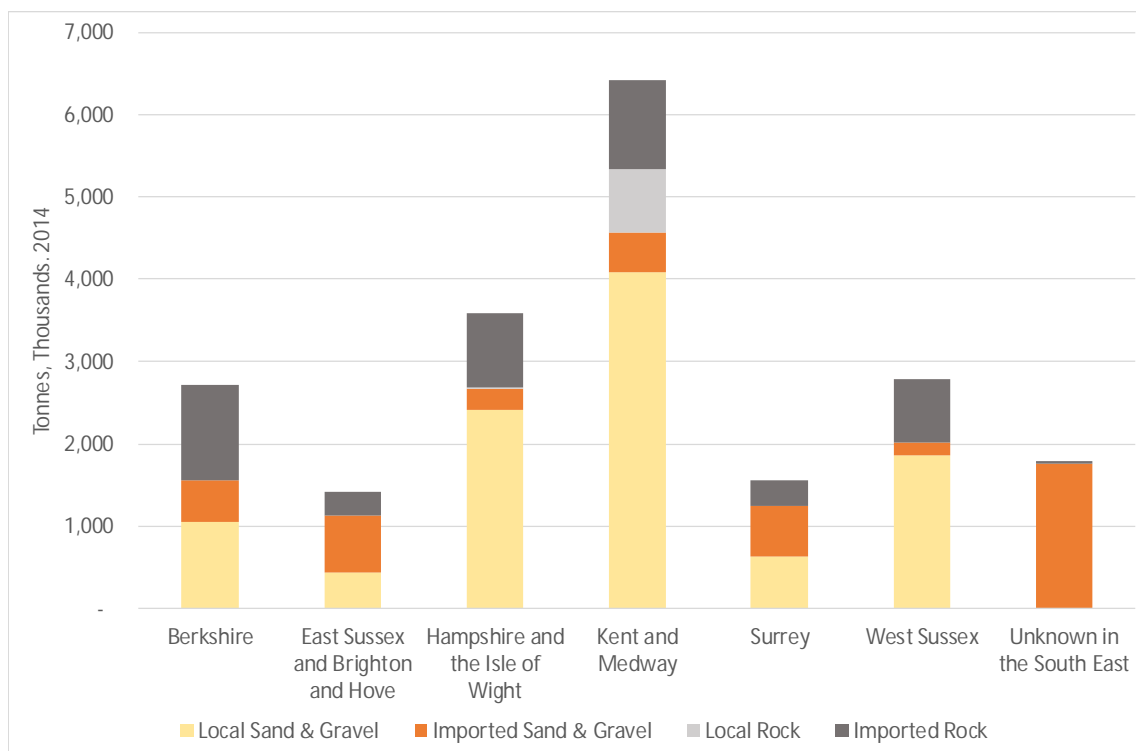
## 4.3 OTHER INDUSTRIES

- 4.3.1. Lack of data makes it very difficult to map any other concentrations of freight. A significant percentage of freight journeys are destined for homes, businesses, or retail centres and so closely follow patterns of population and employment.

### CONSTRUCTION MATERIALS

- 4.3.2. Bulk construction materials account for some 22% of tonnes moved by road in Great Britain, and 14% of road freight tonne kilometers. Good quality data is collected every 4 years looking at the volumes produced and consumed in each region and county. (Collation of the results of the 2014 Aggregate Minerals Survey for England and Wales)
- 4.3.3. The 2014 mineral survey indicates that of 127.5 million tonnes of sand, gravel, and crushed rock consumed in England in 2014, 19 million Tonnes were consumed in the TfSE area. With a million Tonnes representing approximately 500 HGV trips per day, 19 million Tonnes per annum would lead to 9,500 lorry trips per day in the TfSE area. The chart in Figure 4-4 shows the main types and sources of aggregates in the TfSE.

**Figure 4-4 - Types and Sources of Aggregates in TfSE in 2014 (2014 Aggregate Minerals Survey for England and Wales)**



- 4.3.4. This shows that over 70% of sand and gravel is sourced locally (mostly through sea dredged materials landed at wharves in the region), compared to less than 15% of crushed rock. Of the 9.5 million Tonnes of imported sand, gravel, 70% is transported by rail, including significant flows from Cliffe in Kent to Sussex and also large quantities of crushed rock from the Mendips.
- 4.3.5. A report in 2007, Aggregate Wharves and Rail Depots in South East England, reviewed existing and potential capacity of active and inactive wharves and rail terminals in the South-East England Region, identifying constraints on capacity, proposed wharves and terminals that are safeguarded in Local Development Documents and recommended strategic sites that warrant safeguarding.
- 4.3.6. The study concluded that the South-East region is heavily dependent on imports of sand, gravel and crushed rock from other UK regions, marine resources and mainland Europe. From a national and regional policy perspective, the use of rail or sea transport to supply aggregates to the South East is to be promoted and encouraged. Planning policy indicates that existing rail and wharf facilities should be protected, and that new sites in development should be rail served, located within a port or both.
- 4.3.7. The report suggested that demand for primary aggregates in the South-East Region was then around 25 million tonnes per annum. It highlighted 19 rail served depots located in the South East (including 2 Network Rail 'virtual quarries' i.e. ballast stock-piles), of which 15 are currently active. The remaining 4 terminals are currently mothballed or redundant. In total, 13 of the depots are safeguarded in Minerals Plans or Local Plans/UDPs. The Kent/Medway and West Sussex aggregates studies identified a further 8 rail served depots.

- 4.3.8. In total 25 aggregate wharves were identified, of which 16 were active for handling aggregates. In total, 17 of these wharves are safeguarded in Minerals Plans or Local Plans/UDPs. The Kent/Medway and West Sussex aggregates studies identified a further 22 wharves.
- 4.3.9. Overall the study concluded:
- Where appropriate, suitable safeguarding measures should be adopted at the Regional and sub-regional levels (i.e. MPA or local planning authority) in order to protect the capacity provided at all the existing rail depots and wharves. Where some form of MPA or planning authority safeguarding is already in place, these policies should remain (and enhanced where necessary).
  - For all the remaining sites and wharves, where sub-regional protection is currently not included in local plans or where the wording of policies may be unclear (e.g. Surrey Minerals Local Plan), suitable measures should be introduced at the earliest opportunity to ensure that they are safeguarded for continued aggregates handling over the long term. This position should also be reflected in Regional policy (e.g. Spatial Strategy);
  - The existing wharf and rail depot capacity in the South-East Region is sufficient to handle the forecast growth in aggregates demand. There is consequently no requirement, from a regional capacity perspective, to plan for additional sites and wharves across the Region; and
  - However, Regional and sub-regional policy should adopt suitable measures which will permit the development of new wharves or rail served depots at suitable locations when proposals are brought forward by operators. This will ensure and enhance the geographic choice across the South-East Region.

## AGRICULTURE

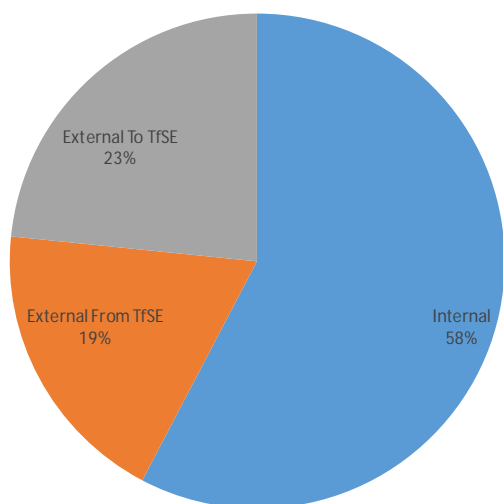
- 4.3.10. It is difficult to obtain tonnage volumes for agricultural production by area, but much of the TfSE area is devoted to arable farmland, dairy farming, or sheep farming. The Manhood Peninsula is a nationally important area for market gardening, which has led to the development of food processing businesses which generate significant volumes of long distance HGV traffic.

## 4.4 ROAD FREIGHT

### ROAD FREIGHT VOLUMES

- 4.4.1. The Continuing Survey of Road Goods Transport (CSRGT) collects data on a sample of HGV trips each year. The data includes details such as commodity, payload, origin and destination, and vehicle type. However, the sample size is not large enough to provide statistically reliable information at a local level by commodity. However, the data does provide an indication of origins and destinations to approximately county level which can be used to provide an indication of the key origin and destination pairs for HGV movements to, from, and within each authority area within TfSE.
- 4.4.2. This analysis indicated that in 2017, of 163 million tonnes of goods that started or finished a journey in the TfSE area, approximately 95 million tonnes, or 58% didn't leave the region (i.e. moved between two locations in TfSE). Of the remainder, 24% was inbound from other regions to TfSE and 19% was outbound from TfSE to other regions. This data includes HGVs originating at ports, but excludes foreign registered vehicles which form a significant percentage of goods traffic to and from the Channel ports. These numbers are illustrated in Figure 4-5.

**Figure 4-5 - Volumes of goods lifted on UK registered goods vehicles, millions of tonnes, 2017 (CSRG)**



**Table 4-2 – Freight patterns**

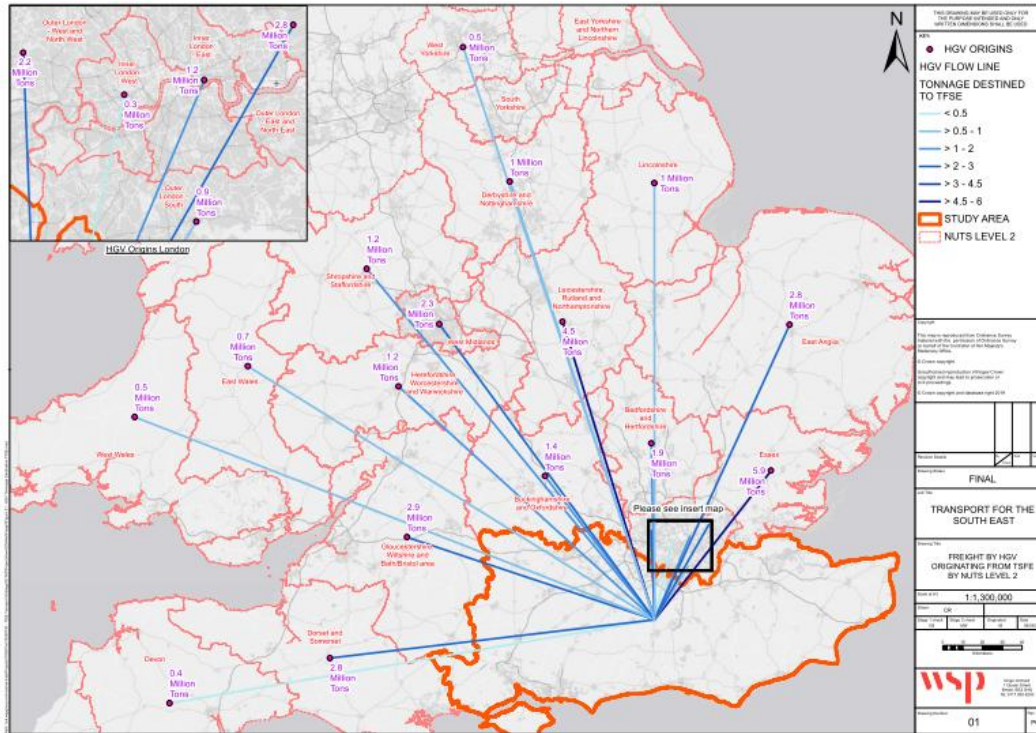
	Originating from TfSE	Destined to TfSE
08.4 Kent	26.70	26.92
08.3 Hampshire and Isle of Wight	26.72	26.47
08.2 Surrey, East and West Sussex	26.61	26.08
Berkshire	14.70	14.24
London (combined)	8.98	7.38
06.3 Essex	2.03	5.91
04.2 Leicestershire, Rutland and Northamptonshire	3.12	4.52
09.1 Gloucestershire, Wiltshire and Bristol/Bath area	2.99	2.88
06.2 Bedfordshire and Hertfordshire	3.36	1.89
09.2 Dorset and Somerset	2.26	2.85
06.1 East Anglia	1.81	2.85
05.3 West Midlands	1.33	2.34
Buckinghamshire and Oxfordshire	1.00	1.36
05.1 Herefordshire, Worcestershire and Warwickshire	1.18	1.16
05.2 Shropshire and Staffordshire	0.72	1.18
04.1 Derbyshire and Nottinghamshire	0.45	0.97
04.3 Lincolnshire	0.34	0.96
09.4 Devon	0.65	0.43
10.1 West Wales and The Valleys	0.27	0.52
10.2 East Wales	-	0.66
03.4 West Yorkshire	-	0.55
03.1 East Yorkshire and North Lincolnshire	0.34	-
03.3 South Yorkshire	0.22	-

- 4.4.3. Tables 4.1 and 4.2 show the dominance of “internal” traffic and the importance of London. In comparison longer, distance journeys are a small part of total journeys – but their impact is magnified in tonne kilometre terms which is a better measure of the impact of HGVs on congestion and emissions. This is in line with national trends – 62% of all HGV journeys in the UK are under 100km.

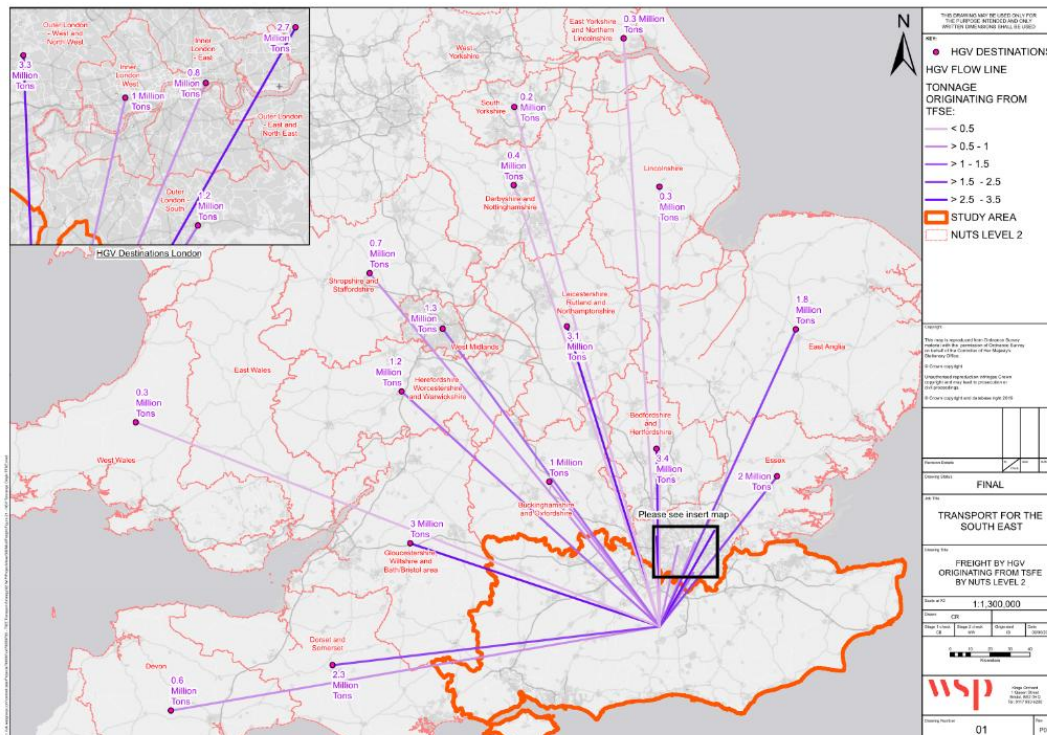


4.4.4. The maps in Figure 4-6 and Figure 4-7 show the major origins and destinations of TfSE road freight in terms of the tonnage carried per annum.

**Figure 4-6 – Annual volume of freight in HGVs from TfSE to other areas (2017, CSRGT)**



**Figure 4-7 – Annual volume of freight in HGVs from other areas to TfSE (2017, CSRGT)**

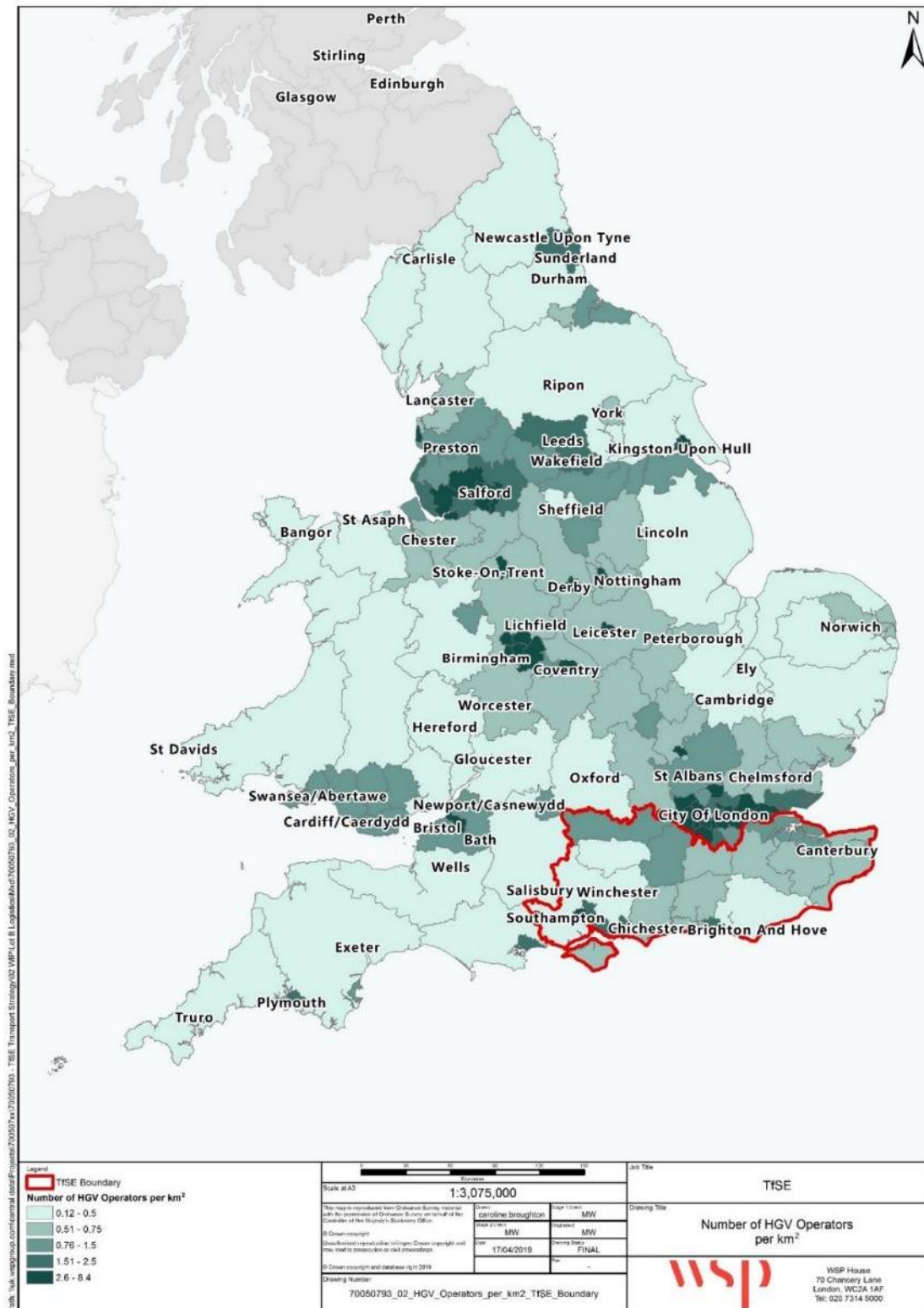


## ROAD HAULAGE OPERATORS

- 4.4.5. Operators of road haulage fleets range from small “own account” businesses to large multinational logistics companies. Each operator requires a licence for each of the premises they operate from, including the number of vehicles. Data on operator licenses is available giving the postcode for each location. However, having a license for 10 vehicles on a site does not mean that 10 vehicles are operated there – it could be fewer.
- 4.4.6. In the UK there are nearly 82,000 HGV operators, with 12% of these are based in the TfSE area operating 278,344 vehicles. TfSE has 19 HGVs per km<sup>2</sup> compared to 10 HGVs for the UK as a whole. This is illustrated on the maps in Figure 4-8 and Figure 4-9. These show that whilst the intensity of logistics operations in the region is not as high as the Midlands, TfSE has a higher than UK average number of freight and logistics operators and vehicles.



Figure 4-8 – Number of HGV operators per km<sup>2</sup>

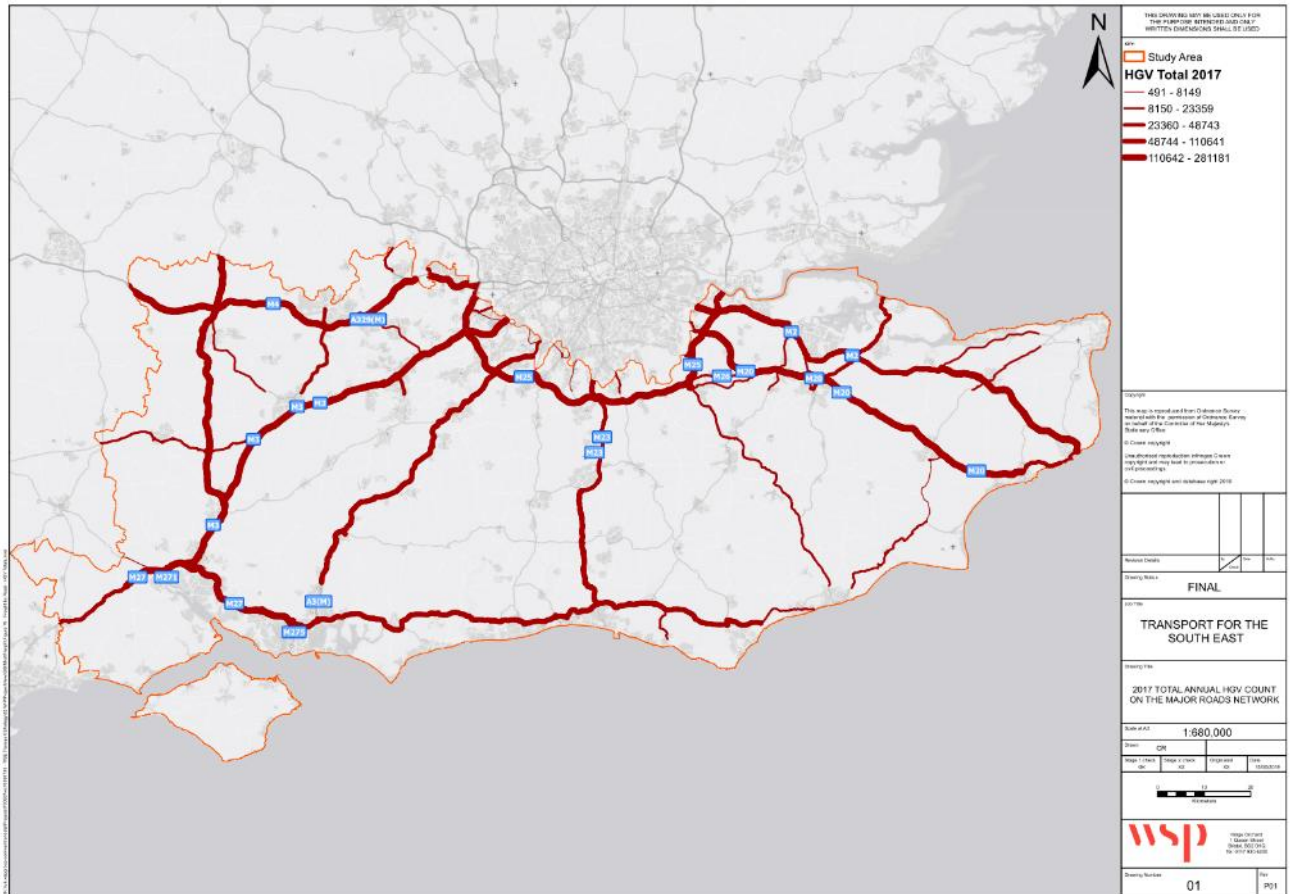




## ROAD FREIGHT ROUTES

- 4.4.7. The maps in Figure 4-10 and Figure 4-11 illustrate the busiest SRN corridors in terms of the number of HGVs and also proportion of traffic that is HGV traffic.

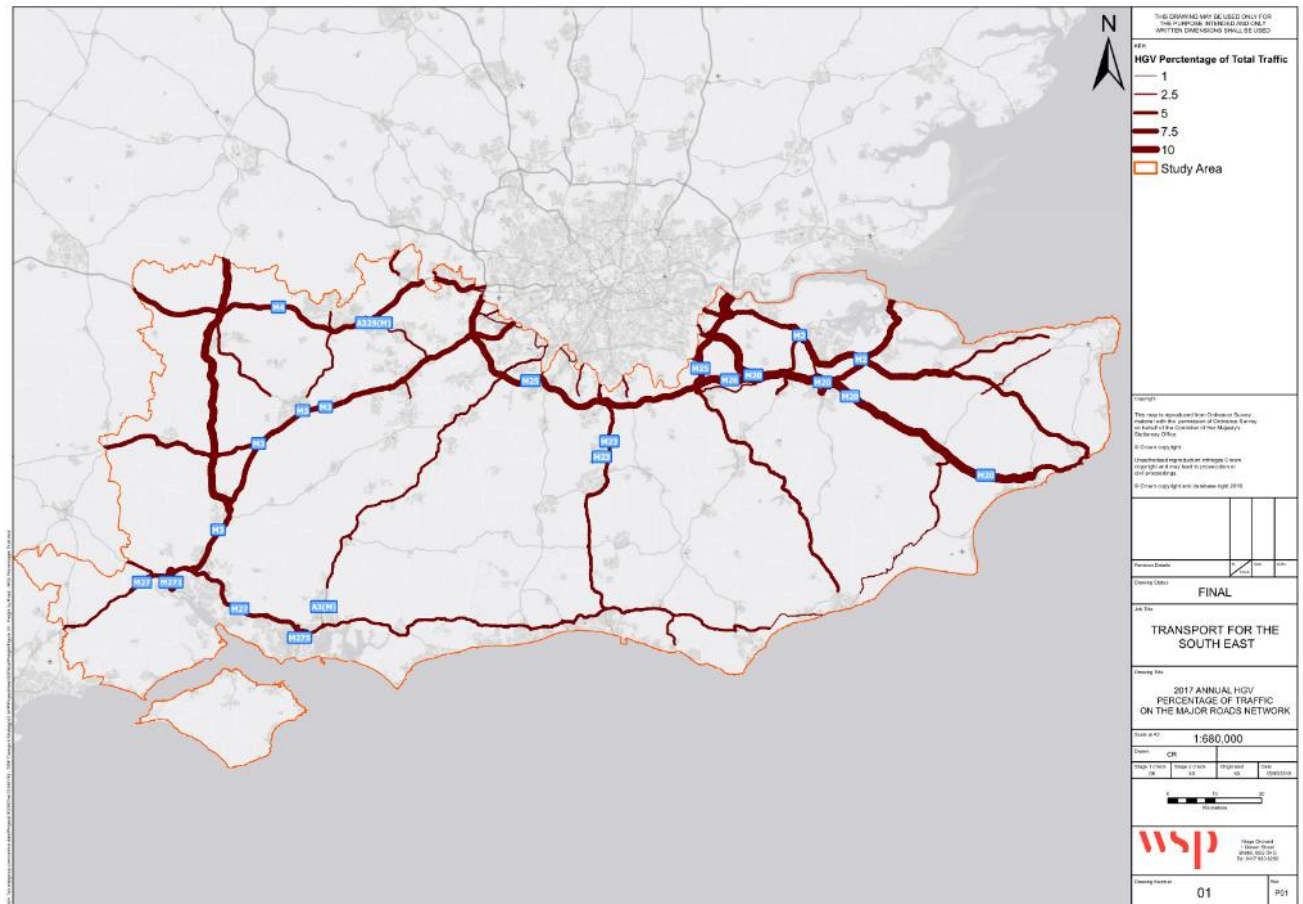
**Figure 4-10 – HGV daily count**



- 4.4.8. The importance of the M3, A34, M27, M25, and M20/M2 can all be seen. To a large extent this is not surprising as these are also the busiest corridors for car traffic, each carrying well over 10,000 HGVs per day. This number covers all hours of the day, in contrast to many traffic counts which ignore night time hours.



**Figure 4-11 – HGV daily count as a percentage of all traffic**



- 4.4.9. In the busiest sections over 10% of all traffic is HGV traffic. In traffic modelling terms, an HGV can be considered to be equivalent to 2.5 cars, meaning that, across the day, on the busiest corridors over 25% of traffic is HGVs.
- 4.4.10. In percentage terms the M20 carries the highest proportion of goods vehicles.

## 4.5 RAIL FREIGHT

### UK SITUATION

- 4.5.1. The total volume of rail freight moved in 2017/8 fell to 17 billion net tonne kilometres in 2017-18, a 1.7% reduction on 2016-17. This is the lowest total since the late 1990s. A major factor in this decline in volume has been the rapid reduction in the movement of coal to power stations.
- 4.5.2. 65% of rail freight moved (Tkm) in 2017/19 was either construction materials (25%) or intermodal containers (45%), and these are the fastest growing sectors of rail freight. (Source: ORR Freight Rail Usage 2018).
- 4.5.3. As with road freight, detailed data on rail freight volumes by location is very limited. In the case of rail this is compounded by concerns about commercial confidentiality as it would be easy to monitor the performance of individual businesses.

- 4.5.4. Good quality data is available at a national level, and Network Rail have provided access to a model which shows current and forecast volumes of freight by route. For this report an additional analysis has been undertaken by sampling a week of freight trains operated in the TfSE area and multiplying the number of trains by an average payload for each commodity to obtain an estimate of freight volume.

### **TFSE RAIL FREIGHT TERMINALS**

- 4.5.5. The map in Figure 4-12 shows the locations of rail freight terminals in the TfSE area. The vast majority are bulk construction materials terminals which bring crushed rock or sand and gravel from quarries or wharves to concentrations of population across the region. Two of these terminals are located at wharves which are major sources of construction materials for the South East (Cliffe for sea dredged sand and gravel and Grain for crushed rock).
- 4.5.6. There is only one location with intermodal terminals: the Port of Southampton, which has three plus a terminal handling cars brought in by rail for export. Together the terminals in Southampton handle up to 24 trains per day in each direction, amounting to over 3 million tonnes of goods per annum.
- 4.5.7. This highlights a lack of Strategic Rail Freight Interchanges in the region. SRFIs are a key driver of rail freight growth as they ensure that rail terminals are located close to clusters of distribution centres. SRFIs have been proposed for Colnbrook near Heathrow and Howbury in SE London, but both applications were declined.
- 4.5.8. A notable major flow which has started quite recently is the service from Grain to Colnbrook which is now the major supply route for aviation fuel for Heathrow carrying over 1.1 million tonnes per annum (estimated).
- 4.5.9. Rail Freight Interchanges have experienced difficulties in being granted planning permission in the South East. Despite the national policy, no SRFI has been built in London or the South East in the last decade.

**Figure 4-12 – TfSE rail terminals by commodity handled**



## TFSE RAIL FREIGHT COMMODITY VOLUMES

4.5.10. Table 4-3 shows an estimate of rail freight volumes moved to and from the TfSE area based on average payloads per train and an analysis of the rail timetable for a sample week (with intermodal volume based on an estimated 33% market share for rail).

**Table 4-3 – Rail freight patterns**

	Trains / Day Each Way	Share	Tonnes Per Annum	Share
Construction	22.2	44%	7,575,600	61%
Intermodal	19	38%	3,146,000	25%
Oil	6.4	13%	1,463,400	12%
Automotive	2.4	5%	175,200	1%
Total	50		12,360,200	

4.5.11. This table excludes the 3-4 trains per day which pass through the region from the continent via the Channel Tunnel.



## RAIL FREIGHT ROUTES

- 4.5.12. More than any other region, rail freight services in the TfSE area must compete with an exceptionally dense passenger rail network which is operating at or near train capacity along many routes during peak hours, with limited capacity at any time during the day.
- 4.5.13. Figure 4-13 illustrates the routes used by rail freight in the TfSE area. The 'Base Year' for this data is 2013, which means, for example, that the aviation fuel trains from Grain are not included.

**Figure 4-13 – Daily freight trains by corridor (2013, Network Rail)**



- 4.5.14. The map clearly shows the significance of the corridor from Southampton to Basingstoke and Reading which carries over 20 intermodal and automotive services per day in each direction. All other corridors are served by only 1 or 2 trains per day, nearly all construction traffic serving the large number of terminals in the region.

## 4.6 CONCLUSIONS ON FREIGHT MOVEMENTS

- 4.6.1. While the quality of data is a constraint, the analysis above does provide a clear picture of the patterns of inland freight in the TfSE area.
- 4.6.2. While the region is not a major area for manufacturing, warehousing plays an important role to serve the South East and also to serve the major ports.

- 4.6.3. Road freight is dominated by short distance movements, which is typical for the whole country. The region's roads carry important volumes of goods traffic to or from other countries, and there are also important volumes of goods to and from London, East Anglia, and the Midlands.
- 4.6.4. Rail freight movements are dominated by imports of aggregates from other regions (and from Grain and Cliffe within TfSE), and by over 20 trains per day of containers and cars to and from Southampton. A more recent major rail freight flow carries aviation fuel to Heathrow from Grain.

## 5 KEY GATEWAY PROFILES

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### 5.1 OVERVIEW

- 5.1.1. The aim of this section is to provide an overview of the ports and airports within TfSE's area that are of strategic importance to the UK. For each gateway the report includes a Strengths, Weakness Opportunities and Threats (SWOT) analysis to allow for prioritisation of interventions to support the gateways.
- 5.1.2. This chapter also provides an overview of the most recent freight and passenger figures for the ports and airports within the TfSE scope. Ports included are (in order of annual tonnage – all commodities); Southampton, Dover, Medway (including Thamesport), Portsmouth, Shoreham, Newhaven, and Ramsgate. Several important wharves in North Kent are part of the Port of London. It is not possible to obtain volumes for individual wharves, but the Port of London is included in this analysis. Airports included are Heathrow (which is actually just outside the TfSE area), Gatwick, and Southampton.
- 5.1.3. Dashboards within this section have been produced to provide key snapshot of the ports and airports within the TfSE area. Further expansion of the dashboards is located in Appendix C.

### UK PICTURE

- 5.1.4. The shipping industry transports 95% of British trade in goods (measured by volume) (DfT, 2017) . With 243 million tonnes (mt) imported and 137mt exported, the importance of UK ports is paramount to the UK economy. Equally, the ports sector is defined by the performance of the British economy. 24,000 people are directly employed by UK ports and the sector generates £2.2bn direct tax revenue to the Exchequer (£6.2bn total) (Oxford Economics). The wider shipping industry supports an estimated 186,000 jobs and contributes £14.5bn to the UK economy (DfT, 2018).
- 5.1.5. The UK's total port trends show a decrease in bulk and general cargo - largely due to the ongoing efficiencies of containerisation, with even low value products such as building materials now being imported in containers. Container standardisation (containerisation) allows goods to be handled and transported at a faster rate than ever before. The container's simple and easy to manoeuvre design requires just a standard set of lifting and transportation machinery at a port. The cost savings for shipping goods via a container arises largely out of the reduction highly labour intensive and time consuming manual labour. Many of these processes have been automated – with further automation expected. Specialist ships are optimised for transporting containers and have drawn in efficiencies in trade routing and scaling up. By stacking containers and advances in technology, it is now possible to transport 21,000 TEU (Twenty-Foot Equivalent Unit [i.e. a container]) on a single ship (based on the OOCL Hong Kong, the world's largest containership). The economies of scale achieved provide huge cost savings that make it more attractive to package traditional general cargo and bulk goods (wherever possible) into containers.
- 5.1.6. Roll on roll off (RoRo) continues to grow - led by consistent automotive manufacturing performance (until recently) and steady RoRo freight between continental Europe and the UK. A key trend has been a move towards accompanied trailers using the short channel crossings (Dover and

Eurotunnel) to provide high quality low cost direct routes, and away from unaccompanied trailers. Short sea container services (LoLo), and the longer Channel crossings.

- 5.1.7. The export of vehicles through RoRo has recently faced significant uncertainty with UK vehicle plant closures. This can however provide potential to increase import demand.

**Table 5-1 - UK total port sector - % total volume change from 2000 to 2017**

Commodity	%	
All Liquid Bulk	-35%	Liquid Nitrogen Gas (LNG) has a positive subgroup
All Dry Bulk	-11%	Driven by coal
Container	24%	
Roll On Roll Off	25%	
Other General Cargo	-23%	Iron and Steel have a less severe subgroup

## 5.2 PORT INTRODUCTIONS

### SOUTHAMPTON

- 5.2.1. The largest port in the TfSE region by land area and total tonnage handled is the Port of Southampton. The majority of the tonnage handled at Southampton is oil products, and the port is the second busiest in the UK for containers.
- 5.2.2. Southampton Port's container terminal can accommodate Ultra Large Container Ships (ULCS) and is a well-established part of shipping schedules linking the UK and Asia. While Southampton carries a higher proportion of its containers inland by rail than its main competitors, Felixstowe and London Gateway, its dependence on road access for most movements and its city centre location give rise to concerns about air quality and congestion on the main access road to the port (A33 Millbrook Road).

### DOVER

- 5.2.3. Dover is the second largest port in the TfSE area by total tonnage. Dover is the foremost gateway to the EU for the UK and has seen growth in its UK to France RoRo freight traffic. Although freight has grown, passenger traffic has declined. Passenger traffic at the Channel Tunnel (the alternative UK France vehicle rail crossing) alternative has increased over the same period.

### MEDWAY

- 5.2.4. Volume through the Medway ports cluster (which includes Sheerness) is significant within the TfSE area, however it has seen a gentle decline against the backdrop of nearby competitor port developments. Key commodities include cars, bulk products, and containers (through Thamesport).

### PORTSMOUTH

- 5.2.5. The port of Portsmouth, has significantly less volume than its close neighbour Southampton. It is an important port for the Royal Navy and for ferry services to the continent and the Isle of Wight.

## SHOREHAM, RAMSGATE, AND NEWHAVEN

- 5.2.6. While these are relatively small ports compared to the big three in the TfSE area and within the UK, they perform important local roles, particularly in brining low value commodities such as gravel and timber close to customers in the region.

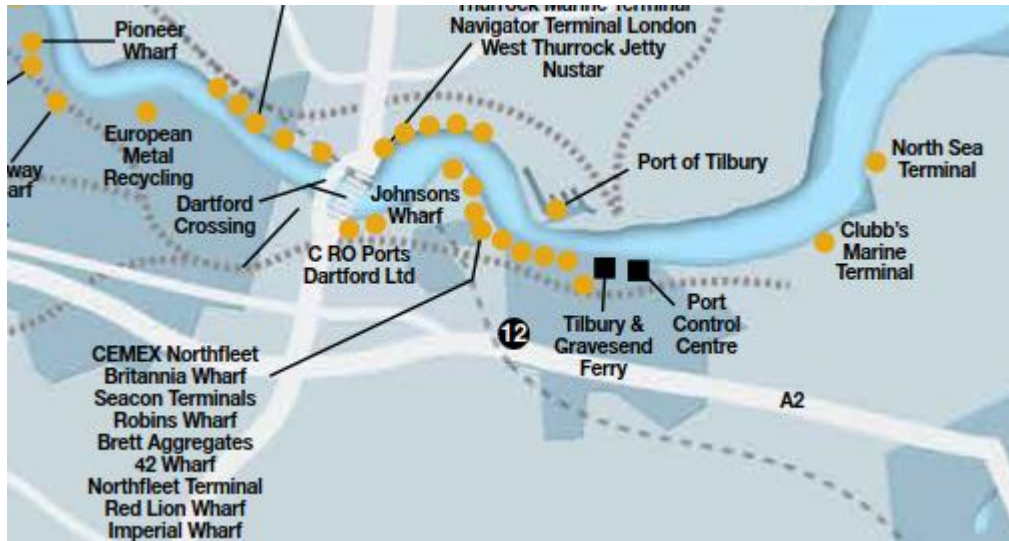
## NEIGHBOURING PORTS

- 5.2.7. Whilst out of scope several nearby ports have an impact on the TfSE both economically and for infrastructure and as such need to be considered to some degree.
- 5.2.8. The Port of London Authority (PLA) looks after 95 miles of the River Thames. Their remit is to *“keep commercial and leisure users safe, protect and enhance the environment and promote the use of the river for trade and travel”*. The PLA does not operate any wharves or ports itself.
- 5.2.9. The PLA responsibilities include the many ports and wharves along the tidal River Thames from its mouth at the North Sea up to the wharves in west and central London, on the north and the south banks. Of the south bank ports in the TfSE area (Kent) the majority of freight is aggregates for distribution to the construction industry in London and the South East. However, the area does include a small RoRo facility near Dartford. The PLA is the second largest in the UK terms of freight tonnage after Grimsby and Immingham, handling 50 million tonnes of freight in 2017.
- 5.2.10. The River Thames is the busiest inland waterway in the United Kingdom, carrying 60% of all goods lifted on the UK's inland waterway network. Latest Department for Transport statistics (2013) show over five million tonnes of freight were transported on the Thames, up 62% on the year before. This helps keep over 265,000 lorry movements a year off London's congested roads. The PLA has aspirations to increase freight movements from 45 million tonnes to 80 million tonnes by 2055.
- 5.2.11. Whilst much of the Thames is “out of the scope” of this study it remains an important feature of the area in a number of ways:

**There are wharfs on the south side of the Thames along the Kent border and therefore within the TfSE geography including waste facilities at Erith, aggregates at Purfleet, and steel and metals at Northfleet.**

- Figure 5-1 shows the key wharfs and ports south of the river within Kent from European Metal Recycling in the West to the North Sea Terminal in the East.
- A proportion of goods using the PLA ports (both within and outside the TfSE region) are inevitably moved to or from locations in the TfSE area and therefore have a dependency and impact on TfSE infrastructure.

**Figure 5-1 – Kent Thames ports/wharfs (PLA, 2018)**



- 5.2.12. Data is not available on the destination of goods coming out of the Thames wharves, however, it has been suggested by business case for the Thames River Crossing that 9% of Tilbury volumes goes south of the river and this could grow as the port develops.
- 5.2.13. Three of the PLA ports just outside the region, Purfleet, Tilbury and London Gateway, are major operations generating significant traffic flows to the TfSE area, with London Gateway seeing a large uplift as a result of recent issues with Felixstowe. Each of these ports is undergoing major expansion:
- Purfleet (50 acres for development, additional larger vessels) – RoRo and Cars;
  - Tibury (Tilbury 2, whole site will then have 13,500 vehicle movements per day). (12.5% of Tilbury employees come from Kent.); and
  - London Gateway – big growth recently because of problems at Felixstowe, plus their large “Port Centric” distribution park is growing.

## 5.3 AVIATION

- 5.3.1. Airports play an important role in the movement of high-value, time sensitive goods that many UK businesses depend upon. The aviation and aerospace industry in the UK directly provides 230,000 jobs, consists of around 4,500 business, and contributes over £22bn to the UK economy (DfT, 2019).



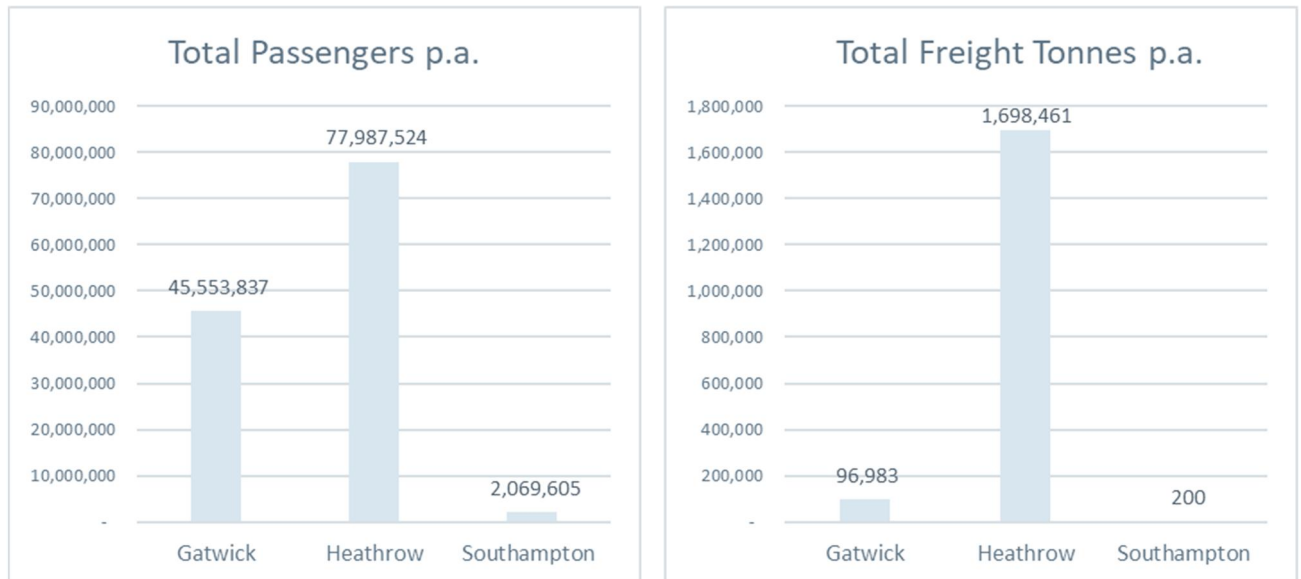
- 5.3.2. Demand for air travel in the UK is forecast to rise from 267 million passengers in 2016 to 355 million passengers by 2030 and 495 million passengers by 2050 (DfT, 2019). Gatwick, Southampton, and Heathrow account for 45% of UKs total annual passenger volumes.
- 5.3.3. Heathrow, as the UK's hub airport, handles more air cargo than all other UK airports combined. In 2017, over 1,698,000 freight tons travelled through Heathrow, as compared to 97,000 freight tons at Gatwick and 200 freight tons using Southampton airport. Heathrow is the biggest port in the UK (including sea ports) in terms of the value of goods it handles.
- 5.3.4. East Midlands and Stansted are the other significant air freight hubs in the UK (Civil Aviation Authority, 2017). This was reflected in the recent NIC "Better Delivery" report and shown in Figure 5-2.

**Figure 5-2 - NIC report Freight handled at the UK's six largest freight airports (tonnes, 2017) (NIC, 2019)**



- 5.3.5. Figure 5-3 shows how the airports in the TfSE region compare and show that especially for freight Heathrow far outstrips the others.

**Figure 5-3 - UK Airport passenger and freight statistics (2017) (Steer, 2017)**



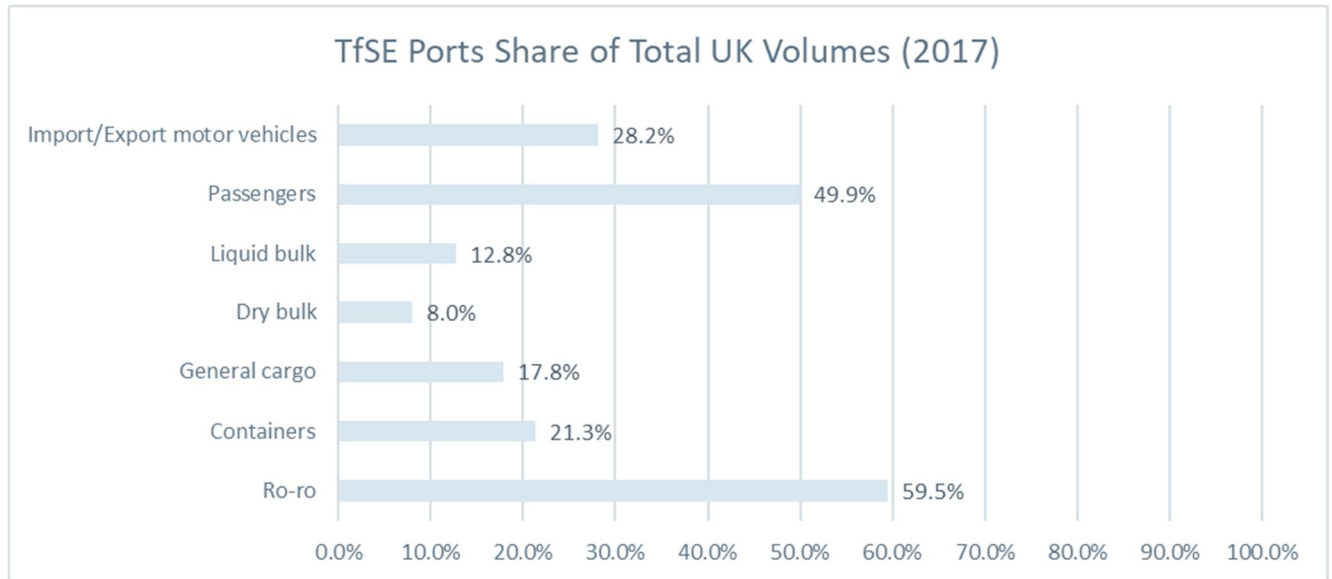
## 5.4 RAIL GATEWAYS

- 5.4.1. The South East has three international gateways providing access to Europe via the Channel Tunnel Rail Link. These are: Ebbsfleet International, Ashford International (both for passenger train services) and Folkestone Eurotunnel Terminus (for cars and lorries).
- 5.4.2. Eurotunnel's shuttle services from Folkestone are a major port operation in their own right. Carrying 2.7 million cars and coaches and 1.7 million lorries in 2018. (Dover carried 1.9 million cars and 2.8 million lorries). This equated to 11 million passengers and 22 million tonnes.
- 5.4.3. In the same year 10.3 million passenger travelled on high speed passenger services (Eurostar), and 2,000 freight trains used the Channel Tunnel between France and England. Through rail freight services carrying around 380,000 Tonnes of goods. Channel Tunnel through freight trains generally use terminals in the Midlands, but the terminal at Barking is uniquely able to accommodate "European" gauge freight wagons via HS1, which are too large for the rest of the UK network.

## 5.5 TFSE PORTS RANKINGS

- 5.5.1. The ports within the TfSE region plays a significant role in the UK port volumes, with nearly 50% of the UK's passenger operations and nearly 60% of Roll on Roll off.

5.5.2. **Table 5-2 - TfSE Port Total as percentage of UK Total 2017 (DfT, 2017)**



5.5.3. Looking at the ports in the region, Southampton and Dover are by far the largest operations in terms of cargo.

**Table 5-3 - TfSE Port's Total Cargo Throughput 2017 (DfT, 2017)**

TfSE Port	Total All Cargo (tonnes '000)
Southampton	34,471
Dover	26,223
Medway	8,694
Portsmouth	3,866
Shoreham	2,063
Newhaven	707
Ramsgate	59

5.5.4. When breaking down of TfSE ports by commodity, it can be seen that there is a broad range of cargo type. Medway for example, whilst not one of the biggest in terms of overall volume has a significant role to play in dry bulk and general cargo – more so than Southampton, that specialises in container units. Dover on the other hand is a major player in roll on roll off cargo.

**Table 5-4 - In breakdown down of TfSE ports by commodity 2017 DfT, 2017 (note different units)**

<b>TfSE Port</b>	<b>Container (TEU '000)</b>	<b>Roll on Roll off (tonnes '000)</b>	<b>Dry Bulk (tonnes '000)</b>	<b>General Cargo (tonnes '000)</b>	<b>Passengers (cruise/ferry) (units '000)</b>	<b>Import/Export Vehicles (units '000)</b>
Southampton	1,995	-	2,108	57	1,648	875
Portsmouth	79	1,790	427	520	685	11
Dover	7	25,355	22	267	1,959	1
Medway	103	-	2,947	2,116	-	328
Ramsgate	-	1	57	1	-	-
Shoreham	-	-	1,614	381	-	-
Newhaven	-	482	154	-	113	-

## 5.6 TFSE AIRPORTS RANKINGS

5.6.1. Passenger and freight volumes are shown in

5.6.2.

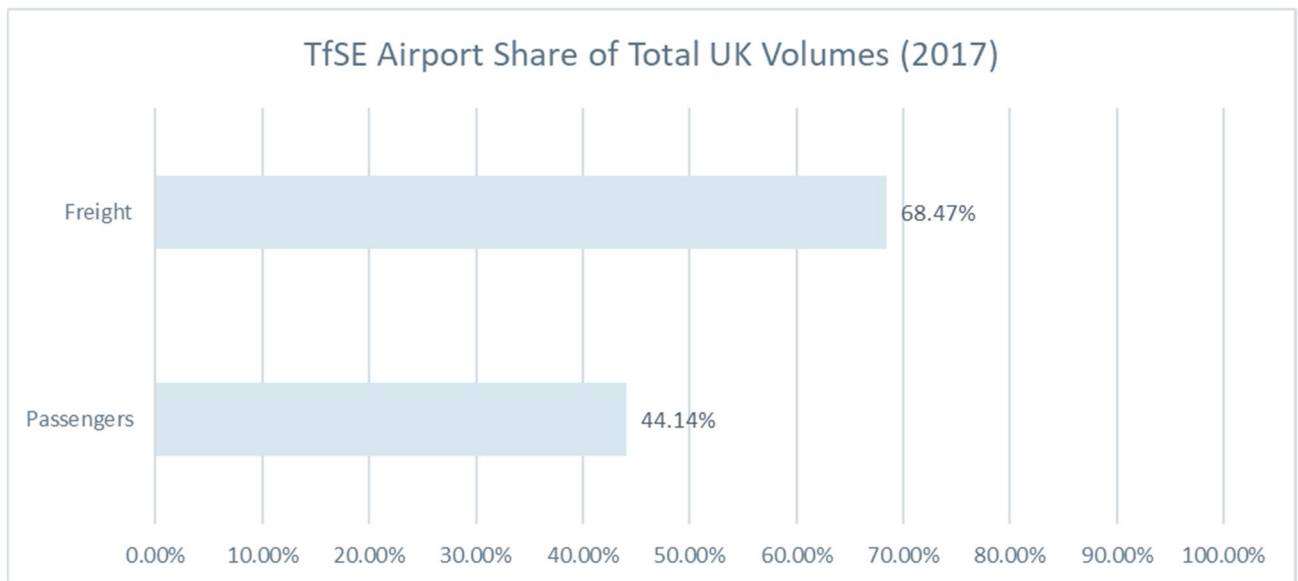
5.6.3. Table 5-5, with Heathrow ranked highest for both metrics. Heathrow's dominance is likely to further increase following any planned airport's expansion, which would increase pressure on transport infrastructure around the airport.

**Table 5-5 - Breakdown and ranking of TfSE airports by passenger and freight 2017 (CAA, 2017)**

<b>TfSE Airport</b>	<b>Passenger (units)</b>	<b>Freight (tonnes)</b>
Heathrow	77,987,524	1,698,461
Gatwick	45,553,837	96,983
Southampton Airport	2,069,605	200

5.6.4. TfSE play a significant role in terms of air gateways, with nearly 70% of freight being moved by TfSE airports and over 40% of passengers.

**Figure 5-4 - TfSE Airport total as percentage of UK total 2017 (DfT, 2017)**



## 5.7 GATEWAY DASHBOARDS

- 5.7.1. The following section provides a review of each of the international gateways presented as dashboards with the key features of the ports.
- 5.7.2. A key measure of the ports' activities is Compound Annual Growth Rate (CAGR). This provides an indication of the average annual growth rate over a time period. It is the constant annual growth rate that would deliver the total growth in the specified period. CAGR is especially beneficial as it is not hampered by individual volatilities as with standard % growth rates. When used as a standard across this port review, it provides a clear indicator of performance.
- 5.7.3. An overall score is presented for each port based on three levels of impact; national, regional, and local. Each level has two equally weighted contributing factors, which were scored based on the in-depth analysis presented in the appendices.
- 5.7.4. At the national level, Economic contribution / Gross Value Added (GVA) scores each port's contribution to the economy. This figure is often provided by ports/operating groups and is therefore somewhat variable and therefore the assessment included further review of financial results where available. Total volume provides the size, and often reach, of a port's operations across the UK. This measure is indicative to how valuable the port is to UK businesses.
- 5.7.5. At a regional level, industries served is linked to the number of commodities the port handles. This provides an idea of the scale and variation of business types in any given region. Other towns benefiting is a balance between port's competitive exposure and vicinity to large urban areas. The higher scores are ports with close vicinity to large population areas and/or ports with few competing ports nearby.
- 5.7.6. On a local level, the reliance factor is a measure of the size of the port and the size of the town/city it exists in as well as the commodities it serves. Proportionally, the large ports in a small town score the highest grades as employment and industry will be central to the local economy. Furthermore, the large ports which deal in container and RoRo are not scored so highly as these commodities are often transported straight off to the further hinterlands. Small ports central to the community and

even over reliant on the port do score high on this metric albeit for negative reasons. The following metric seeks to neutralise any unjustified heavy weighting on the former. Number of investments is used to indicate local economic activity. Broadly speaking, each investment researched is expected to have a level of positive economic impact on the local area.

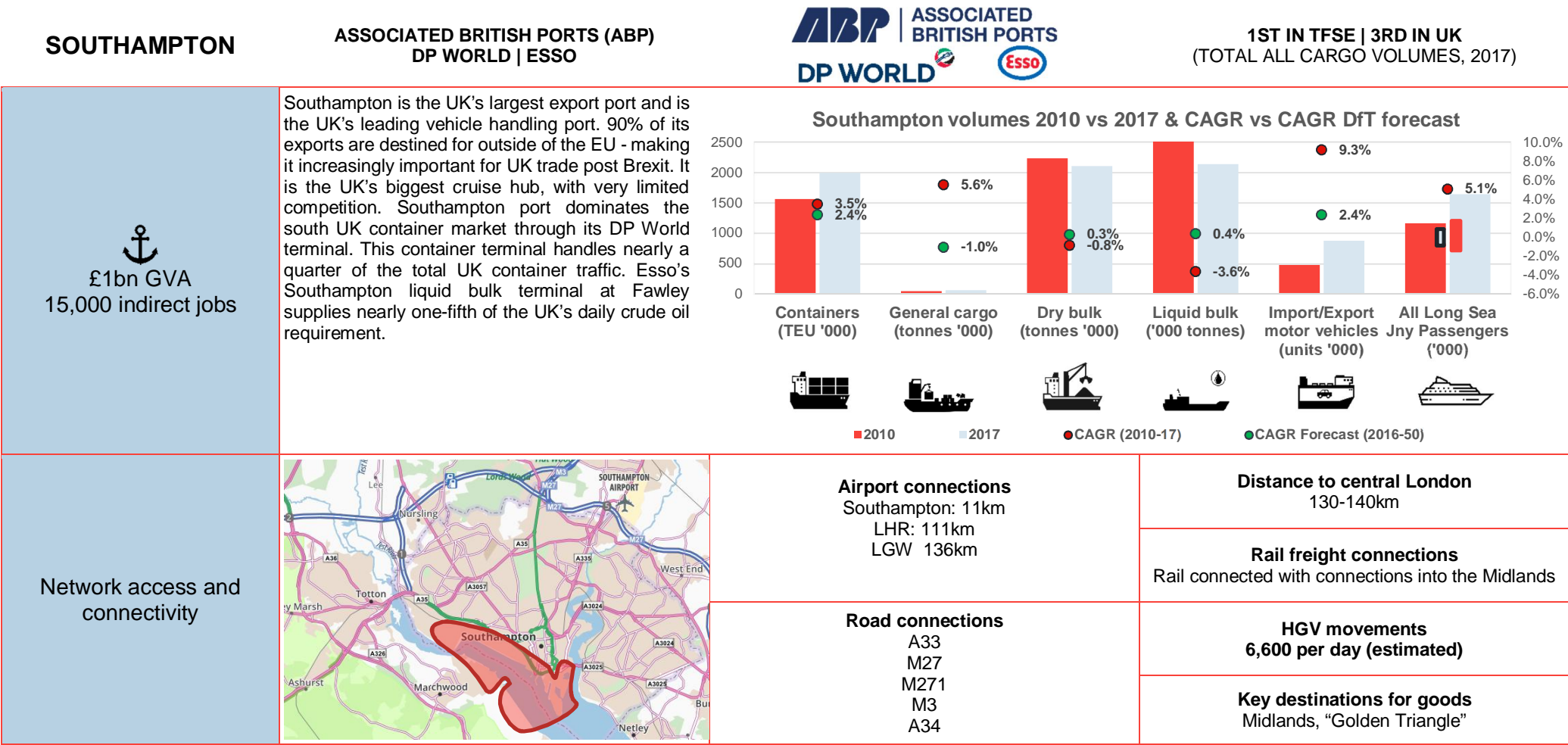
- 5.7.7. The overall comparisons between each of the gateways is found in Table 5-6 and shows, not surprisingly, that Heathrow, Gatwick, Southampton and Dover come out as the “top 4” in terms of overall impact.

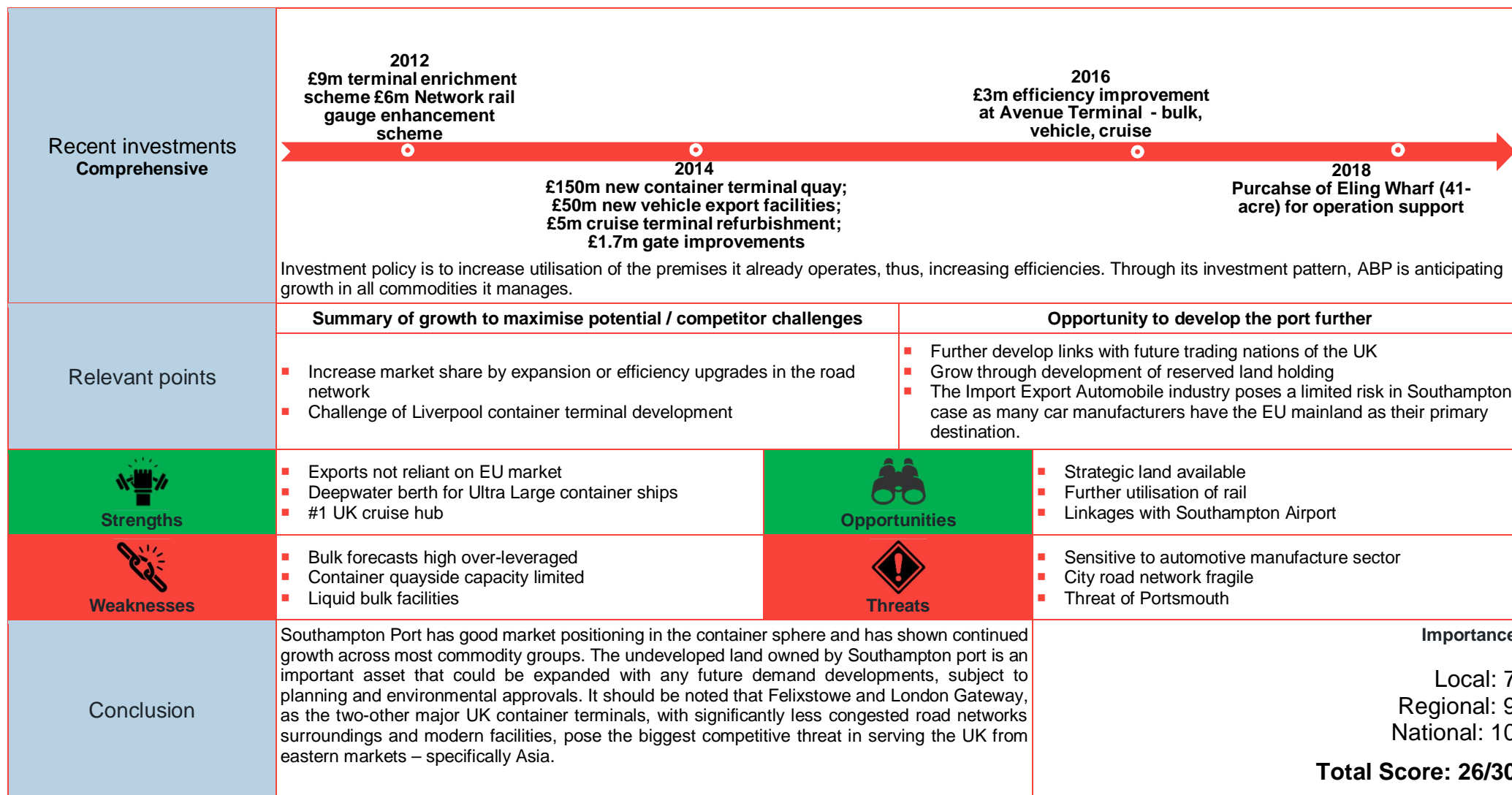


**Table 5-6 – Results of international gateway assessment**

Grading Analysis	Southampton	Dover	Medway	Portsmouth	Shoreham	Newhaven	Ramsgate	Heathrow	Gatwick	Southampton Airport	Channel Tunnel
<b>National Significance</b>	10	10	8	6	4	2	1	10	8	2	9
GVA	5	5	3	3	2	1	0	5	4	1	5
Total Volume	5	5	5	3	2	1	1	5	4	1	4
<b>Regional Significance</b>	9	5	10	6	7	3	2	10	9	6	10
Industries Served	5	2	5	3	3	1	1	5	4	3	5
Towns Benefiting	4	3	5	3	4	2	1	5	5	3	5
<b>Local Significance</b>	7	10	5	8	5	5	4	9	7	6	5
Reliance	3	5	3	4	1	3	4	4	4	3	4
Number of Investments	4	5	2	4	4	2	0	5	3	3	1
Overall	26	25	23	20	16	10	7	29	24	14	24

Figure 5-5 – Southampton Port dashboard





**Figure 5-6 – Dover Port dashboard**

## DOVER

## DOVER HARBOUR BOARD

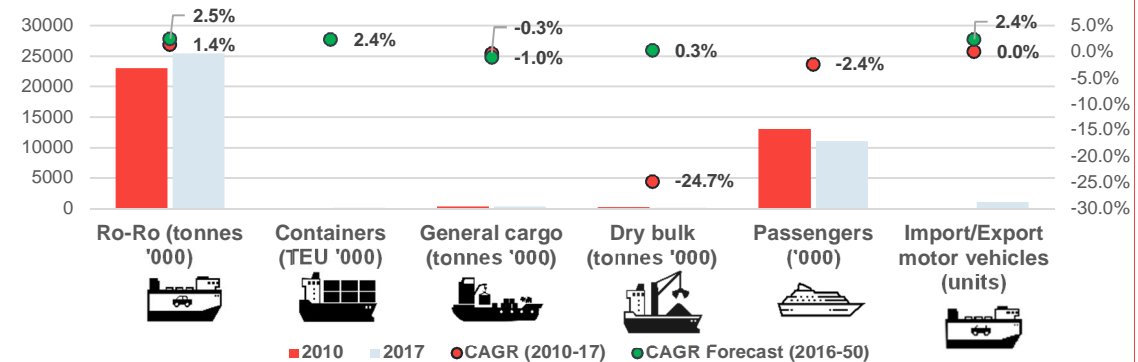


**2ND IN TFSE | 9TH IN UK**  
(TOTAL ALL CARGO VOLUMES, 2017)

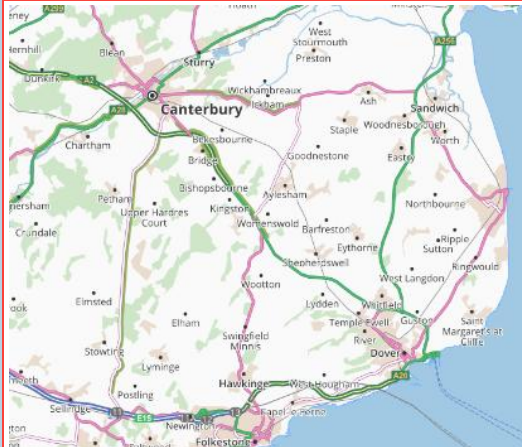
£10.2m (2017) operating profit

Dover is the busiest international RoRo port in Europe based on volume. Annually 2,600,000 freight vehicles are handled at the port and around 50% of the traffic goes beyond the South-East region in the UK. The Port of Dover handles 17% of the UK's total trade in goods. Dover is currently served by ad-hoc refrigerated calls as well as scheduled liner freight refrigerated services. The port's established trade routes are; the Peru - Ecuador - Europe reefer service of Seatrade, and the Geest Lines' Caribbean - Europe reefer service. These services are handled at the Eastern Docks.

**Dover volumes 2010 vs 2017 & CAGR vs CAGR DfT forecast**



Network access and connectivity



### Airport connections

Southampton: 240km  
LHR: 127 km  
LGW 168 km

**Distance to central London**  
133 km

**Rail freight connections**  
None

### Road connections

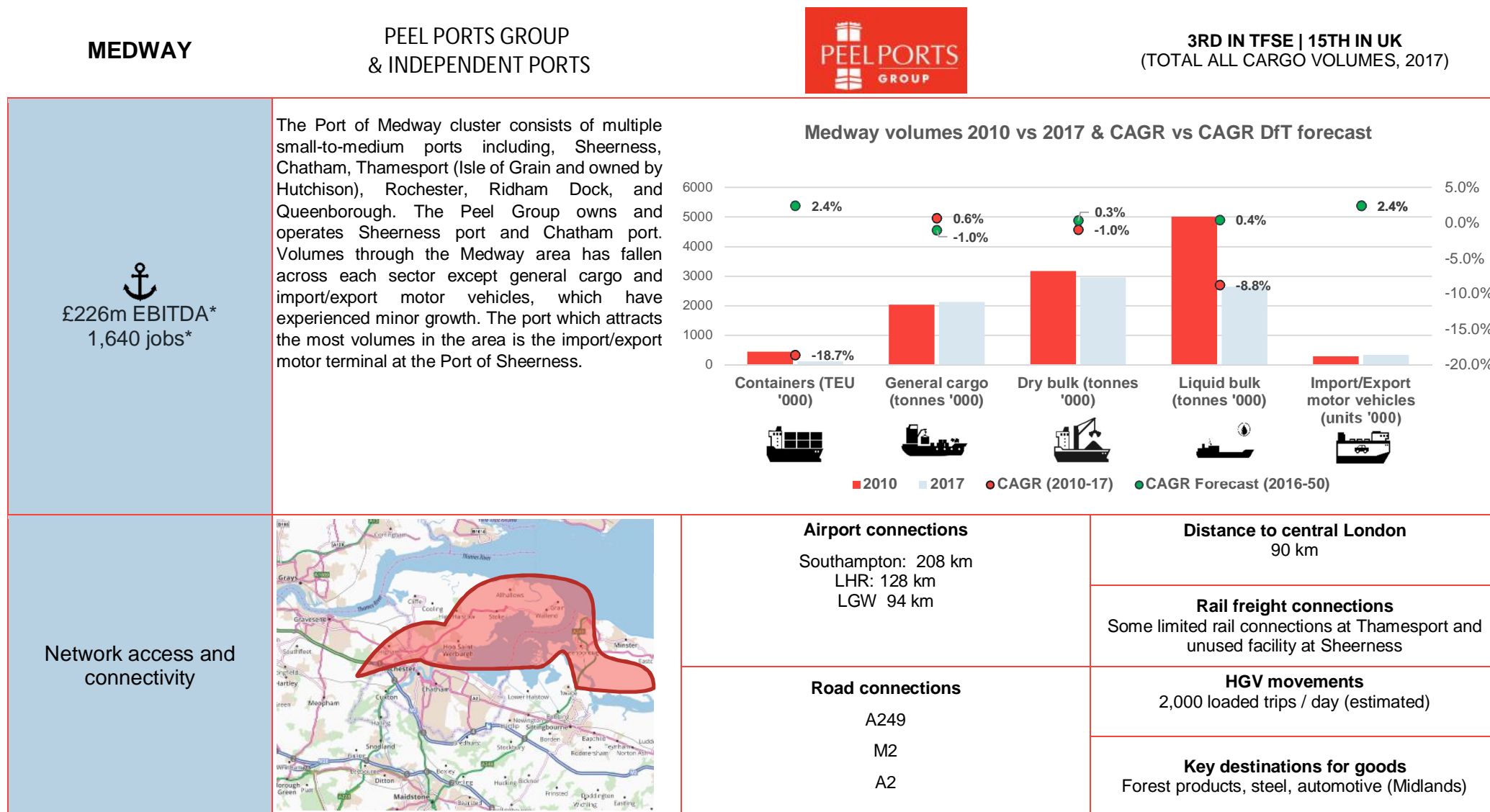
M20 direct to A20 link  
M2 to A2 link  
M20  
M2  
A20  
A2

**HGV movements**  
2.6 million freight vehicles a year

**Key destinations for goods**  
Half of the vehicles going beyond the South East, typically to the Midlands and the North.

Recent investments Comprehensive	<div> <div> 2017 £115m Marine civil engineering contract for Dover Western Docks Revival (DWDR) </div> <div> 2019 Purchase of Two Konecranes Gottwald Model 5 mobile harbour cranes for the new multipurpose terminal (part of DWDR) </div> <div> 2019 £15m temperature-controlled warehouse to form new Refrigerated Cargo Terminal (RCT) (part DWDR) </div> </div> <p>Investments from Dover through the DWDR project will diversify the commodity capabilities of the Port. With Dover's strong market presence, they are investing to attract additional freight from non-RoRo shipping.</p>		
Relevant points	<b>Summary of growth to maximise potential / competitor challenges</b> <ul style="list-style-type: none"> <li>Through the DWDR project Dover's revenue stream should diversify</li> <li>New passenger and freight routes to Belgium or further afield</li> <li>Ramsgate challenge appears to have almost entirely diminished</li> </ul>		<b>Opportunity to develop the port further</b> <ul style="list-style-type: none"> <li>Brexit may provide opportunities for Dover to capitalise</li> <li>The DWDR investments underway should prepare for a capture of any such changes</li> </ul>
<b>Strengths</b>	<ul style="list-style-type: none"> <li>New redevelopment/diversification</li> <li>Focal point of UK - France access</li> <li>Geographical location</li> </ul>	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Strategic expansion</li> <li>New routes</li> <li>Collaboration with Channel Tunnel</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Reliance on UK – France/EU relations</li> <li>Reliance on road network 75% of revenue from RoRo/ferries</li> <li>Very limited land area</li> <li>No rail freight alternative</li> </ul>	<b>Threats</b>	<ul style="list-style-type: none"> <li>Congestion/strike action</li> <li>Human migration issue unresolved</li> <li>Channel Tunnel to secure passenger and freight business</li> </ul>
Conclusion	<p>Dover port will remain a key player in the continental Europe to UK market. With the DWDR development, Dover will be able to diversify, which should mean less reliance on RoRo traffic. Opportunities to attract cargo from further afield may also be possible if efficient truck loading facilities are developed appropriately. Further collaboration with Ramsgate port, for example, could be developed.</p>		<b>Importance</b>  Local: 10 Regional: 5 National: 10  <b>Total Score: 23/30</b>

Figure 5-7 – Medway Ports dashboard










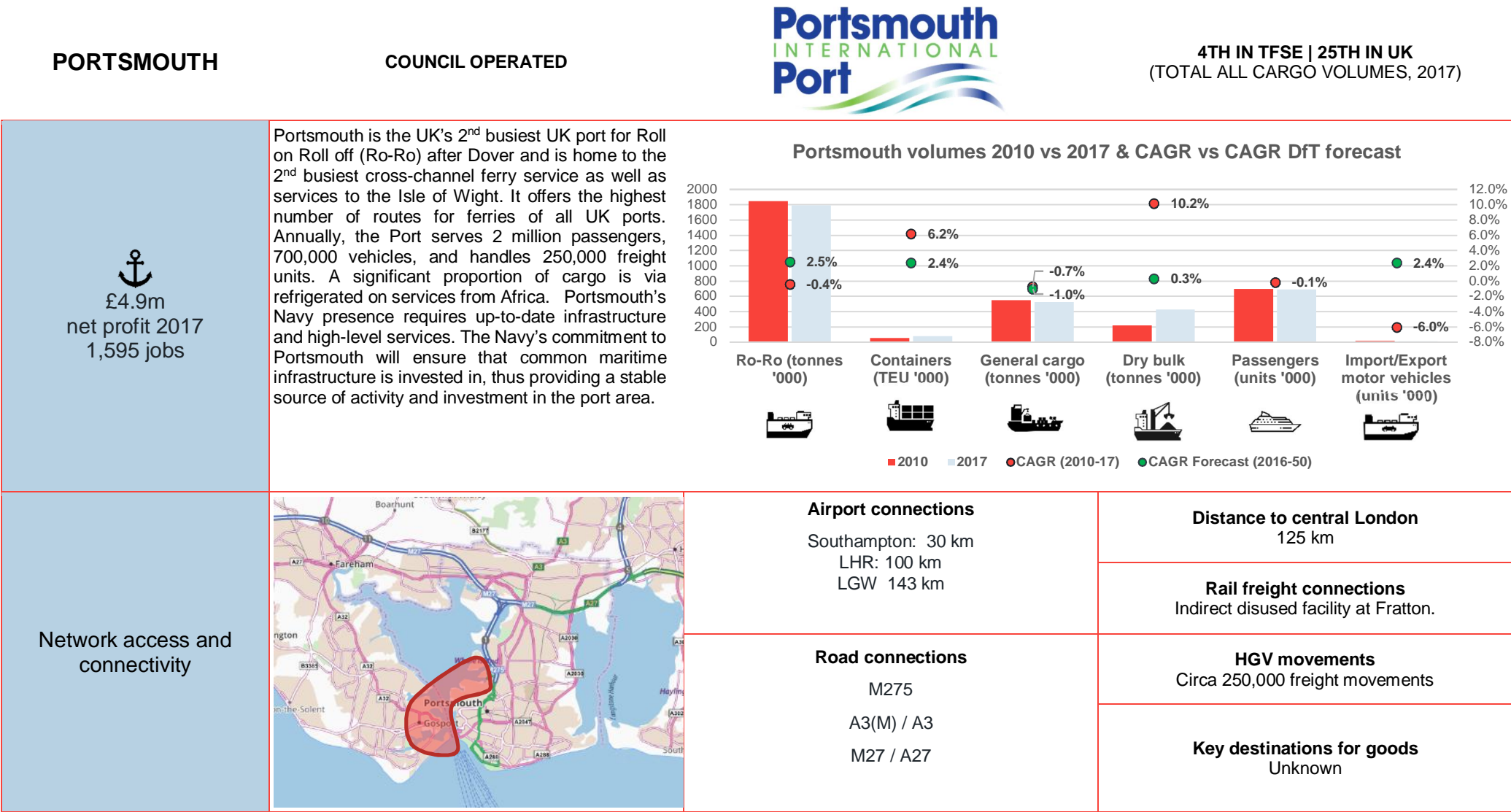
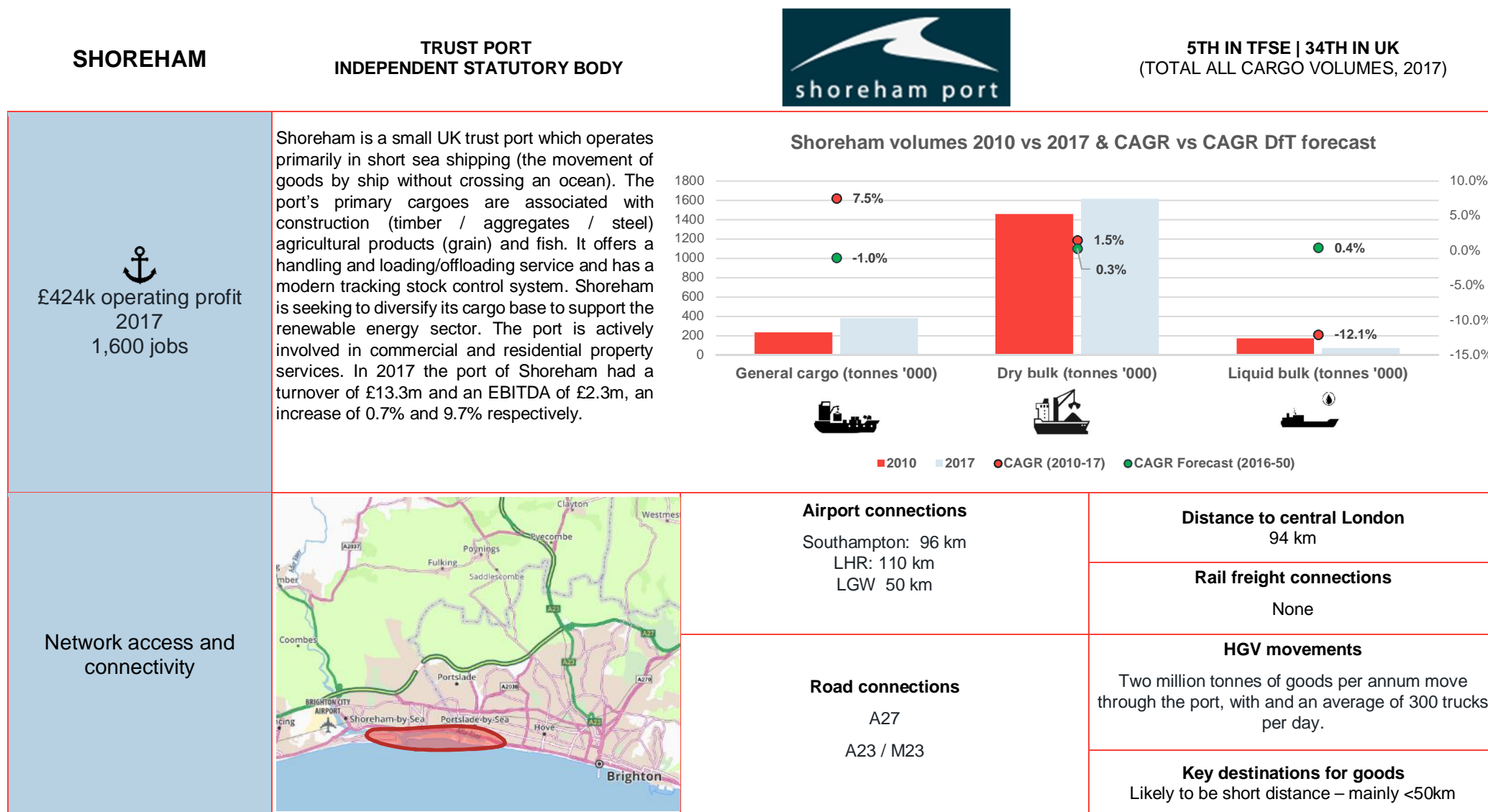
<p>Recent investments Low</p>	<p style="text-align: center;"><b>2015-19</b>  <b>Peel Ports Group: £27m investment in vehicle storage and warehouse capacity.</b>  <b>Warehousing increasing by 30,000 square meters at Sheerness.</b>  <b>Grain facilities improved £5.4m (included in the £27m)</b></p>  <p>Investments in the Medway area have been minor. The appetite to expand is likely discouraged by the presence of Tilbury docks and London Gateway, which dominate the growth sectors of containers and Roll on Roll off (RoRo) with superior facilities, and which have a similar distance to the London market but without the barrier of the M25 / Dartford Crossing to the rest of the UK.</p>		
<p>Relevant points</p>	<p><b>Summary of growth to maximise potential / competitor challenges</b></p> <ul style="list-style-type: none"> <li>▪ Liquid Natural Gas (LNG) imports, expected to rise in the UK, should be capitalised on</li> <li>▪ Facilities should be maintained and developed to maintain market share against faster growing competitors</li> </ul>	<p><b>Opportunity to develop the port further</b></p> <ul style="list-style-type: none"> <li>▪ With numerous small ports in the Medway region, there is potential scope for collaboration</li> <li>▪ Development of facilities to compete with major Thames river ports is required</li> </ul>	
<p> Strengths</p>	<ul style="list-style-type: none"> <li>▪ Liquid Natural Gas ingress point</li> <li>▪ Short distance to London</li> </ul>	<p> Opportunities</p>	<ul style="list-style-type: none"> <li>▪ Collaboration</li> <li>▪ Further develop import/export vehicle hub</li> <li>▪ Underutilised Thamesport could be developed for short sea Lift on Lift off (LoLo)</li> </ul>
<p> Weaknesses</p>	<ul style="list-style-type: none"> <li>▪ Internal area competition</li> <li>▪ Demand uncertain</li> </ul>	<p> Threats</p>	<ul style="list-style-type: none"> <li>▪ Tilbury 2 expansion</li> <li>▪ Container volume loss</li> </ul>
<p>Conclusion</p>	<p>London Medway port cluster has lost significant container traffic to the recently developed and growing London Gateway – which is focussed on containers and has a good location next to the M25. Total volumes have gradually decreased across most areas and the Medway ports could benefit from working together to improve competitiveness and continually advertise their strategic position of being quick to access London. Further developments in the Liquid Natural Gas market specifically should be considered to capitalise on forecasted volume growth. With most other commodities, the competition from Tilbury will continue to be threatening - even if increased competitiveness is achieved by London Medway.</p>		<p style="text-align: right;"><b>Importance</b></p> <p style="text-align: right;">Local: 7 Regional: 10 National: 5</p> <p style="text-align: right;"><b>Total Score: 23/30</b></p>

Figure 5-8 – Portsmouth Port dashboard



Recent investments Comprehensive	<div> <div> 2011 New cruise terminal - part of investment in new passenger facilities £16.5m </div> <div> 2012 New cranes and new warehouses. 2 shipping berths being upgraded </div> <div> 2019 £100m refit for the dry dock and dredging improvements by the Royal Navy </div> <div> 2019 £18.7m to improve ferry operations and cruise market </div> </div> <p>Investment policy of Portsmouth is following the trend of the cruise sector growth, although its numbers have not been convincingly positive.</p>		
Relevant points	<b>Summary of growth to maximise potential / competitor challenges</b> <ul style="list-style-type: none"> <li>Attract passenger traffic to/from Dover - if it experiences congestion.</li> <li>Collaboration with the Navy should be maintained as infrastructure developments could be supported by military funds.</li> </ul>	<b>Opportunity to develop the port further</b> <ul style="list-style-type: none"> <li>Development of the refrigerated market</li> </ul>	
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Established and varied cruise routes</li> <li>Non-EU refrigerated routes</li> <li>Good rail access for passengers</li> </ul>	<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Further distribution to midlands and south east</li> <li>Cooperation with military funding</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Flat ferry/RoRo market volumes</li> <li>Lack of space / land</li> <li>Over-congestion</li> </ul>	<b>Threats</b>	<ul style="list-style-type: none"> <li>Southampton competition</li> <li>Reduction in market share</li> </ul>
Conclusion	<p>Portsmouth has seen declines in throughput in most commodity groups. General bulk and refrigerated trade are likely to be the most stable import/export group in the near future as demand in the local hinterland appears stable. The outlook for upscaling at the port is unlikely due to the well-established large and diverse port of Southampton. Partnership with the Navy can be mutually beneficial in providing for modern infrastructure and facilities utilisation.</p>		<b>Importance</b>  Local: 7 Regional: 6 National: 7  <b>Total Score: 20/30</b>

Figure 5-9 – Shoreham Port dashboard








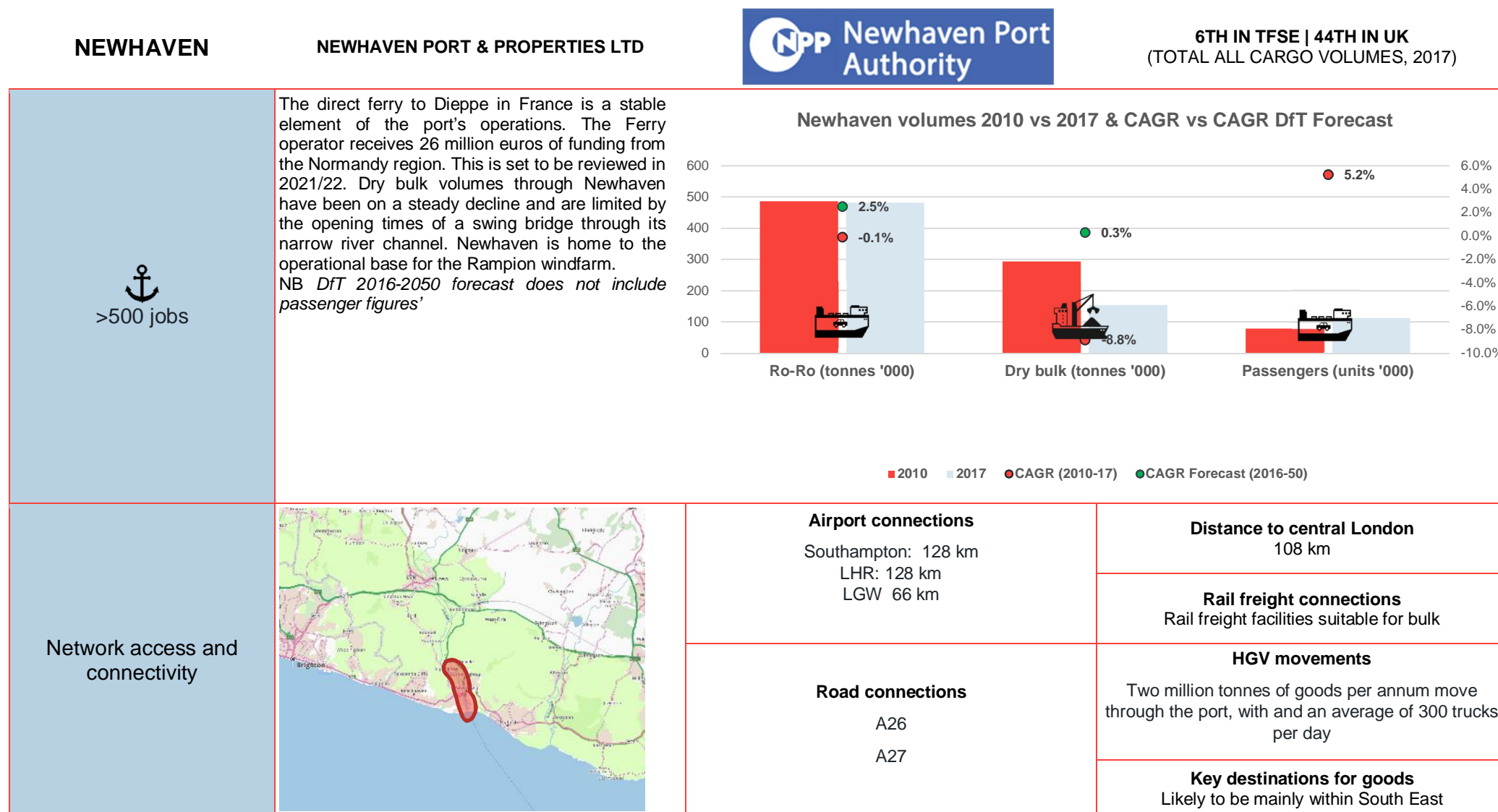





Recent investments Suitable	<p style="text-align: center;"><b>2014 to 2017 - £6m spent on up-keep</b></p>  <p style="text-align: right;"><b>2017 - £579k on capital investment projects</b></p> <p>Investments primarily aimed at; Marine/ operations streams; expansion of property base through strategic acquisition of key sites; and the development of new units in the East Arm. Shoreham's investment policy is limited in shipping and more focussed in realising opportunities in property and commercial real estate. Investment required for maintenance is expected to continue however no significant growth in volumes are catered for if they were to arise.</p>		
Relevant points	<b>Summary of growth to maximise potential / competitor challenges</b>		<b>Opportunity to develop the port further</b>
	<ul style="list-style-type: none"> <li>Overall growth possible if the port continues with pursuing a wide range of initiatives</li> <li>Renewable energy market niche</li> </ul>	<ul style="list-style-type: none"> <li>Market port as efficient, diverse, high level service with proximity to Brighton hinterland</li> <li>Opportunity to develop commercial activities for Brighton market remain possible</li> </ul>	
 Strengths	<ul style="list-style-type: none"> <li>Established local port</li> <li>Position on English Channel</li> </ul>		 Opportunities <ul style="list-style-type: none"> <li>Diversification</li> <li>Collaboration</li> </ul>
 Weaknesses	<ul style="list-style-type: none"> <li>Expansion limited</li> <li>Road access</li> </ul>		 Threats <ul style="list-style-type: none"> <li>Limited quay-side infrastructure</li> <li>Inability to compete – without scale</li> </ul>
Conclusion	Shoreham is limited in upscaling operations, however, as an alternative to the typical infrastructure expansion growth model, the port is seeking to diversify its operations and maintain its levels of service.		<p style="text-align: right;"><b>Importance</b></p> <p style="text-align: right;">Local: 4 Regional: 7 National: 5</p> <p style="text-align: right;"><b>Total Score: 16/30</b></p>

Figure 5-10 – Newhaven Port dashboard





Recent investments Limited	<p style="text-align: center;"><b>2012</b> £3m in improvements; Marine leisure boating facilities - £0.4 million; Fishing industry investments - £1.3 million; Maintenance and improvement of waterways/seabed levelling - £1m</p>  <p style="text-align: right;"><b>2019</b> Access road improvements £23.2 m</p> <p>Newhaven maintenance policy is essential for the ferry terminal and fishing industry which drive revenue.</p>		
Relevant points	<b>Summary of growth to maximise potential / competitor challenges</b>		<b>Opportunity to develop the port further</b>
	<ul style="list-style-type: none"> <li>Expansion of services to offer niche products – like Shoreham</li> <li>Increase competition with Dover for London to Paris route</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of multiple ferry crossings</li> <li>Develop infrastructure in small town – establish as a key crossing point, a new access road is currently under construction</li> </ul>	
 Strengths	<ul style="list-style-type: none"> <li>Established Ferry Route</li> <li>Geographical location</li> <li>Access road under construction</li> </ul>	 Opportunities	<ul style="list-style-type: none"> <li>Additional ferry route</li> <li>Take market from Dover – Calais route (London to Paris route)</li> <li>Rail freight opportunities</li> </ul>
 Weaknesses	<ul style="list-style-type: none"> <li>Access to cargo berths</li> <li>Expansion costly</li> </ul>	 Threats	<ul style="list-style-type: none"> <li>Reliant on subsidised ferry line</li> <li>Limited captive market</li> </ul>
Conclusion	<p>Newhaven has specialised its service offering to its ferry link to France. The French subsidy which ensures the ferry operations prove a lifeline to the continuation of the service, and consequently, continuation of the port. Increasing business viability of the ferry to run without subsidies should be of paramount importance. If achieved, this could encourage investment and expansion. There is a case for Newhaven to realise its past potential as a viable alternative route from London to Paris.</p>		<p style="text-align: right;"><b>Importance</b></p> <p style="text-align: right;">Local: 2 Regional: 3 National: 5</p> <p style="text-align: right;"><b>Total Score: 10/30</b></p>

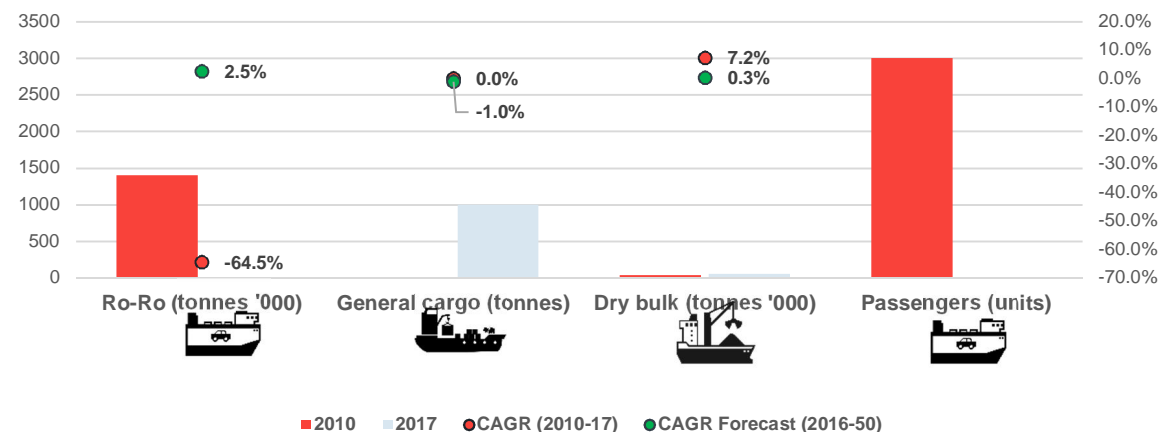
## RAMSGATE

**THANET DISTRICT COUNCIL**

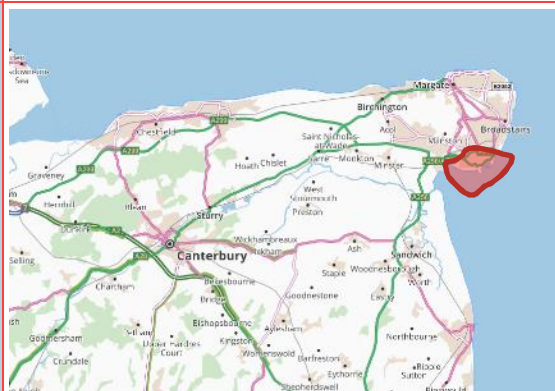


£1.8m loss 2017

Ramsgate was a commercial port and, until recently, operated a ferry services to both Dunkirk and Ostend. It is now primarily a construction/operation/maintenance base for three nearby offshore wind farms. Financial reporting from Thanet Council indicates Ramsgate port generating a deficit of £1.8m in 2017-2018.



## Network access and connectivity



### Airport connections

Southampton: 252 km

LHR: 175 km

LGW 136 km

## Road connections

A229

M2

**Distance to central London**  
133 km

### Rail freight connections

No rail connections

## HGV movements

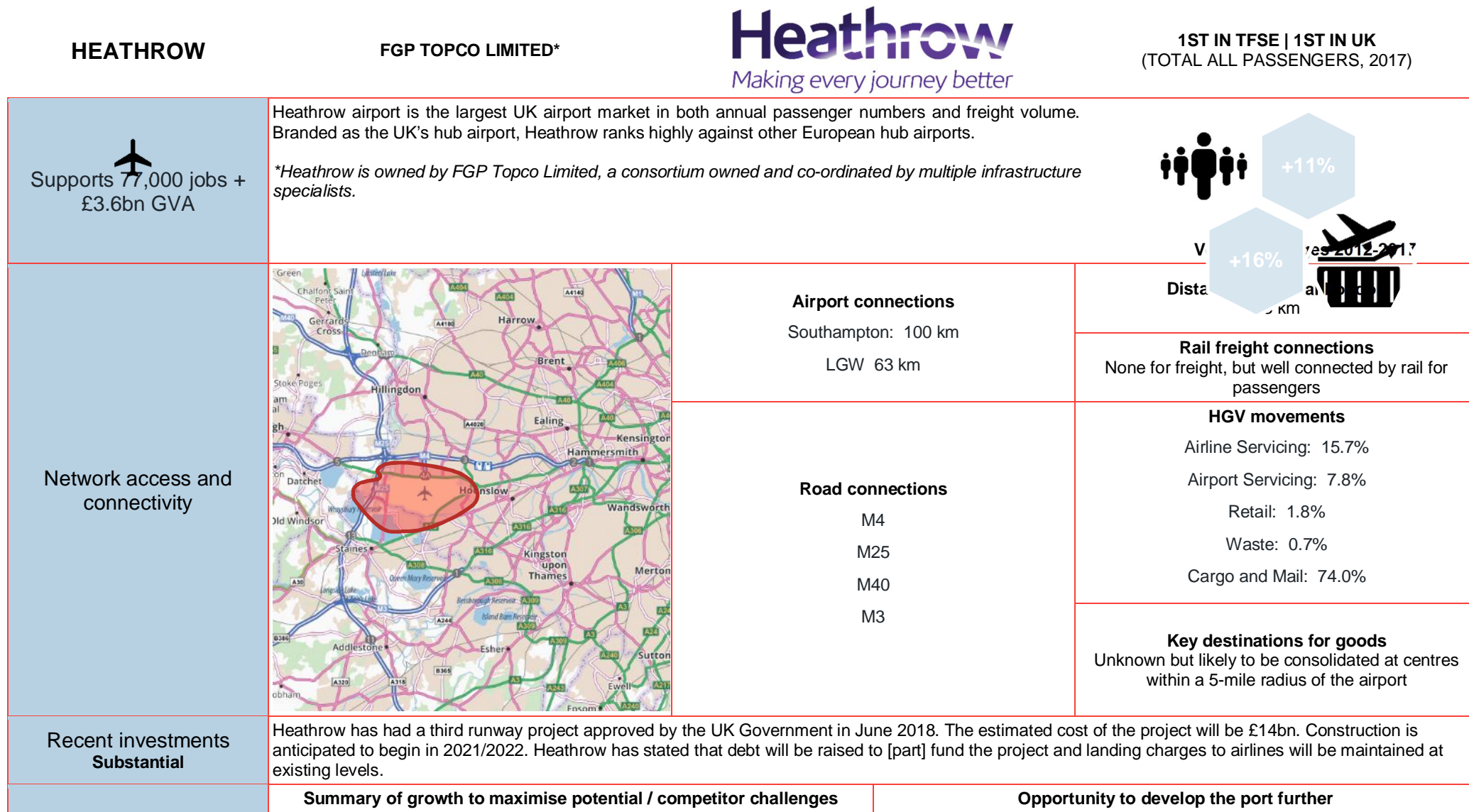
Unknown

### Key destinations for goods

Unknown

Recent investments Insufficient	Recent plans to dredge and re-open a short sea ferry service to Belgium have been cancelled. Proposal ongoing for an extension to the existing and operational Thanet Offshore Wind Farm in Kent. The project will involve the addition of up to 34 turbines on the edges of the existing wind farm and require continued use of Ramsgate for the construction process and ongoing operations. As a council run port, National and regional political issues have impacted Ramsgate investment potential. The commodity breakdown of Ramsgate does not provide confidence in future freight trends.		
Relevant points	Summary of growth to maximise potential / competitor challenges		Opportunity to develop the port further
	<ul style="list-style-type: none"> <li>Stable demand outlook is not reliable.</li> <li>Currently does not pose a competitive threat</li> </ul>		<ul style="list-style-type: none"> <li>Infrastructure upgrades could help to increase presence of the port and allow it to compete with, or indeed work with, neighbouring ports – specifically Dover</li> </ul>
 Strengths	<ul style="list-style-type: none"> <li>Established Ferry Route</li> <li>Geographical location</li> </ul>		 Opportunities <ul style="list-style-type: none"> <li>Collaboration with Dover</li> <li>Capacity available</li> </ul>
 Weaknesses	<ul style="list-style-type: none"> <li>Political/Council leadership</li> <li>Ageing Infrastructure</li> </ul>		 Threats <ul style="list-style-type: none"> <li>Failure to maintain business</li> <li>Reputation damage</li> </ul>
Conclusion	Ramsgate is a well-established port with a good location and a history of handling volumes. It appears to be in decline based on recent throughput and requires stimulus. Interactions between the council, government, and local lobby groups have not reached agreement on the future of the port.		<b>Importance</b>  Local: 4 Regional: 2 National: 1  <b>Total Score: 7/30</b>

Figure 5-12 – Heathrow Airport dashboard







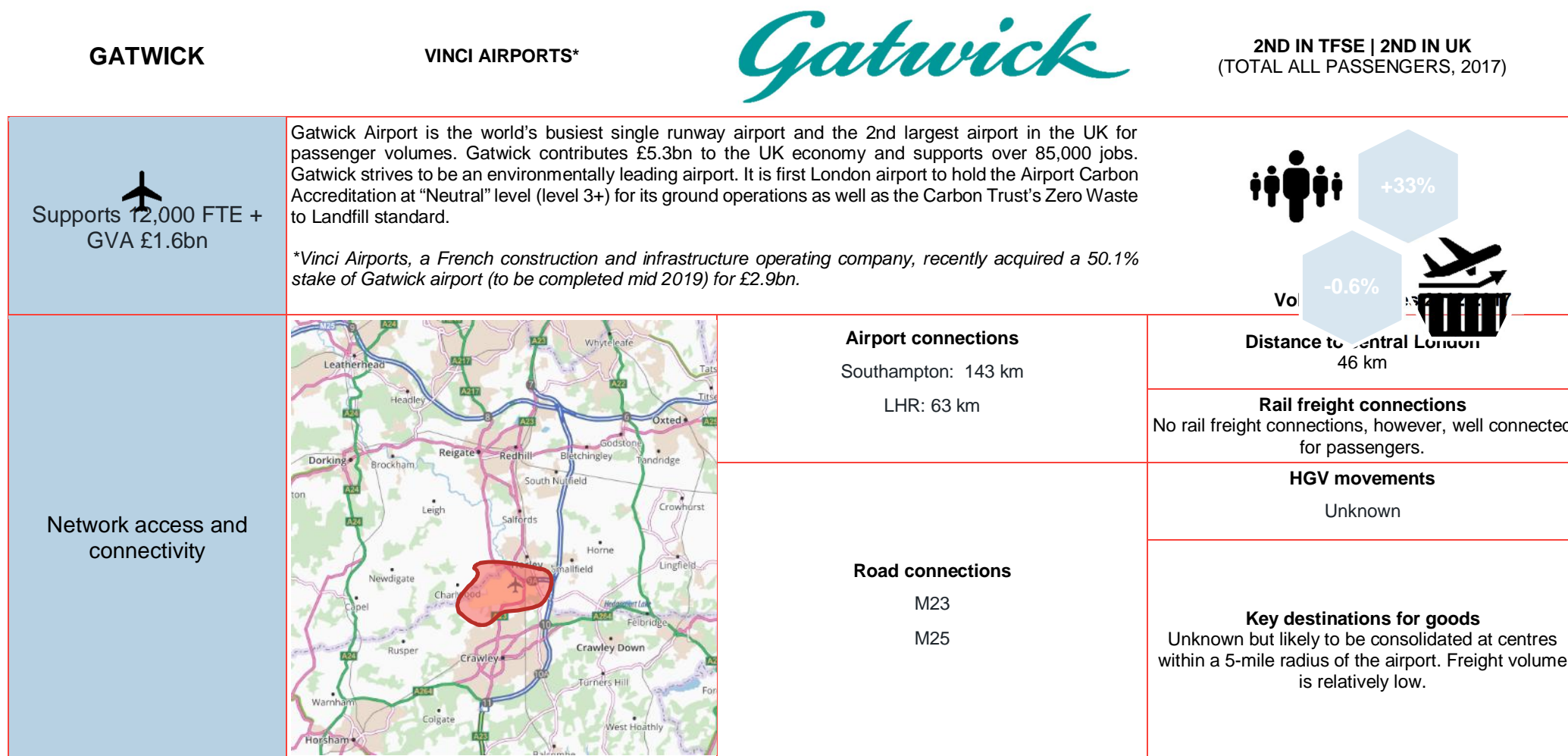
Relevant points	<ul style="list-style-type: none"> <li>Growth in volumes expected to continue as Heathrow's role as the largest UK hub airport relatively unchallenged.</li> <li>Third runway to further UK hub status – disruptions during construction likely to lose volumes to rivals (including Gatwick)</li> </ul>		<ul style="list-style-type: none"> <li>Rail connectivity – large opportunity as volumes set to rise with third runway. New access route planned including to West and South</li> <li>Crossrail project to expand passenger market from London</li> </ul>
 <b>Strengths</b>	<ul style="list-style-type: none"> <li>UK and international hub</li> <li>Proximity to London</li> <li>Proven demand</li> <li>Huge variety of destinations</li> </ul>	 <b>Opportunities</b>	<ul style="list-style-type: none"> <li>Attract continued growth in passenger volumes</li> <li>Expansion/improvement of rail</li> <li>Freight tonnage continued growth</li> </ul>
 <b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Expansion costly and time consuming</li> <li>Lack of rail freight access</li> <li>Drop in market share as capacity is reached</li> </ul>	 <b>Threats</b>	<ul style="list-style-type: none"> <li>Opposition to expansion plans</li> <li>Delay in realising expansion plans</li> </ul>
Conclusion	<p>With any expansion plans implemented there will be a need review the supporting infrastructure to ensure that access and network development can help realise any expansion that comes forward.</p>		<p><b>Importance</b></p> <p>Local: 9 Regional: 10 National: 10</p> <p><b>Total Score: 29/30</b></p>

Figure 5-13 – Gatwick Airport dashboard









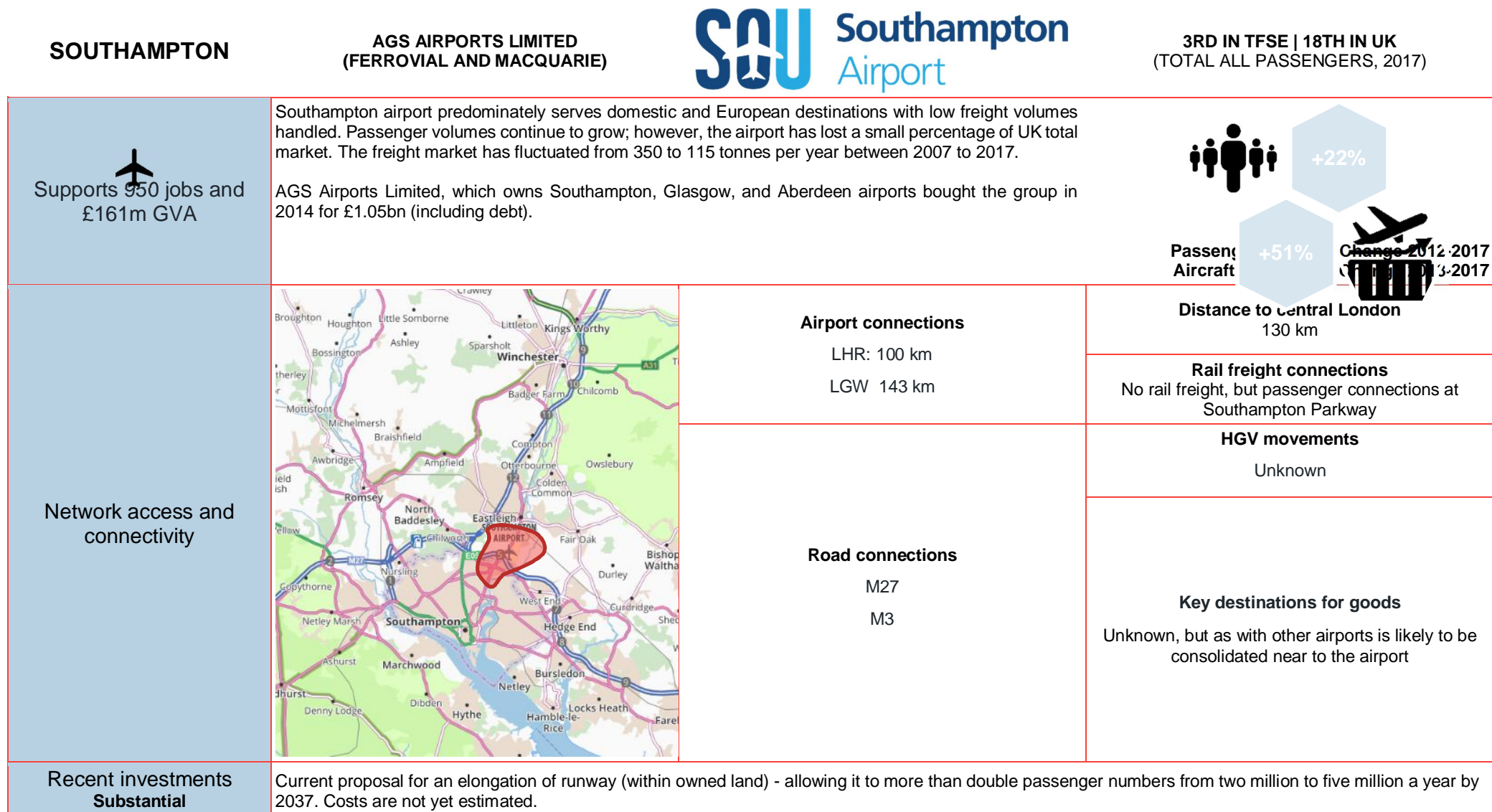
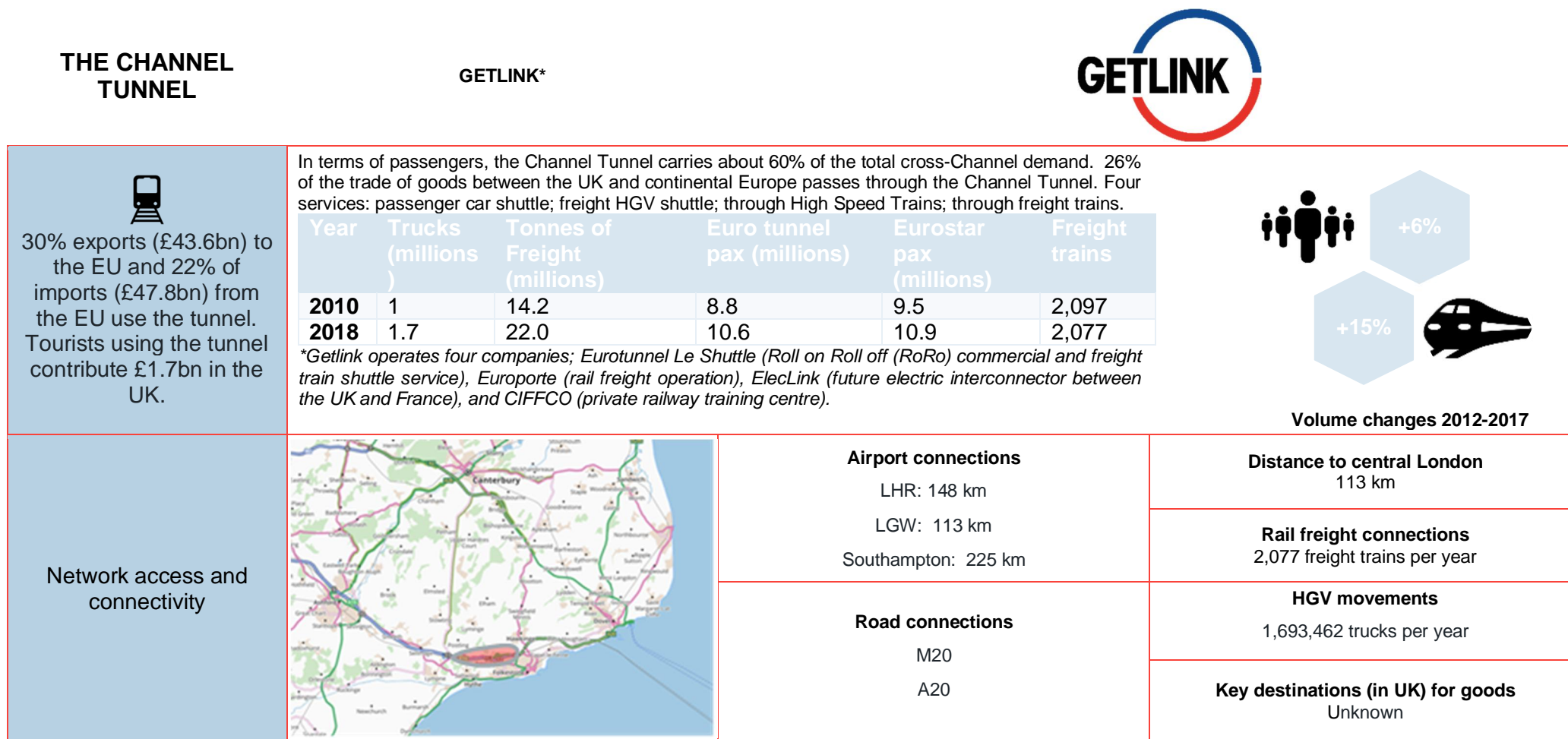
Recent investments <b>Substantial</b>	Provisional: Utilising shorter taxiway into a runway for domestic flights (previously refused by local council in 1979) – estimated at £500m. 5-year plan (2018-2023) of £1.11bn committed spending by Gatwick Leadership; expansion of airplane handling/docking facilities underway. A new second runway has been proposed, Gatwick state at this stage they are simply safeguarding the land for a run way rather than actively developing it at this stage.		
Relevant points	<b>Summary of growth to maximise potential / competitor challenges</b>		<b>Opportunity to develop the port further</b>
	<ul style="list-style-type: none"> <li>As Gatwick steadily increases market share of the UK passenger volumes, it is also able to increase its capacity</li> <li>Political opposition to airport expansion is significant and represents challenges to its growth potential</li> </ul>		<ul style="list-style-type: none"> <li>Opportunity to continue sustainability initiatives</li> <li>Efficiencies and internal improvements</li> </ul>
 <b>Strengths</b>	<ul style="list-style-type: none"> <li>Location</li> <li>Carbon neutral ground operations</li> <li>Rail access for passengers</li> </ul>	 <b>Opportunities</b>	<ul style="list-style-type: none"> <li>Improve facilities / greater efficiencies</li> <li>Passenger rail opportunities</li> <li>Increase market share</li> </ul>
 <b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Motorway connectivity</li> <li>Freight market</li> </ul>	 <b>Threats</b>	<ul style="list-style-type: none"> <li>Expansion permission</li> <li>Heathrow third runway</li> <li>Southampton competition</li> </ul>
Conclusion	Gatwick has strong operational credentials and shows a desire to grow through continued investment and improvement of efficiency. A lack of variety of destinations though for bellyhold puts Gatwick in a less competitive position for freight. Passenger traffic through Gatwick is likely to remain strong and there may be some uplift with potential disruption at Heathrow during any construction at the airport. Gatwick foresees freight becoming more prevalent at the airport and they will be developing a Freight Strategy which will look at opportunities for freight growth and the associated implications of this on the airport and surrounding network / environment.		<b>Importance</b>  Local: 7 Regional: 9 National: 8  <b>Total Score: 24/30</b>

Figure 5-14 – Southampton Airport dashboard



Relevant points	Summary of growth to maximise potential / competitor challenges		Opportunity to develop the airport further	
	<ul style="list-style-type: none"> <li>Southampton's local population growth may increase demand for flights</li> <li>The opportunity to increase flights beyond the EU to compete with Gatwick</li> <li>A diversification of airline carriers should be sought as a matter of priority</li> </ul>		<ul style="list-style-type: none"> <li>An increase in runway length to attract larger airplanes, not necessarily more planes, should bring cost benefits to passengers, which in turn could increase volumes through the airport</li> </ul>	
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Quick expansion possible</li> <li>Motorway connectivity</li> </ul>		<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Gatwick becoming oversized</li> <li>Connectivity to Southampton's cruise operations</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Limited airline routes</li> <li>Single runway</li> </ul>		<b>Threats</b>	<ul style="list-style-type: none"> <li>Few airlines</li> <li>Dependency on single operator - Flybe</li> </ul>
Conclusion	<p>As Southampton's airport operates few different airline carriers, it is vulnerable to revenue shock of its airlines collapsing. Plans for increasing runway length would hopefully bring larger (and more profitable) planes in, and allow for further improvements of infrastructure. The captive market of Southampton does not appear to need increased supporting infrastructure as the passenger throughput remains manageable by pre-existing rail and road networks.</p>			<p><b>Importance</b></p> <p>Local: 6</p> <p>Regional: 6</p> <p>National: 2</p> <p><b>Total Score: 14/30</b></p>

Figure 5-15 – Channel Tunnel dashboard



Recent investments Significant	In 2015 3 new 'Truck Shuttles' were planned in order to increase freight RoRo capacity by 20%. The completion of a new freight terminal will allow faster and more efficient truck flows and check in controls. The Channel Tunnel has given access to a train that travelled the 12,000km journey from the Shanghai to London, opening up new opportunities. UK France Electrical interconnector is due to be commissioned in Q4 2019 and begin full commercial operations from Q1 2020.		
Relevant points	Summary of growth to maximise potential / competitor challenges		Opportunity to develop the port further
	<ul style="list-style-type: none"> <li>Further infrastructure spend is limited to efficiency upgrades in the short term</li> <li>Passenger demand shifts are not expected to drop drastically as a result of the UK's relationship to the EU. Freight demand however, may be more significantly impacted by Brexit</li> </ul>		<ul style="list-style-type: none"> <li>The development of a rail service to link onto the Silk Road would increase demand for freight outside of the EU</li> <li>Medium and long-term plans of developing a road tunnel have been proposed and were included in the contract that Getlink won to construct the Channel tunnel. The road tunnel was included in the first contract with a commitment to build a second tunnel</li> </ul>
 Strengths	<ul style="list-style-type: none"> <li>Weather resilient: usually unaffected by severe weather</li> <li>Speed: Faster (including customs and checks) than ferry crossing</li> </ul>	 Opportunities	<ul style="list-style-type: none"> <li>Potential to attract cargo and increase visibility by use of the new Silk Road rail link</li> <li>Electricity interconnector plans shows desire to diversify</li> </ul>
 Weaknesses	<ul style="list-style-type: none"> <li>Highly vulnerable to border/political relations issues</li> <li>Competition from Dover</li> <li>Through freight services very low volume due to pricing, industrial relations, and migrant issues</li> </ul>	 Threats	<ul style="list-style-type: none"> <li>Continued risk of further issues regarding unsettled migrants attempting to reach UK from Calais</li> <li>Changes in concession agreement or financial restructuring are external dangers to Getlink</li> </ul>
Conclusion	The Channel Tunnel offers an effective competitive alternative to passenger RoRo freight from the UK to continental Europe, as witnessed by its rapid market share growth reaching 44% of total passenger movements of the South and Thames coast in 5 years. Short-term development plans are limited but further efficiencies could continue to grow the Channel Tunnel's market share. Sustainability credentials of rail will continue to benefit Getlink over their ferry rivals. Through rail freight has capacity to grow but no signs of this happening in the near future.		<b>Importance</b>  Local: 9 Regional: 10 National: 5  <b>Total Score: 24/30</b>

## 5.8 KEY ISSUES AND OPPORTUNITIES

### Planned infrastructure and access to gateways

- 5.8.1. The TfSE ports handle a significant proportion of the UK's total volume of freight and passenger movements. Although experiencing some decline in market share from 2010 to 2017, the region can improve its position provided there is continued investment at its gateways and accompanying networks.
- 5.8.2. The planned infrastructure upgrades covered in the dashboards demonstrates that most ports and airports in the TfSE area are keen to expand.
- 5.8.3. Road access is an important issue, with the three major ports being located in town / city centres and a strong dependence on the M25. These issues are considered in a later section.
- 5.8.4. Short sea shipping is an alternative way for TfSE ports to access other GB markets. Generally, if congestion begins to limit port growth, highway capacity is inadequate, and the network is operating inefficiently (i.e. with high levels of congestion and delay), then short sea shipping could be considered as an option to redistribute port traffic throughout the UK.
- 5.8.5. The opportunity for short sea shipping around the UK would require further study and is outside the scope of this study. However, as these factors are not currently being experienced, there appears to be no significant benefit of introducing short sea shipping.

### 5.8.6. UK Port Freight Traffic Forecasts

- 5.8.7. DfT created an in-house model to forecast UK freight traffic over the time period 2019-2050. The forecasts are provided on a national level and are for unconstrained growth (i.e. growth projections are not limited by available highway or infrastructure capacity), they do not include minor ports. DfT used a selection of indicators which contribute to their forecasts, including; population; GDP; gas, oil, and coal demand.
- 5.8.8. The forecasts largely assume a continuation of table 6-1. Container and vehicles (RoRo) are expected to grow whereas dry bulk, liquid bulk, and general cargo are set to decrease. Dry bulk is expected to gently improve in the long term. Liquid bulk LNG is expected to rise; however, the total liquid bulk sector is predicted to reduce as crude oil, oil products, and other liquid bulk are expected to decline. An element of the liquid bulk volumes are expected to transition to containerised tankers, thus feeding container growth. Overall levels are predicted to remain flat in the short term as the various bulk/cargo decline are balanced by container and RoRo growth. Total volumes will increase from 2022-2025.
- 5.8.9. The previous report by DfT in 2006 forecasted far greater volumes than were realised.

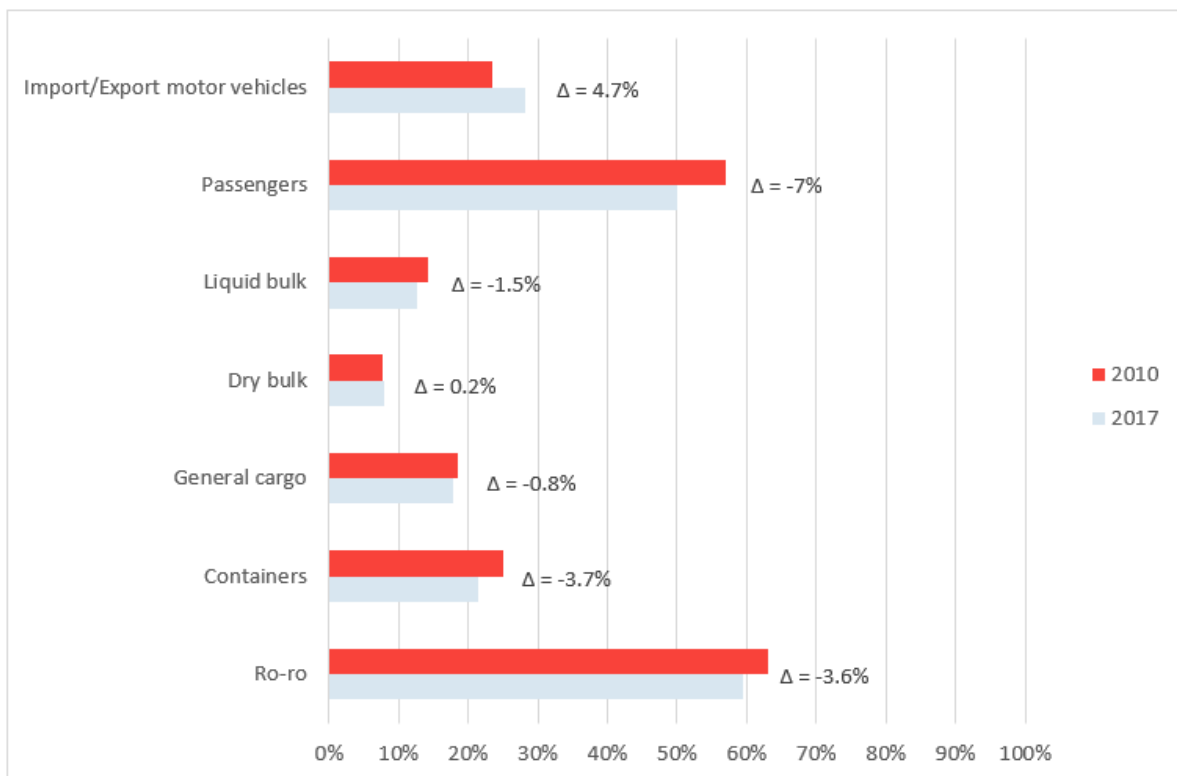


## 5.9 OPPORTUNITIES

### Ports

- 5.9.1. The growth areas identified by the DfT UK port freight traffic – 2019 forecasts are: LNG, containers, and import / export vehicles. Although other commodity groups are set to decline, there will still be demand for limited volumes, notably for uncontainerisable cargo or project cargo. This can include such items as wind turbines, rail carriages, large mechanical equipment.
- 5.9.2. The maintenance and operations of smaller ports (Portsmouth, Shoreham, Newhaven, Ramsgate) can act as overflow locations, providing resilience for the UK maritime industry. Alternatively, they can provide niche services and compliment the TfSE region's capabilities.
- 5.9.3. TfSE's group of port's market share of UK freight between 2010 and 2017 shows some structural change with the market moving northwards. This likely to be in part driven by land availability and cost and labour costs in the South East and in part due to better hinterland links from other ports.
- 5.9.4. Ensuring ports have adequate network road and rail links so as not to hinder their performance is critical. As an example, Southampton, as the busiest port by volumes in the TfSE region, should have transport links developed to allow for continued growth and remain a dominant player in the UK container market – especially as the container market is forecasted to grow.

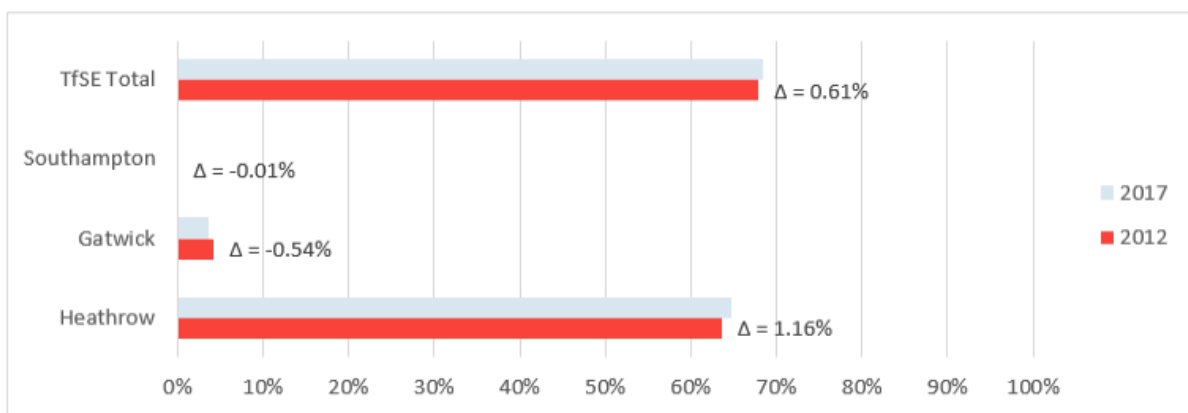
**Figure 5-16 - TfSE Share of Total UK Volumes (2017)**



## Airports

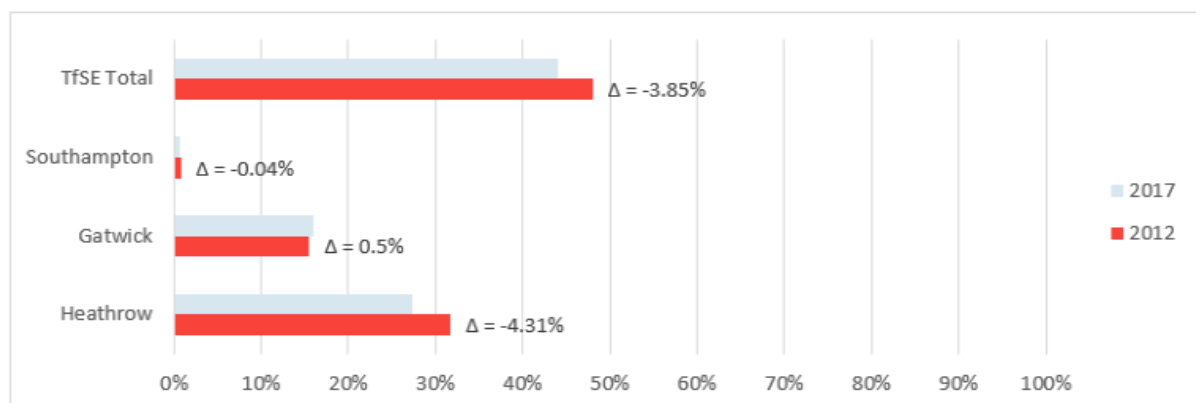
- 5.9.5. TfSE's three airports combined hold a dominant position in the UK. The planned expansion of airports in the region need to be accompanied by improvements to road and rail capacity to accommodate growth in passengers and freight.
- 5.9.6. Heathrow, given its location in a densely populated area, requires large network capital expenditure to meet the demands of future volume growth and has to deal with complex planning requirements. The impact of the development of both Heathrow and Gatwick need to be considered in terms of the impact on the wider road network and its potential additional traffic on already congested routes. This will be covered in their transport assessment and mitigation package as part of environmental statement.

**Figure 5-17 - TfSE Share of Total UK Airport Freight Volumes (2017)**



- 5.9.7. The TfSE airport's freight market share in the UK is has grown between 2012 and 2017. Passenger share over the same period has had a net gain in numbers, but has a decrease in market share. This is largely a consequence of Heathrow reaching their terminal's passenger capacity.

**Figure 5-18 - TfSE Share of Total UK Airport Passenger Volumes (2017)**



- 5.9.8. The international gateways are a key feature of the TfSE region, representing an economic opportunity bringing in trade and creating jobs. They are creating demand for the transport infrastructure that supports them, which will increase as they grow. This is considered further in Chapter 5.

## **6 LOGISTICS AND LONDON**

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### **6.1 FREIGHT TO LONDON**

- 6.1.1. The links between the TfSE London are very strong, particularly for the movement of goods. London is the biggest consumer and commercial market in the UK and is a key destination for many imported goods as well as goods produced elsewhere in the UK. However, goods will rarely move directly from a port, airport, farm, or factory to a customer in London. Generally, some sort of break point such as a warehouse or distribution centre is used en route.
- 6.1.2. While some distribution centres are located around the southern half of the M25, and there are concentrations in other parts of the area (Solent, North Kent, Crawley), there are much greater concentrations to the North of London and into the Midlands, meaning that only a proportion of freight destined for London from TfSE is carried directly. An important exception is the movement of aggregates from Cliffe, and Grain into London.
- 6.1.3. Analysis of the Containing Survey of Road Goods Transport (CSRGT) suggests that the TfSE area exported 9 million Tonnes of goods to London on HGVs and imported 7 million Tonnes. This would equate, broadly, to 2,400 lorries per day. Of this approximately 30% is destined for outer East or West London, 13% to South London and 21% to Inner London.

### **6.2 IMPACT OF LONDON FREIGHT POLICIES**

- 6.2.1. For TfSE London freight policies will have an impact on TfSE specifically trends in the interventions to deal with congestion, air quality and the creation of the Mayors “liveable” cities may have impacts on the South East.
- 6.2.2. Policies developed in London may have impacts on TfSE and need to be considered as part of the overall Transport Strategy. The following section reviews these policy impacts as they relate to freight.

#### **ROAD USER CHARGING**

- 6.2.3. TfL is investigating proposals for the next generation of road user charging systems. These could replace schemes such as the Congestion Charge, Low Emission Zone and Ultra Low Emission Zone. More sophisticated road user charging or workplace parking levy schemes could be used to contribute to achieving mode shift, casualty reduction and environmental objectives, and to help reduce congestion on the road network and support efficient traffic movement. In doing so, TfL will consider the appropriate technology for any future schemes, and the potential for a future scheme that reflects distance, time, emissions, road safety and other factors in an integrated way.

- 6.2.4. Whilst road user charging may result in reduced commuter volumes on the arterial highway corridors linking London and the TfSE area, for freight it may increase the need for smaller consolidation centres on the outskirts of London, maybe within TfSE areas and increase the movement of smaller, electric LGVs from these hubs.

## FREIGHT AND SERVICING ACTION PLAN

- 6.2.5. TfL's Freight and Servicing action plan, published in 2019, highlights five key actions TfL wish to implement to mitigate the impact of freight and serving within London. These have implications on TfSE. Table 6-1 highlights the actions identified in the plan and how they may impact TfSE. It could also be that there are some opportunities to identify urban freight management best practice from the TfL approach.



**Table 6-1 – TfL freight actions and their impacts on TfSE**

Action	Potential impact on TfSE
Working with boroughs to better coordinate the control of freight movements (including reviewing the London Lorry Control Scheme)	Controlling freight may mean that it pushes freight out of London at peak times, increasing peak time pressures in neighbouring areas.
Supporting increased use of water and rail by protecting and reactivating wharves and working with Network Rail to take advantage of opportunities to grow rail freight	This could create the right environment to move freight onto rail if capacity is increased and the economic case make rail freight more viable. This could also mean increasing rail freight on through routes which avoid going through central London but may conflict with TfSE passenger services, for example the North Downs Line.
Reducing emissions caused by lorry and van movements by launching the London Ultra Low Emission Zone	This could have impact the types of vehicles going to and from the capital, and have the impact on moving activity into the TfSE region using urban consolidation.
HGV Safety Permit Scheme (incorporating DVS)	This will have a beneficial impact on the TfSE area as very few hauliers operate only in London.
Consolidation centres (delivery, servicing and construction)	Potential to increase activity within TfSE in terms of warehousing and transport movements, this could increase congestion in areas close to the capital. But consolidation centres would also create employment and opportunities for businesses.

- 6.2.6. With increasing demand and constrained capacity on the London rail network TfL is seeking to maximise the capacity that is available for both passengers and freight. Currently, parts of the London Overground network are shared with freight trains. The different acceleration and speeds of passenger and freight trains reduces capacity for both services. More efficient use of the network for both passengers and freight could be made by scheduling freight services (as well as engineering and other non-passenger trains) to avoid passenger peaks, running them at quieter times.
- 6.2.7. With increasing proposed house building in key commuter areas within TfSE is likely to put more pressure on rail capacity, making it less an option for freight.
- 6.2.8. However, there is also a recognition that much rail freight traffic travelling from one side of London to the other, (for example, rail freight from the Eurotunnel at Folkestone and bound for the West

Midlands) is currently routed through central London, via the West London Line or North London Line.

- 6.2.9. TfL plans to work to encourage the DfT and Network Rail to upgrade rail freight routes outside London so that non- London rail freight can be taken around London, thereby freeing up rail paths through the capital for additional passenger services and freight trains that serve London.
- 6.2.10. An increase in freight use of the orbital routes of the South East to free up capacity in Inner London would result in a reduction in track capacity on the rail network of the South East. However, upgrading of railway lines to enable more freight to be transported by rail would reduce the level of freight highway demand on the road network reducing congestion and having a positive environmental impact.

## 7 CORRIDORS AND ACCESS TO INTERNATIONAL GATEWAYS

### 7.1 WHAT ARE THE STRATEGIC FREIGHT CORRIDORS?

7.1.1. There are 22 corridors identified in the Economic Connectivity Review (ECR) and are listed in the Table 7-1 with five measures of importance for freight:

- The gateways served by the corridor or which are strongly dependent on the corridor;
- Average annual daily flow of HGVs (from DfT Road Traffic Statistics 2017/8);
- Percentage of traffic which is HGVs (from DfT Road Traffic Statistics 2017/8);
- The estimated cost of congestion for HGVs on the corridor (from the ECR); and
- The average number of freight trains per day (from Network Rail).

7.1.2. The corridors are presented in the order ranked in the ECR and then these highlighted in red are the “top 10” for each measure.

**Table 7-1 - Strategic corridors**

CORRIDOR	ECR Rank	Main Gateways Served	AADF HGV	% HGV	Annual Cost of Delay for HGVs	Freight Trains / Direction / Day
M25	1	All, Heathrow	14,287	7%	33,531,936	0
M4/Great Western Mainline	2		10,155	8%	32,235,356	13
A27-M27/West Coastway Line	3	Portsmouth, Southampton, Shoreham, Newhaven	5,788	5%	40,184,984	1
M3/South Western Mainline	4	Southampton, Portsmouth	11,665	9%	13,493,827	24
A23-M23/Brighton Mainline	5	Shoreham, Newhaven, Gatwick	5,590	6%	5,219,611	2
A34/Cross-country Manchester-Bournemouth	6	Southampton, Portsmouth	6,358	12%	3,192,218	24
A2-M2/Chatham Mainline	7	Dover, Medway, London	5,054	8%	6,059,502	8
A3/Portsmouth Direct Line	8	Portsmouth	2,303	4%	7,933,440	1
A2/Chatham-Ramsgate Mainline	9	Dover, Ramsgate	5,086	9%	5,074,896	1
A33/Cross-country Manchester-Bournemouth	10		1,079	6%	7,902,155	0
A229/Medway Valley Line	11	Medway	2,458	4%	3,084,756	1
A20-M20/HS1	12	Dover, Eurotunnel	11,387	14%	7,372,070	5
A259/East Coastway Line	13	Newhaven	743	3%	1,274,944	1
A322-A329/North Downs Line	14		4,061	5%	1,470,338	1
Redhill-Tonbridge Line	15		-	0%	-	0
A22/Oxted Line	16		914	4%	6,444,137	0
A25/North Downs Line	17		439	4%	2,741,713	1
A299/Chatham-Ramsgate Mainline	18	Ramsgate	1,896	4%	1,506,144	1
A264/Arun Valley Line	19		1,696	4%	307,618	0
A21/Hastings Line	20		1,196	4%	3,058,500	1
A303/West of England Mainline	21		2,239	5%	1,003,535	10
Herne Bay/Whitstable-Canterbury	22		-	0%	200,598	0



- 7.1.3. Of these the following corridors have an impact on the international gateways in the region, serve important clusters of businesses, or carry high volumes of freight, and can be considered as key freight corridors:

**Table 7-2 – Key freight corridors**

CORRIDOR	ECR Rank	Road Freight Significance	Rail Freight Significance
M25	1	Vital link between Dover Straits and Medway and other regions. Also provides access to Southampton and Portsmouth	N/A
M4/Great Western Mainline	2	Heavy volumes to and from London	Main corridor for stone trains from Mendips to London. Also used between Reading and Didcot for container trains from Southampton
A27-M27/West Coastway Line	3	Distributor corridor for Southampton and Portsmouth. High cost of congestion.	N/A
M3/South Western Mainline	4	Key route from Southampton to London. Heavy HGV volumes.	SWML is used by all trains to Southampton.
A23-M23/Brighton Mainline	5	Access to Gatwick and Shoreham.	N/A
A34/Cross-country Manchester-Bournemouth	6	Key route from Southampton and Portsmouth to Midlands / NW.	Continuation of SWML service northwards from Basingstoke
A2-M2/Chatham Mainline	7	Access to Medway and PLA wharves	
A3/Portsmouth Direct Line	8	Link from Portsmouth to London	N/A
A2/Chatham-Ramsgate Mainline	9	Secondary route from Dover.	N/A
A20-M20/HS1	12	Key route to Dover Strait. Very high HGV volumes	Used for Channel Tunnel services

- 7.1.4. There is overlap of through rail services across these corridors, and effectively there are three key rail freight corridors in the TfSE:

- Southampton to Didcot via Basingstoke and Reading;
- Great Western Main Line between Reading and London; and
- Channel Tunnel routes from London including HS1.

## 7.2 ROAD CORRIDORS

- 7.2.1. This section looks at freight related issues and opportunities on the key road and rail freight corridors. Studies feeding in to the Transport Strategy will examine general traffic conditions and investment needs in detail. This will include consideration of congestion issues, and therefore these are not a main focus in this section. Instead the section looks at evidence of freight related issues including:

- Key freight gateways and hubs served;
- Access to gateways and hubs;
- Known risks of major disruption;
- Alternative routes; and
- Lorry parking issues.

- 7.2.2. Strategic freight issues which are not corridor specific are considered in Chapter 8.

## M25

- 7.2.3. The southern section of the M25 forms a key link between the TfSE area and most other markets in the UK. It is also the preferred route for many East – West journeys across the region in the absence of any other trunk routes – for example from Kent to Hampshire.
- 7.2.4. The M25 provides access to Heathrow and Gatwick airports, and is part of the route linking Channel ports and Medway ports with Sussex, Hampshire, and Berkshire, the West of England and Wales and, via the Dartford Crossing, with all other GB markets. It is also a key link between Felixstowe and the TfSE area.
- 7.2.5. Congestion issues are well known, and have been addressed over time by widening and the recent conversion to smart motorway for most of the section. Specific freight issues include:
- Relatively frequent major incidents requiring closure of the motorway;
  - Night time roadworks;
  - Lack of suitable alternative routes for HGVs (resulting in impacts on communities and lengthy delays for hauliers); and
  - Lack of locations for lorry parking – the Kent section of the M25 is identified as a hot spot with severe truck parking shortages in the 2017 AECOM DfT Lorry Parking Survey. Lack of capacity for trucks at Cobham Motorway Service Area (MSA) is identified as an issue.
- 7.2.6. A particular issue for the M25 is the capacity and vulnerability of the Dartford crossing. The 2009 Highways England Dartford Crossing report found that *“In terms of HGV trips, over 30% are either to or from the port of Dover and are travelling particularly long distances, while around half have origins and destinations within the East and South East of England (excluding Dover). The remaining 20% are generally more local HGV trips, taking place over short distances to either side of the Crossing. These figures indicate the importance of the Dartford Crossing in relation to its current role in catering for strategic trips of national and European importance.”*
- 7.2.7. While general congestion and lack of capacity has an impact on the key trade HGV movements crossing the Thames, a more significant issue is the vulnerability of the crossing, with long closures forcing HGVs to make much longer journeys via the congested M25 southern sector.
- 7.2.8. Issues at the Dartford Crossing will be addressed in the long term by the proposed Lower Thames Crossing by providing an alternative route.
- 7.2.9. The HE route strategy for London Orbital and M23 to Gatwick cites the following challenges and opportunities:
- Improving conditions on the M25 (tackling traffic volume, congestion or traffic queuing and delays caused by accidents or roads closed);
  - Improving safety, particularly on the M25 junctions 16, 21a, 23 and 25 and junctions 5-4b on the M4;
  - Addressing the gap in service stations/safe rest facilities on junctions 12-21 on the M25. It is unclear how this relates to HGV facilities; and
  - A new Lower Thames Crossing.

## M4

- 7.2.10. In terms of the TfSE area, the main role of the M4 is to provide a route from Kent and Sussex to Wales and the West. The M4 is the key corridor serving the Reading area, which includes a number of distribution centres and industrial areas. The M4 is also a key route serving Heathrow and the extensive air freight related distribution centres around Heathrow.
- 7.2.11. The M4 corridor is not identified as a specific lorry parking issue, and there are generally alternative routes available in the case of disruption, for example via the A4.

## A27 – M27

- 7.2.12. While this corridor doesn't carry very high volumes of HGVs, it is an important link between Hampshire and the Solent Ports and Sussex, particularly Brighton and Crawley. It serves the ports of Southampton, Portsmouth, and Shoreham and Southampton and Brighton airports. The route in the Solent area in particular is an important distributor road for Portsmouth and Southampton, for example from Portsmouth to the M3 /A34 or from Southampton to the A3.
- 7.2.13. The link scored very highly in the Economic Connectivity Review for the cost of congestion for HGVs, which is largely due to the substandard sections of the route around Arundel and Worthing and regular congestion on the Chichester bypass.
- 7.2.14. The HE route strategy for South Coast Central identifies the following challenges and opportunities:
- The A27 and A23 are two of the worst ranked A roads in the country for safety issues, largely due to poor junction visibility and road surface alignment;
  - Congestion on multiple routes means that diversions are often ineffective and minor incidents can quickly escalate into major disruptions.

## M3

- 7.2.15. The M3 is an important strategic link connecting the Ports of Southampton and Portsmouth and industry in the Solent area with the rest of the UK, including the Midlands and Northwards via the A34. It carries high volumes of HGVs which suffer from congestion impacts making this the route with the second highest cost of HGV congestion in the region.
- 7.2.16. As well as general congestion, the Solent area and the M3 southern section were highlighted in the Lorry Parking Study as being areas with inadequate parking capacity. Another issue for HGV traffic is the lack of suitable diversionary routes.
- 7.2.17. The HE route strategy for M25 to Solent (A3 and M3) identifies the following challenges and opportunities for this corridor and the A3:
- The proximity of the M3 to Ports within Southampton means that there are significant congestion issues as local traffic mixes with port traffic;
  - Additional traffic joins the A3 from the A31 Hog's Back, which means that this section sees safety issues and lacks network capacity;
  - Addressing the lack of information available on the A3 and M3 between junctions 4a-9;
  - There is significant congestion on the M3 from Farnborough to the M25;

- There is opportunity to communicate with rail providers to increase the provision of goods transport transportation to the ports; and
- To the North of Guildford there is an opportunity to enhance truck layby capacity by introducing north-facing slips at the A3/A247, which should relieve local pressure on roads around Guildford.

### **A23-M23**

- 7.2.18. The A26 and A27 and then the A23 / M23 provide the main routes linking Shoreham and Newhaven to the rest of the country, but most traffic from these ports is likely to be short distance journeys. More significantly, the route links the city of Brighton and Hove to London and also serves Crawley, which includes one of the largest trading estates in the UK at Manor Royal.
- 7.2.19. The LEP has identified improvements to the A23 as being important to improve access to the South Coast ports. The A23 has recently been improved, although, again, there is a lack of suitable alternative routes. The M23 is currently being upgraded to a Smart Motorway – with the upgrade works illustrating the impact of closures on surrounding communities.

### **A34**

- 7.2.20. The A34 is a vital link between the ports of Southampton and Portsmouth and the Solent area and the Midlands. It carries the second highest percentage of HGV traffic in the region.
- 7.2.21. The Highways England route strategy identifies the section around Winchester and on to the M27 as a particular congestion pinch point.
- 7.2.22. The Lorry Parking Study looked particularly at lorry parking around ports. For the A34 it reported: *“The A34 leading north from the ports of Southampton and Portsmouth had high levels of offsite parking and a high number of serious and critically utilised lorry parks – although a lot of this is outside the ‘50km’ defined distance from the ports, it is the logical route leading north from the ports.”*
- 7.2.23. The A34 corridor suffers particularly from a lack of diversionary or alternative routes for HGVs.
- 7.2.24. The HE route strategy for Solent to Midlands includes the following challenges and opportunities:
- Improving safety, particularly at junction 8 on the M27, the M271/M27 interchange, and on the M3 towards Winchester;
  - The high proportion of goods travelling from the North to the South accelerates the deterioration of the road surface along the route;
  - Addressing peak-hour congestion, particularly junctions 4-11 on the M27;
  - Along the A34 congestion and delays are magnified by main junctions lying near each other; and
  - There are significant development opportunities, particularly at the Southern end of the route, where there are major international gateways.

### **A2-M2 AND A2**

- 7.2.25. While most Dover bound HGV traffic is encouraged to use the M20, the M2 is still heavily used by HGV destined for the continent. However the M2 / A2 is more strategically important in providing access to Thamesport, the Medway ports, and industry and wharves along the North Kent coast and

the Medway area which includes several supermarket distribution centres and a concentration of paper mills.

- 7.2.26. Generally, the M2 and A2 have lower levels of congestion than some other routes in the region, and alternative HGV routes are available.
- 7.2.27. There is a serious shortage of suitable lorry parking capacity in Kent – beyond the issue of Operation Stack and Brexit. This affects the A2 and M20 corridors. The Lorry Parking Study found that between February and April 2016 Kent Police fined or ‘moved-on’ 494 trucks that were illegally parked on hard-shoulders or slip roads of the M20, A20 and A2. The RHA has been calling for improved enforcement against illegal parking on motorways across the county, reflecting the concern of its members. Stakeholders suggested that additional parking capacity is required in the following areas or at existing facilities within Kent:
- Gravesend/Cobham;
  - Lydden;
  - Northeast Maidstone;
  - Sevenoaks (M25/M26);
  - Ashford; and
  - Stop 24 Folkestone.
- 7.2.28. The Kent Corridor to M25 (M2 and M20) HE Route Strategy identifies the following challenges and opportunities:
- Providing a reliable alternative freight route between the M25 and Dover on the A2/M2;
  - Developing a replacement for Operation ‘Stack’, which is implemented when there is disruption at the Port of Dover;
  - Accommodating significant future growth;
  - Tackling congestion, particularly between junctions 2 and 3 on the M2 and around the Port of Dover;
  - Improving safety, particularly on junctions 5 and 7 on the M2;
  - Make better use of rail and water to transport goods to and from ports and reduce road traffic volume; and
  - A proposed lorry park and the formalisation of Dover TAP to reduce port-related congestion issues.

### **A3**

- 7.2.29. The A3 is particularly important as the link between Portsmouth and London. It also provides a bypass to Guildford, the location of a major science park and some manufacturing businesses.
- 7.2.30. A particular pinchpoint is the Guildford bypass section which suffers from congestion and is narrow and tightly curved.

### **A20-M20**

- 7.2.31. The M20 is a strategically important international link for the UK, providing access to Dover and the Channel Tunnel. As such it carries the third highest volume of HGVs in the region (after the M25 and M3) and the highest percentage of HGVs.







- 7.3.2. The maps illustrate the relatively good connectivity from Southampton to the main distribution centres around the Midlands, reachable within 3.5 hours. Similarly, lorries from both Dover and Brighton can reach the Midlands within 4 hours, allowing a return journey to be made within a shift.
- 7.3.3. South London can be reached within 2 hours from Brighton, West London within 2 hour from Southampton, and East London within 2 hours of Dover. Each of these could allow up to 2 round trips per day.
- 7.3.4. However, the constraints of the region are illustrated in that it takes nearly 4 hours for an HGV to drive from Dover to Southampton, and this assumes free flow traffic conditions on the M25.

## 7.4 PROPOSED LOWER THAMES CROSSING

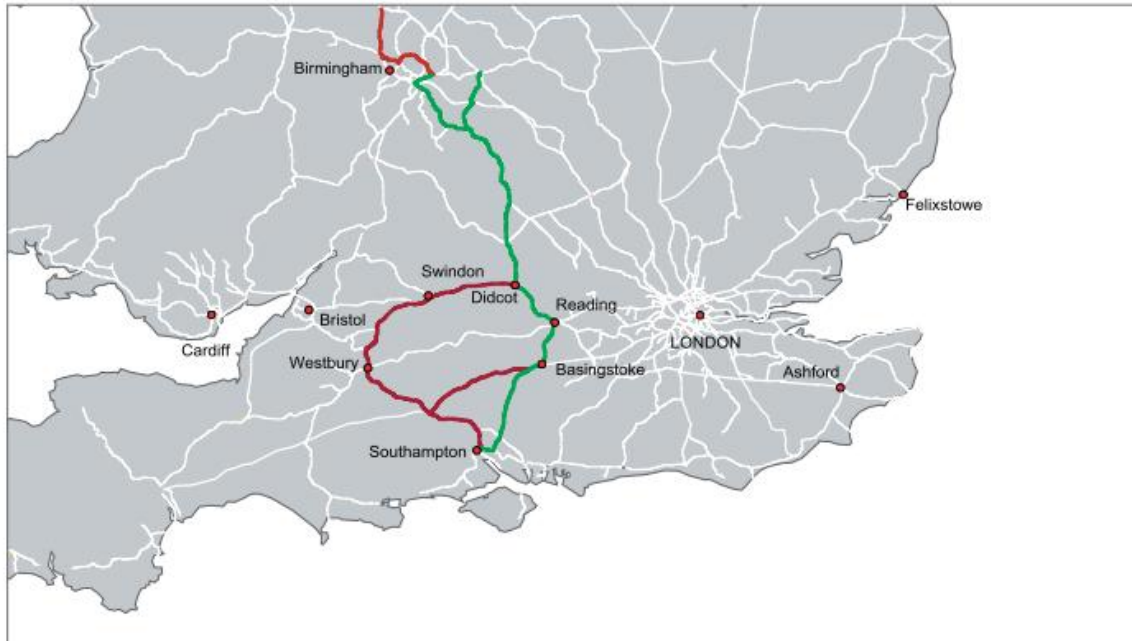
- 7.4.1. The Dartford Crossing is currently a key strategic bottleneck on the highway network. Freight traffic, travelling from Dover and heading North of London must use this route, or travel a substantially longer distance around the west of the city along the M25. Currently the crossing has capacity for four lanes of traffic in each direction and is used by approximately 130,000 vehicles daily. The new Lower Thames crossing was confirmed in 2017. It will consist of a tunnel crossing the River Thames east of Gravesend and Tilbury. It will be connected north of the river to the M25, and south of the river will connect directly to the A2. It is expected that the crossing will be opened in 2027.
- 7.4.2. The crossing will expand the capacity of the current Thames crossing at Dartford by over 90%. Traffic which is moving from Dover up the A2 will be able to cross the river Thames before reaching the M25, which will take significant pressure off junction 2 of the M25. Freight traffic coming from Dover will consequently be encouraged to take the A2, as opposed to the M20. This will lead to a significant increase in the flow of traffic moving along the A2, which is currently not built to dual carriageway standard at its eastern end, and so in period of peak demand may be subject to severe congestion. It may also worsen congestion at the Brenley Corner junction and increase traffic volumes on roads linking the M20/M2 corridors such as the A229, A249 and the A2.
- 7.4.3. Opening of the crossing will significantly improve resilience of the road network serving the channel port gateways.

## 7.5 RAIL CORRIDORS

### SOUTHAMPTON TO DIDCOT VIA BASINGSTOKE AND READING

- 7.5.1. This is by far the most important rail freight corridor in the region, handling up to 20 container trains per day and around 4 automotive export trains per day, all destined for the Port of Southampton. Reflecting its importance for these traffics, the main route is cleared to W10 loading gauge, which means that 9'6" high containers can be carried on standard flat wagons. Diversionary routes have been cleared to the larger W12 gauge, and Network Rail has placed a high priority on clearing the main route to W12. This might allow new types of traffic to be carried including road trailers on low platform wagons.
- 7.5.2. The core route has been upgraded recently to accommodate 750-metre-long trains, an increase from 600 metres. Longer trains allows more freight to be carried within existing pathways. However, the important diversionary routes from Southampton have not been cleared for these longer trains.

**Figure 7-4 - Baseline train length position for Southampton to the West Midlands and the West Coast Main Line (Network Rail Freight Network Study, 2017).**



**Key: Green = cleared for 775m trains. Red = Scheduled for clearance for 775m trains (diversionary route).**

- 7.5.3. Capacity on this corridor is under pressure due to increasing demand for passenger services as well as growth of rail freight services. Network Rail has carried some capacity enhancements, but future pinch points on this corridor include Basingstoke, Reading to Didcot and Oxford.

### **GREAT WESTERN MAIN LINE BETWEEN READING AND LONDON**

- 7.5.4. Stone trains from the Mendips join the GWML at Reading and then continue into London, while container trains from Southampton use the GWML between Reading and Didcot. Some issue around this “crossroads” for freight were addressed by remodelling at Oxford, but there is continued pressure on the GWML for more passenger capacity.

### **CHANNEL TUNNEL ROUTES FROM LONDON INCLUDING HS1**

- 7.5.5. Currently freight links between Kent and the rest of the UK are extremely constrained as there are no cross-Thames links available for freight between the West London line and HS1. HS1 does provide a cross Thames opportunity, but very limited freight capacity is available, and freight operation is limited to services with high speeds and acceleration or a small number of services at night. In addition, capacity between Kent and west of London is limited by the lack of a direct route.
- 7.5.6. Good freight links between London and beyond and the Channel Tunnel could remove considerable numbers of lorry movements, particularly if in conjunction with strategic rail freight interchange facilities close to the M25. The logistics business feels constrained from making greater use of the rail network through a perception that there is insufficient capacity on the rail network to be able to provide a consistent 365 day a year freight operation and provision of a greater freight capacity would prove that there is a genuine commitment to expand the freight network that would lead to opportunities for business growth.

- 7.5.7. In the longer term an additional crossing to the east of London would be an aspiration, primarily for freight but also allowing increased capacity to St Pancras and north of the Thames, between Kent and north of the Thames but due to lack of line capacity for freight within the north London area it would only be feasible in conjunction with creation of new capacity for freight north and east of London.
- 7.5.8. A major new flow of rail freight is moving a proportion of Heathrow's aviation fuel from the Isle of Grain, and intermodal consumer goods flows are in prospect to/from the Channel Tunnel. Automotive traffic from Sheerness and steel from Thamesport are also likely to feature in the future.
- 7.5.9. A particular issue is velocity - average freight train speeds are far too low in many parts of the UK and this is particularly true in the South East, where trains capable of running at 60 or 75 mph trundle along behind stopping passenger services, hindered by the continued application of the 'two thirds rule', i.e. freight trains are restricted to two thirds of line speed even if the wagons are capable of running significantly faster. This not only delays freight trains and makes rail less competitive with road, but consumes valuable main line capacity. This 'rule' and the practice of pathing freights behind stopping passenger services should be eliminated to improve overall velocity and particularly that of freight. Line speed running and standard paths behind fast or semi fast passenger trains, but in front of stoppers, should be the rule.

## 7.6 CONCLUSIONS

- 7.6.1. The TfSE area includes a number of nationally important freight corridors, mainly those serving the Gateways but also including the M25. While East – West journeys are undoubtedly constrained, the M27 / A27 acts as a link along the coastal corridor.
- 7.6.2. Like most corridors in the TfSE area, the road freight corridors suffer from congestion, and the rail freight corridors have limited capacity for growth. Perhaps more important is a lack of resilience for freight routes, particularly a lack of alternative / diversionary road and rail routes for several critical freight links, notably the A34 and its parallel rail route, many sections of the M25, and the Dartford Crossing.

## 8 STAKEHOLDER VIEWS

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### 8.1 AIMS

- 8.1.1. The aim of this section of the report is to outline some of the key themes of the stakeholder discussions that have been undertaken as part of this study and which have influenced much of this report. The following is a summary of the findings, Appendix A provides a more detailed summary, and Appendix B provides the results of the questionnaire survey in detail.
- 8.1.2. Whilst analysis of logistics and freight data, and modelling of potential future logistics changes can provide insights into how the industry is changing, the views of key stakeholders are equally important, to understand what drives their business imperatives.

The Stakeholder plan contained 3 key stages:

- Identification and agreement of key stakeholders;
- Stakeholder questionnaire survey; and
- Interviews with agreed stakeholders.

### 8.2 METHOD

#### SURVEY

- 8.2.1. In order to expand the scale of stakeholder feedback an online survey was developed using a simple Survey Monkey form. 135 responses were received. The key results of the survey are included in this section and full survey results can be found in Appendix B.

Over 40% of the respondents held senior positions within the organisation (owner, MD, CEO) which suggests answers may show a more strategy and longer-term perspective. Nearly 72% of the respondents were based in the TfSE areas, with over 70% using the TfSE roads every day. Respondents represented a range of different sized organisation. Not surprisingly, the most commonly used mode was road, with only 18% using rail as part of the freight movements. Give the significance of ports, just over 30% used water as a means of moving goods.



## STAKEHOLDER INTERVIEWS

- 8.2.2. A number of 1-2-1s were undertaken across a wide range of different types of stakeholders. These were a mix of face to face meetings, telephone interviews and email exchanges. File notes have been created. (However, to retain confidentiality stakeholder opinions have been collected into themes rather attributing comments to individuals or companies.) Table 8-1 shows the companies interviewed.

**Table 8-1 - Companies interviewed**

Company	
C BUTT LTD	Heathrow
CILT	Meachers
Freight on Rail	Nestle
Freight Transport Association (1 Freight Councils and 121 with FTA Policy Lead)	Wincanton
John Lewis	Highways England
Network Rail	ABP
Road Haulage Association Ltd	Wynns
Rail Freight Group	PLA
Road Haulage Association Ltd	Magway
Transport for London	Debenhams
Sainsburys	Tarmac
BMW/Mini	

## 8.3 SUMMARY OF VIEWS

- 8.3.1. The following provides a summary of stakeholder key views, taken from both the survey and the interviews. A more detailed review is found in Appendix A.

### FUTURE OF LOGISTICS

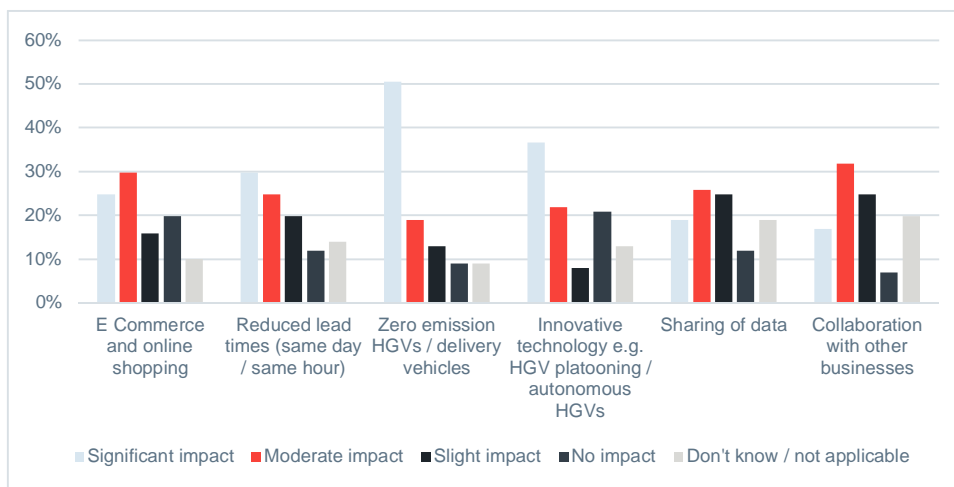
- 8.3.2. In discussions stakeholders found it difficult to predict the longer-term future of the freight and logistics industry, however some of the trends currently impacting the industry provide insights into how the industry may change. Trends in online retail and the change this has had on traditional retail outlets and urban centres has impacted freight and logistics ranging from land use needs, response times and vehicle types. Ongoing changes in customer behaviours (both business to business and business to consumer) will have a continual impact on freight and logistics sector which needs to adapt to changing consumer needs.
- 8.3.3. In the survey there was a clear indication that stakeholders felt that technology has a significant role to play in how the industry responds to emerging issues. In discussions with stakeholders however, some technology is seen as niche, such as platooning, where a number of HGVs are linked virtually to gain aerodynamic benefits and therefore fuel savings. The interviews showed that some logistics operators are a little cynical about how much some technology will impact wider parts of the logistics



industry. That said, the discussions noted that most stakeholders felt that data (collecting it, their changing use of it, analysing it and sharing it) is key to the evolution of the freight industry. In the survey however, sharing of data was not seen as having the biggest impact on operations, but rather, changes to zero emission vehicles and reduced lead-times could have the biggest impact.

- 8.3.4. Both interviews and the survey suggested that stakeholders see autonomous features within vehicles will have an impact, especially to support driver safety and efficiency and will impact business operations, however discussions suggested that the move to a completely “driverless” HGV was taken with a degree of disbelief.

**Figure 8-1 - What impact do you think the following trends will have on your business before 2050?**



## KEY CHALLENGES

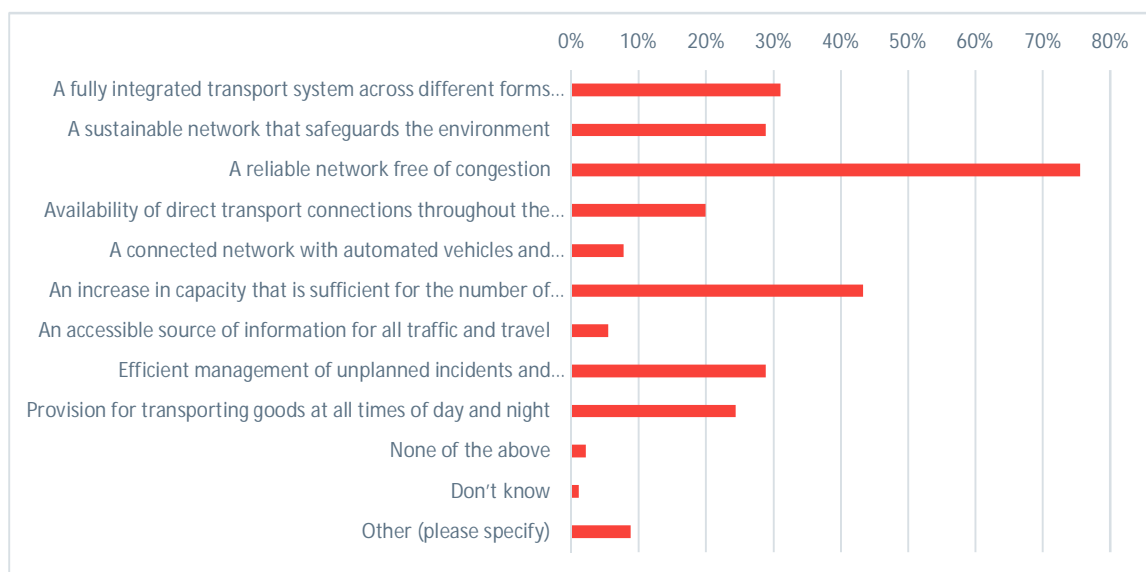
- 8.3.5. In discussions with stakeholders there was a recognition of the key challenges for the TfSE area including it being over populated, surrounded by water on three sides (Thames to the north and the sea to the south and east) with a number of sensitive protected areas which impacts how infrastructure can be developed. For logistics operators this represents a challenge, with limited development land where space for logistics operations is in competition with other demands. Despite these challenges, in the survey, 52% of respondents felt that the transport links in the TfSE area met the needs of their business with regards to moving goods fairly well or very well.
- 8.3.6. A key issue facing the industry captured during discussions which is impacting its potential, is the skills shortage being felt in many areas of the industry, not just drivers.
- 8.3.7. Land use planning has been a reoccurring theme in discussions with stakeholders, and the term “freight blindness” was used a number of times to describe how stakeholders feel about the planning process (at an infrastructure level as well as land use planning). Consistently stakeholders felt that there was not sufficient understanding of the needs of such a critical industry as logistics. The need for logistics in all developments, such as the role of logistics in construction as well as the delivery and servicing of new sites once built is not, in the opinion of a number of stakeholders is not sufficient. Links were also made to the provision of lorry parking within the context of land use.

- 8.3.8. The interviews revealed that to enhance logistics efficiency and therefore potentially attract logistics activity, the reduction in regulation is seen to be a key enabler. Removal of restrictions could allow for moving goods at more appropriate times. Policy development and resulting regulation needs to consider the impact on logistics or run the risk of “unintended consequences”, for example, incentivising cycling has the potential of increasing conflicts between HGV and vulnerable road users.
- 8.3.9. When discussing how to promote behaviour change, stakeholders felt that incentives (rather than punitive measures) could be used to change the way we work for example encourage consolidation through tax incentives.

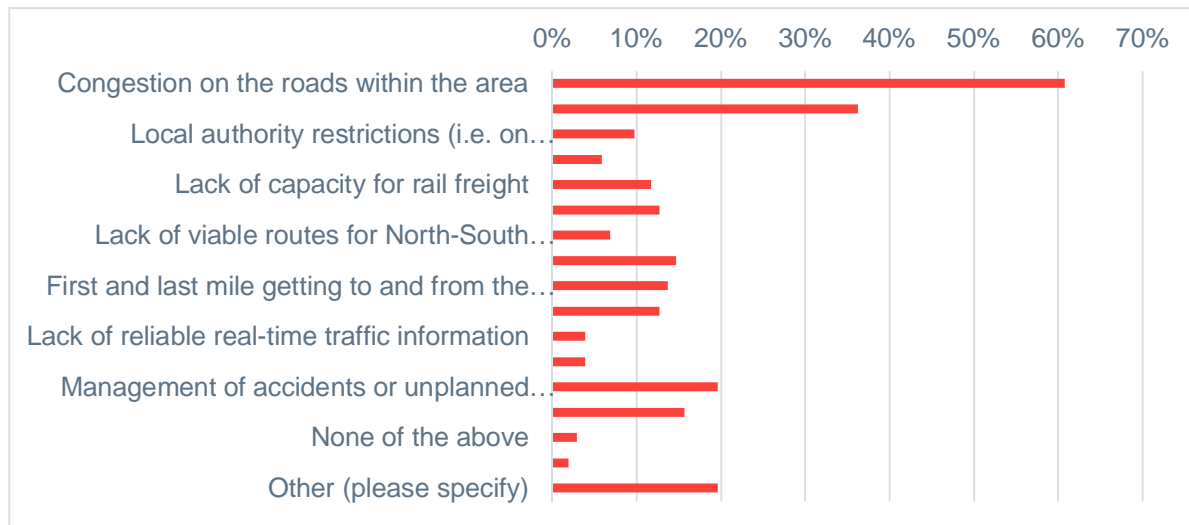
## CONCERNS AND PRIORITIES

- 8.3.10. The survey and interviews identified a number of specific road network pinch points, which have been included in the corridor analysis. The priorities for freight is the need for reliability of goods movements which can be achieved through the creation of a resilient network. This is more important than speed per se. Figure 8-2 shows the priorities identified in the survey for operations, and this mirrors more detailed discussions where it was noted that the management of incidents is as much about the culture of different interested parties working together as well as having the data and technology to share knowledge in a timely way.

**Figure 8-2 - As a business, what are your top three priorities for improving the movement of goods in the area?**



**Figure 8-3 - Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area?**



## SOLUTIONS

- 8.3.11. In interviews, discussion turned to looking at solutions and there was some agreement that there is a fundamental question about how government tackles the issue of capacity on the network. In interviews stakeholders wanted it recognised that the movement of freight is integral to the functioning of society and its efficient movement can enable a thriving economy. To maximise the use of the existing network some stakeholders feel government needs to balance the needs of different users and as such tackle the rise in car ownership and number of trips made by single occupancy car users. Related to capacity are the challenges of incident and roadwork management which impacts the reliability of roads, impacting their reliability which is essential to the delivery of goods. The role of technology in managing network incidents seen as a clear opportunity noted by stakeholders in discussions.
- 8.3.12. The survey indicated that over 70% of respondents felt that TfSE have an important role to play in shaping the transport for the area. In the interviews, most stakeholders saw that the role of STB is key to having a well-connected infrastructure; having a body that is local enough to understand the specific needs of the region, yet sufficiently large and powerful to be able to make decision, plan and enforce consistency and enable greater change. What was clear is that whilst consistency is important, the implementation of policies needs to consider local needs and what works in one place does not means it will work everywhere and so a more local approach through the STB was supported.

## 8.4 CONCLUSIONS

- 8.4.1. Overall the survey and discussions suggested that whilst there were challenges with the network these challenges should be met by focusing on using the assets we have better, rather than just trying to build more roads. The results also indicated that TfSE has a key role to play, in particular by achieving consistency in policy, providing long term goals and a structure by which sustainable transport planning can be achieved.

## 9 FUTURE TRENDS AND FORECASTS



- 9.1.1. This chapter introduces the standard industry forecasts for road and rail freight and the considers the changes in society, logistics strategy, and the local population and economy that might impact these forecasts for the TfSE area.

### 9.2 ROAD FREIGHT DEMAND FORECASTS

- 9.2.1. National Road Traffic Forecasts (NRTF) can be used to obtain growth rates for various types of vehicle by road type and region. HGV forecasts in the NRTF are derived using the Great British Freight Model which has a wide range of variables include demand forecasts for various commodities and road and rail freight costs. LGV forecasts, in contrast, are extrapolations of recent rapid growth as drivers of demand are much more poorly understood.
- 9.2.2. Table 9-1 and Table 9-2 show the National Road Traffic Forecasts of growth in vehicle numbers for LGVs (<3.5T) and HGVs for the South-East Region (of which TfSE is only a part) and compare these to growth rates for England and Wales as a whole. It should be noted that the NRTF forecasts are scenario based, but the numbers in the table are based on a central case.
- 9.2.3. The final column in each table shows the NRTF forecast growth in demand for all vehicles to 2050 for comparison.

#### HGVs

**Table 9-1 - HGV% increase from 2015**

Road Type	Region	HGV % Increase Over 2015							All Traffic	
		2020	2025	2030	2035	2040	2045	2050	2050	2050
Motorway	South East	2.6%	4.8%	7.5%	11.7%	16.0%	20.1%	24.1%	29.1%	41.9%
Motorway	All UK	1.2%	1.7%	2.9%	5.5%	8.3%	11.0%	13.6%	16.2%	41.0%
Trunk A	South East	2.8%	3.4%	6.0%	9.5%	13.4%	17.2%	20.7%	24.1%	38.9%
Trunk A	All UK	0.6%	0.9%	2.0%	4.0%	6.3%	8.6%	10.6%	12.6%	37.9%
Principal A	South East	-1.8%	1.2%	3.1%	5.5%	8.1%	10.6%	13.2%	15.8%	31.8%
Principal A	All UK	-2.4%	-2.1%	-1.3%	-0.6%	0.3%	1.3%	2.3%	3.3%	31.4%
Minor Roads	South East	-0.4%	-2.0%	-1.0%	-0.1%	0.7%	1.7%	3.1%	4.1%	34.3%
Minor Roads	All UK	-2.9%	-3.5%	-3.5%	-3.4%	-3.2%	-2.9%	-2.5%	-2.1%	34.1%
All Roads	South East	1.5%	3.2%	5.7%	9.1%	12.7%	16.2%	19.5%	22.1%	36.2%
All Roads	All UK	-0.1%	0.2%	1.1%	3.0%	5.0%	7.0%	8.8%	10.6%	35.2%

- 9.2.4. For HGVs, it is notable that growth will be much slower than for general traffic, with HGV growth across all roads of 19.5% by 2050 compared to 36.2% for all traffic combined. However, at 19.5% HGV growth in the South East by 2050 is forecast to be over double the average growth of HGVs in

the UK of 8.8%. Most likely this faster growth is due to population growth and a growth in trade through the ports.

- 9.2.5. The fastest growth is forecast to be on motorways, at 24% by 2050.
- 9.2.6. Across the UK, the NRTF forecasts that HGV traffic will fall from 5.3% of all traffic to 4.3% between 2015 and 2050. In the South East the HGVs are set to fall very slightly from 4.5% of all traffic to 4.0% of all traffic. On motorways in the South East the percentage of HGVs will fall from 8.9% to 7.7%.
- 9.2.7. In summary, volumes of HGVs in the SE are forecast to grow significantly, but at a slower rate than traffic as a whole.

## LGVS

**Table 9-2 - LGV% increase from 2015**

Road Type	Region	LGV % Increase over 2015							All Traffic
		2020	2025	2030	2035	2040	2045	2050	2050
Motorway	South East	10.5%	15.6%	21.9%	30.6%	39.2%	46.3%	51.9%	41.9%
Motorway	All UK	8.9%	13.3%	19.2%	27.5%	35.7%	42.6%	48.0%	41.0%
Trunk A	South East	9.0%	13.6%	19.6%	27.5%	35.6%	42.4%	47.7%	38.9%
Trunk A	All UK	9.8%	14.2%	19.9%	28.0%	36.2%	43.1%	48.5%	37.9%
Principal A	South East	8.9%	13.4%	19.2%	27.4%	35.6%	42.5%	47.9%	31.8%
Principal A	All UK	9.5%	14.8%	20.8%	29.0%	37.3%	44.1%	49.6%	31.4%
Minor Roads	South East	12.0%	19.9%	27.2%	36.4%	45.5%	53.1%	59.2%	34.3%
Minor Roads	All UK	11.5%	19.1%	26.2%	35.3%	44.3%	51.8%	57.8%	34.1%
All Roads	South East	10.4%	16.2%	22.6%	31.2%	39.8%	46.9%	52.6%	36.2%
All Roads	All UK	10.1%	16.0%	22.3%	30.8%	39.3%	46.4%	52.1%	35.2%

- 9.2.8. In contrast, LGV traffic is forecast to grow faster than general road traffic, particularly on minor roads (many of which are in cities), but with growth in the South East closely matching growth in the UK as a whole.

## 9.3 RAIL FREIGHT DEMAND

- 9.3.1. Nationally, construction traffic and intermodal rail freight volume is forecast to continue to grow strongly. There are three sets of forecasts to consider:
  - Network Rail Freight Market Study (FMS) 2013;
  - DfT Rail Freight Strategy (RFS) 2016; and
  - Network Rail Revised Market Forecast 2019
- 9.3.2. The FMS provided forecasts to 2043 and suggested strong growth of intermodal traffic, with some growth for construction traffic and limited growth or decline for other commodities. The FMS is a non-constrained forecast - it assumes that the railway will have both the capacity and the capability (loading gauge in particular) to carry forecast demand.
- 9.3.3. The DfT RFS, in contrast, is a constrained forecast, taking into account network capacity and other constraints. The RFS forecast uses a different time base for its forecasts (2030 as opposed to 2033 used in the FMS). It does not provide a simple total rail freight forecast, but it does provide forecasts by commodity group.

- 9.3.4. The NR Revised Market Forecast revisits the 2013 FMS and considers the causes of actual rail freight growth which has been lower than forecast between 2013 and 2017. The report then produces a scenario-based revised forecast to reflect future uncertainty.
- 9.3.5. The main conclusion that can be drawn from these three approaches to forecasting is the broad agreement that there will be continued strong growth in the rail movement of containers to and from ports and construction traffic, but that there is divergence between the forecasts about the future potential for domestic container movements (between non- port terminals), with the more recent NR forecasts still showing strong growth for domestic intermodal, but significantly slower than the FMS.
- 9.3.6. The change in the mix of commodities carried by rail has had a major impact on requirements for freight capacity. While declining coal traffic did not release many useful paths for passenger services, many of the fast-growing flows of rail freight are along routes which are already used by large, and growing, numbers of passenger trains. For example, container trains from Southampton use the busy South West Main Line and Reading to Oxford corridors, while construction materials from the Mendips also use the GWML through Reading.
- 9.3.7. The 2019 NR forecasts are the most recent forecast total growth in rail freight from 85.8 million Tonnes in 2016/7 to 102 million Tonnes by 2023/4. The forecast tonnage is actually the average of four scenarios, reflecting different levels of market growth and factors favourable to rail or road. The values for these scenarios range from 78 million Tonnes to 128 million Tonnes in 2023/4.
- 9.3.8. Table 9-3 from the NR forecast shows the central or average forecasts for Tonnes lifted by commodity for the key commodities carried in the TfSE area and also illustrates the compound annual growth rate (CAGR).

**Table 9-3 - Rail freight tonnes forecast (Network Rail)**

	Tonnes (Thousand)				CAGR		
	2016/7	2023/4	2033/4	2043/4	2016/7 to 2023/4	2016/7 to 2033/4	2016/7 to 2043/4
Ports Intermodal	16,213	20,852	31,756	42,879	3.7%	4.0%	2.7%
Domestic Intermodal	2,481	7,101	6,046	10,933	16.2%	5.4%	1.6%
Channel Tunnel	374	482	621	746	3.7%	3.0%	1.6%
Construction	24,286	26,816	35,869	53,338	1.4%	2.3%	2.6%
Other Rail Freight	42,432	41,285	38,853	39,800	-0.4%	-0.5%	-0.1%
All Rail Freight	85,786	96,536	113,145	147,696	1.7%	1.6%	1.6%

- 9.3.9. This clearly shows strong growth potential for ports intermodal freight and construction materials. The forecast for domestic intermodal is notably lower than previous Network Rail forecasts, but still strong.
- 9.3.10. A key driver behind growth in domestic and port related intermodal traffic is the area of warehousing which is located on Strategic Rail Freight Interchanges. More SRFIs leads to a higher intermodal forecast. It is important to note that these forecasts are unconstrained – they assume that capacity can be provided to meet demand.
- 9.3.11. The Network Rail forecasts include maps showing the forecast number of trains per day on key routes. As most routes in TfSE's area only accommodate 1 or 2 trains per day, forecast growth does not have any significant impact on the number of paths required on those routes. However, demand



for the route from Southampton to Reading is forecast to grow from 20-25 trains per direction per day currently to 30-40 trains per day by 2033.

9.3.12. It should not be assumed that Network Rail and the rail freight industry are simply operating in the mode of “predict and provide”. There are a number of measures being pursued which will reduce the number of paths required while allowing continued growth. These include:

- Longer and heavier trains, with 775m intermodal trains and much heavier aggregates trains becoming the norm;
- Use of standard paths between freight nodes – allowing pathing on each route to be optimised;
- Eradication of unused freight paths; and
- Possibly higher freight train speed to minimise impacts on passenger services.

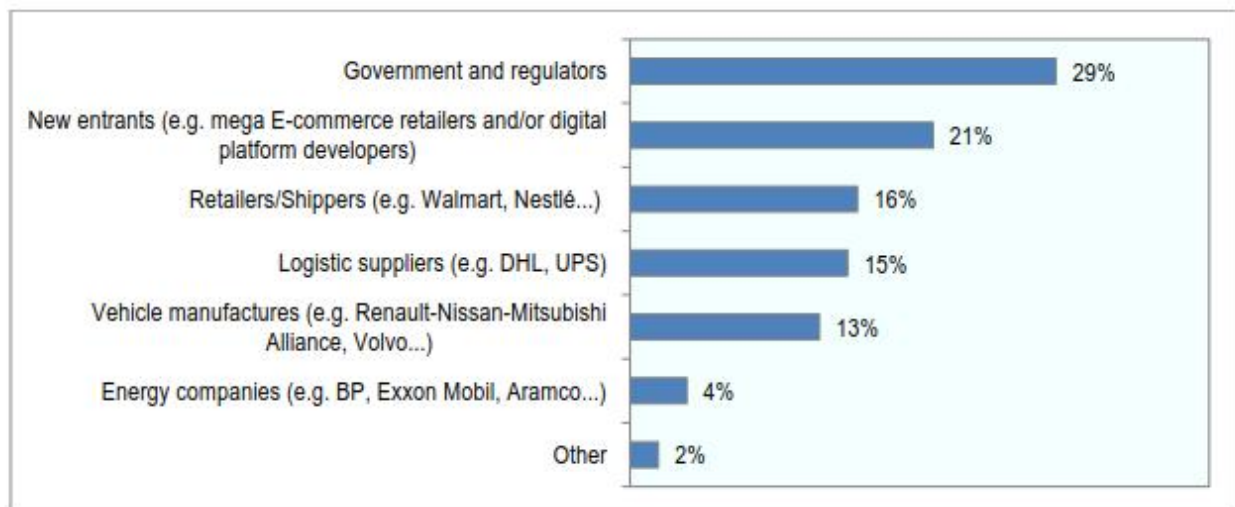
## 9.4 CHANGES IN LOGISTICS

9.4.1. Chapter 2 introduced the factors impacting logistics businesses and driving change. These included:

- Customer driven changes;
- Government driven changes;
- Industry driven change; and
- Technology.

This is detailed a bit further in Figure 9-1 which identifies where transformation may come from.

**Figure 9-1 - Agents that will lead transformations in the sector (OCED/ITF, 2018)**



### Customer driven changes

9.4.2. The NIC Managing Congestion report noted *“The move towards e-commerce is clear, with almost 20% of UK retail sales being recorded online. This is driving other changes such as increased home deliveries, same day and same hour deliveries, and click and collect. Other consumer deviations include changes in the way we use cities, with less shopping, more at-home eating and entertainment, and a shift of purchasing power from material things to virtual things or experiences e.g. declining record sales and growing use of online streaming. The consequences of this on freight are significant for urban areas, with very low load factors for delivery vehicles in cities (e.g. 38% for vans in London)”* (NIC, 2019).

- 9.4.3. Other consumer behaviours are also driving change that has impacts along the supply chain; this includes concerns about waste, preference for locally sourced products, or pressure to reduce greenhouse gas emissions. It is worth noting that these changes are prompted by wider societal changes such as population growth, urbanisation and new working and living demands.

#### **Government driven changes**

- 9.4.4. Again, the NIC report notes “Goods traffic has always been seen in two ways, both as a concern due to environmental impacts and as a necessary means to sustain the economy and grow businesses. This dichotomy is summarised, for example, in the Minister’s introduction to the DfT’s Freight Carbon Review (DfT, 2017): “Road freight’s positive contribution to our economy extends beyond its direct employment and financial benefits - the sector is a critical enabler of wider business across the UK - of all sizes, from internet entrepreneurs to large distribution businesses. However, I am also aware that heavy goods vehicles (HGVs) account for a significant portion of the UK’s air quality impacts from transport, and am committed to working collaboratively with industry to address these issues.”
- 9.4.5. Two major changes in approach from Government over the last twenty years have been the increased recognition of the impact of freight emissions, particularly greenhouse gases, and appreciation that efficient freight transport is an enabler of economic growth.
- 9.4.6. In cities, local and city Governments have had a much more direct impact on freight movements. While there is a clear understanding of the importance of efficient deliveries to local economies, cities see the urgent need to tackle air quality and congestion. In a positive light, many cities wish to become more pleasant, healthy, and safer places to live and work – this has led to proactive policies such as Low or Zero Emissions Zones and pedestrianisation.

#### **Industry driven change**

- 9.4.7. At the same time as market driven changes and the legislative environment evolves, the logistics industry continues to develop and innovate to deliver solutions which meet those competing needs and drives cost improvements. Logistics is a low margin activity, with highly competitive businesses ranging from owner operators to major multinational businesses, but with a dominance in SMEs. Initiatives driven by industry range from collaborative approaches to reduce empty running to last mile solutions such as cycle deliveries.

#### **Technology driven change**

- 9.4.8. Technology can act as a driver and enabler of change and the logistics sector is already taking on board technological change, from automation of warehouses to real time monitoring of haulage fleets. Where available, the industry has been quick to adopt changes in vehicle technology, whether in the form of more fuel efficiency, driver assistance / awareness devices, or safety monitoring devices. The way that freight is managed is being changed by delivery management systems (that can plan and monitor every delivery end-to-end), online collaboration tools, and sophisticated fleet management systems.
- 9.4.9. In the future, change is expected to be even more rapid and potentially more dramatic. Connected and automated / autonomous vehicles, low or zero emission vehicles for trunking operations,

technology, and better availability of data has the potential to revolutionise the way that supply

TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Devolution of decision making</b> <b>Maturity:</b> Established	<i>More decisions will be made at the regional or city level</i>	This may impact consistency of policies making logistics and freight movements more difficult and may result on unintended consequences if not considered with a broader understanding of the implications. Current examples are implementation of low emission zones, lorry banks and delivery restrictions.
<b>Globalisation of markets</b> <b>Maturity:</b> Established	<i>Markets will become increasingly global</i>	This could have a positive impact on the international gateways, meaning access to them becomes even more important.
<b>Protectionism of markets</b> <b>Maturity:</b> Established	<i>An increasing desire to shop and trade locally</i>	Shorter supply chains, allowing for greater responsiveness, however, may make supply chains more complex as multiply suppliers may be needed to fulfil demand.

chains are managed.

- 9.4.10. The NIC report noted that the application of technology in the freight sector could deliver benefits for example improve just in time deliveries and reduce the impacts of movements with regards to other users and neighbours. However, the application of technology should not be considered in isolation and must be part of wider policy and strategy considerations and where appropriate be built into future programmes.
- 9.4.11. Technology needs to be considered at the earliest possible stage within a strategic plan – retrospectively changing infrastructure is less efficient than building in options at the start.

## 9.5 MEGATRENDS

- 9.5.1. TfSE have commissioned a paper on “Future Transport Technology” and this report identifies a number of “mega trends” that are shaping many aspects of society. These trends will influence how, when and where people will need to travel. These can be categorised broadly as follows and are detailed in tables
- 9.5.2. Table 9-4 to
- 9.5.3. in terms of their impact on freight and logistics.
- Demographic challenges;
  - Social change;
  - Environmental focus;
  - Economic shift; and
  - Political landscape

**Table 9-4 - Demographic megatrends**

TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Growing &amp; Ageing Population</b> <b>Maturity:</b> Emerging	<i>An increasingly ageing population will have different transport needs and expectations</i>	How the population shop may change, and whilst currently the preference for an ageing population may be to shop in person, this will change as online becomes a much easier option. This may sustain the trends towards online shopping and facilitate the need for easier last mile, last meter solutions.
<b>Aging Economically Active Population</b> <b>Maturity:</b> Emerging	<i>Increasing retirement age and taking on larger financial burdens later in life means that people will need to work for longer.</i>	
<b>Health &amp; Wellbeing</b> <b>Maturity:</b> Emerging	<i>Less people are undertaking physical activity and many are suffering ill effects of an unhealthy, inactive lifestyle</i>	Congestion through ongoing dependency on cars, increasing activity to encourage cycling, increasing conflicts on road with freight and logistics (Vulnerable Road Users)
<b>Loneliness</b> <b>Maturity:</b> Emerging	<i>Increasing numbers of people, across ages all ages and socioeconomic groups, are living alone with adverse effects</i>	
<b>Net Migration</b> <b>Maturity:</b> Established	<i>Net migration will continue to fluctuate, region by region, conurbation to conurbation</i>	Increasing demand for goods and services, inevitably impact freight and logistics given it is a derived demand.
<b>Urbanisation</b> <b>Maturity:</b> Emerging	<i>Cities are growing at a rapid pace</i>	Challenges of urban deliveries will mean that strategies need to be put in place to manage the growth of the urban environment and changing needs of these areas – ie to more service driven activities, such as entertainment, eating out
<b>Social Inequality</b> <b>Maturity:</b> Established	<i>Social inequality still exists within and between areas</i>	This may impact services such as online and last meter than may result in higher prices - ???
<b>Changing Family Compositions</b> <b>Maturity:</b> Emerging	<i>Motherhood is increasingly occurring later or not at all and competing with employment which is having impacts on family compositions, roles and intergenerational mixing</i>	

**Table 9-5 - Social megatrends**

TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Acceptance of 'sharing'</b> <b>Maturity:</b> Emerging	<i>Many people are increasingly happy to share assets and services if it is convenient and the price is right</i>	Asset sharing in freight, crowd sourcing deliveries
<b>Expectation of 'immediacy' and always being 'on'</b> <b>Maturity:</b> Maturing	<i>People want everything on-demand</i>	Lead times, cost
<b>'Customer' centricity</b> <b>Maturity:</b> Established	<i>The customer is always right</i>	Service levels, better information from HE, DfT to better plan, greater impact of cost of congestion – information to the customer.
<b>Rise of the 'experience' economy</b> <b>Maturity:</b> Emerging	<i>People are buying less 'stuff' but spending more doing things.</i>	Has the potential to disrupt transport networks if not monitored, whether that be through person trips or logistics, posing questions as to the extent to which people are content with buying online. Experiences need to be served, products will be needed to be delivered, waste created
<b>Need for Life-Long Learning</b> <b>Maturity:</b> Emerging	<i>Changes in technology mean a career for life may not exist</i>	Driver shortages, changes in skills needed for the industry
<b>Trend to Simplicity</b> <b>Maturity:</b> Emerging	<i>Real demand for cutting out the complexity and making it as easy as possible to carry out the essentials</i>	May push complexity further up the supply chain

**Table 9-6 - Environmental megatrends**

TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Climate Change</b> <b>Maturity:</b> Established	<i>Climate change and associated weather events will increasingly impact the UK</i>	Disaster recovery, contingency planning, more robust supply chains. Need also to consider how to reduce carbon intensity of freight movements for example: low carbon road operations electric road systems, eHighway: electrified heavy-duty road transport or new technology such as pipelines for freight
<b>Air Quality</b> <b>Maturity:</b> Established	<i>Air quality is impacting urban areas and at key locations on the network</i>	Policies restricting HGV movements in urban areas impacts freight operations, potentially increasing costs and efficiencies.
<b>Role of Renewables</b> <b>Maturity:</b> Maturing	<i>Wind, wave and solar power will reduce reliance on carbon derived fuels.</i>	How renewables can be used in freight is unknown, outside of electric with hydrogen being the closest to being possible. It is not yet possible to make investment decisions about the infrastructure required to make the transition to zero emission road freight.
<b>Scarcity of Resources</b> <b>Maturity:</b> Emerging	<i>There won't be enough rare earth metals to sustain technological need.</i>	Potential impact of vehicle manufacture.
<b>Low carbon energy</b> <b>Maturity:</b> Emerging	<i>Adoption of low carbon energy sources reduces reliance on other geographies.</i>	Access to low carbon alternatives will impact the industry's ability to "decarbonise"



**Table 9-7 - Economic megatrends**

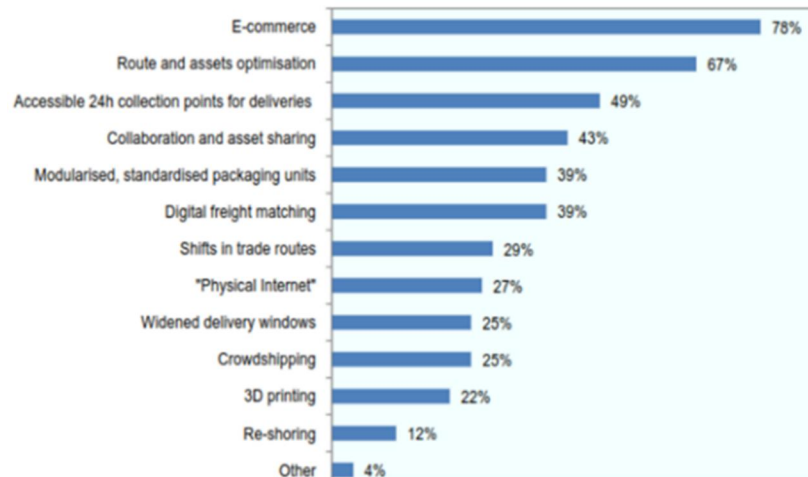
TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Rise of the 'gig' economy</b>  <b>Maturity:</b> Emerging	<i>People may have multiple jobs being paid for the tasks they undertake</i>	<p>Could increase access to drivers who can choose to fit jobs around other work and could build in flexibility to respond to demand, increasing efficiency. Risks around inconsistency in skilled labour market.</p>
<b>'New' business models</b>  <b>Maturity:</b> Emerging	<i>Disruptive business models will change the way businesses and markets work</i>	<p>Digital-Based Freight Models: New digital entrants are transforming traditional relationships in the freight and logistics sector offering customers easier access, price transparency and near real time integrated services built on increasing amounts of data and connected platform technologies. For the freight and logistics industry, digital freight models present an opportunity to transform practices which are currently highly fragmented, have low levels of transparency, underutilise assets, involve costly manual processes and possess outdated customer interfaces.</p> <p>Service-Based Freight Models: New digital technologies are transforming traditional relationships with end users offering customers easier, increasingly flexible access and near real time deliveries, built on increasing amounts of data and automated technologies.</p>
<b>Impact of automation</b>  <b>Maturity:</b> Emerging	<i>Automation will hollow out manufacturing and administrative jobs</i>	<p>Automation in transport may have its greatest impact in safety and the interacting with warehouses/factories – i.e. automated loading. Other techniques such as offsite construction (which may well be automated) may have a big impact of the efficiency of logistics.</p>
<b>On-demand manufacturing</b>  <b>Maturity:</b> Emerging	<i>Products will be made on demand to meet customer needs on a just in time basis</i>	<p>Whilst this may be an ideal approach, this is highly dependent on having a reliable transport infrastructure to ensure on time deliveries across the supply chain. Also, may require logistics operations closer to be even closer to the customer.</p>

TRENDS	HEADLINE	IMPACT ON FREIGHT
<b>Devolution of decision making</b>  <b>Maturity:</b> Established	<i>More decisions will be made at the regional or city level</i>	This may impact consistency of policies making logistics and freight movements more difficult and may result on unintended consequences if not considered with a broader understanding of the implications. Current examples are implementation of low emission zones, lorry banks and delivery restrictions.
<b>Globalisation of markets</b>  <b>Maturity:</b> Established	<i>Markets will become increasingly global</i>	This could have a positive impact on the international gateways, meaning access to them becomes even more important.
<b>Protectionism of markets</b>  <b>Maturity:</b> Established	<i>An increasing desire to shop and trade locally</i>	Shorter supply chains, allowing for greater responsiveness, however, may make supply chains more complex as multiply suppliers may be needed to fulfil demand.

**Table 9-8 - Political megatrends**

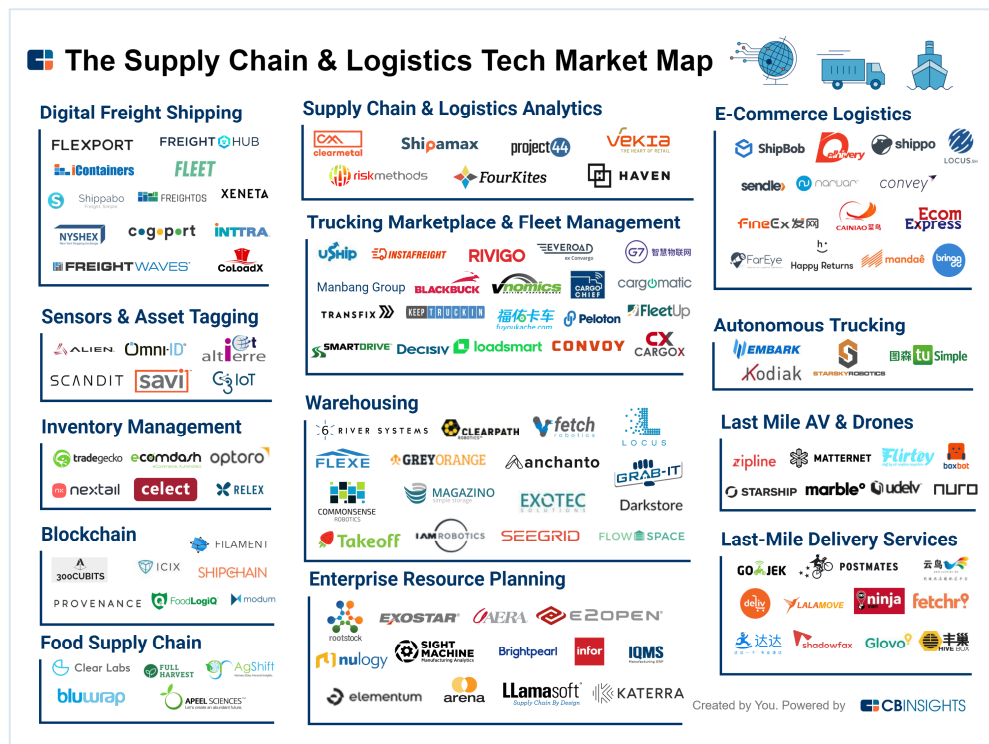
- 9.5.4. The rate of change of some of these trends will vary enormously from place to place and whilst some may induce significant change others will not and how this will impact the freight and logistics arena in TfSE will also vary). The rate of change will also vary, with some operators feeling that change will be evolution rather than revolution (see stakeholder section) although the level of change in the industry in the last 10 years suggest a more rapid change than slow paced evolution.
- 9.5.5. In the shorter term, there are already clear trends emerging. OCED, as see in Figure 9-2 suggests that e-commerce will continue to grow and develop but that other areas will also change.

**Figure 9-2 - Likely trends and innovations by 2030 (OCED/ITF, 2018)**



9.5.6. Innovation in logistics provides a means to improve efficiency and reduce impact, including a range of solutions and technologies. As much as any other sector of industry, deliveries and supply chains have been recognised as providing an opportunity for new technology, apps, and tech start-ups. Figure 9-3 from CB Insights, illustrates a small sample of businesses offering new solutions in this field.

Figure 9-3 - Supply Chain Start Ups - CB Insights



9.5.7. From blockchain to robot delivery vehicles, any one of these technologies could lead to market disruption of the type that Uber has delivered for the movement of people. Technology change manufacturing from 3D printing to enhanced use of robotics will also have an impact on the wider supply chains and the transport solutions that support them.

- 9.5.8. The challenge for planners is to be aware of such developments, to nurture and encourage those which are viable and address targeted issues or opportunities, but to avoid “solutions in search of a problem” or unviable technologies.

## 9.6 BARRIERS TO REALISING THE POTENTIAL OF NEW TECHNOLOGY

- 9.6.1. Traditionally transport strategies have focused on the needs and demands of the AM and PM peak periods considering the ‘commute’ as being the key concern, clearly the needs of the wider economy such as freight may mean that this focus may not be a sustainable approach to transport planning. TfSE’s aspiration is that transport is an enabler to the economy and therefore all areas where access and mobility contribute to fundamental economic and social activities need to be considered, namely;
- Employment opportunities;
  - Educational attainment;
  - Healthcare needs;
  - Goods and services, retail and leisure;
  - Raw materials, crops, products & waste;
  - Tourism; and
  - Social interactions.
- 9.6.2. The mobility needs of these various segments vary greatly and technology will have a role to play in meeting both digital and physical access needs to them all. For this study, the goods and services element is of prime interest.
- 9.6.3. Lot D highlights: *“Reliable, resilient and timely access to goods and services (particularly food) is crucial to economic performance. The retail and services sectors have seen seismic shifts of the last two decades with the advent of home shopping (home delivery, click and collect) and digital access to services (banking, local authority services etc.).*
- 9.6.4. *These changes have seen significant behavioural change by consumers with convenience being a key factor in decision making. Trip making has been impacted with a shift from consumer trips to retailer led trips however this revolution hasn’t negated the need for people to visit ‘bricks and mortar’ retail establishments to browse, compare and in many cases still purchase. Retailers have recognised this trend with a move to a more ‘experience’ led approach where food, drink and other activities are embedded within the ‘shopping’ experience.*
- 9.6.5. *Within the service sector online access has impacted the need for a ‘high street’ presence in many places but human interactions are still crucial for many transactions especially for those uneasy or unable to engage with online solutions. Trip making will continue to evolve particularly as retailers move to longer opening hours with ever more diverse offers. It should also be noted that the logistics industry is evolving rapidly to meet demands with 24/7 operations, locational trends and automation in warehousing impacting trip making”. This is referenced also in section 2.6.*
- 9.6.6. The Future Transport Technology report reviews the detailed trajectories for these trends, however, in summary, responses to change, especially technology needs to be driven by finding a solution to a problem rather than finding a problem for technology to solve. The cost of solutions can be high

and investing these requires a degree of certainty and there is a role for government and STBs to provide direction.

## **9.7 CONCLUSIONS**

- 9.7.1. The rate of change in logistics technology and the business environment for logistics is unprecedented. Many developments offer opportunities to improve customer service, reduce impacts, or improve efficiency. Some developments may have undesirable impacts – for example a focus on improved customer service could lead to lower payloads.
- 9.7.2. However, the main conclusion must be that the direction of change is difficult to forecast, and the impact of these changes on infrastructure and land use is uncertain. Policies need to be flexible to accommodate change, but also pro-active to steer and support businesses with the aim of maximising benefits and minimising impacts.

## 10 CHALLENGES AND OPPORTUNITIES

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### 10.1 INTRODUCTION

10.1.1. This chapter uses information from the policy review, data collection exercise, and stakeholder engagement to summarise the main logistics issues and opportunities in the TfSE area. The issues and opportunities are presented in the following classifications:

- Strategic (issues or opportunities which are relevant across TfSE and nationally covering all modes);
- Access to markets and gateways;
- Roads and Road Corridors;
- Rail and Rail Corridors;
- Towns and cities; and
- Rural areas

### 10.2 STRATEGIC

#### THE CHALLENGE OF GROWTH

- 10.2.1. HGV traffic in the TfSE area is forecast to grow more than twice as rapidly as the average for the UK, driven by population growth and increased trade through ports. While HGVs are not the main driver of peak time congestion, accommodating this growth will have adverse impacts on congestion, air quality, and road safety.
- 10.2.2. Addressing growth in the volume of HGVs does not mean stifling demand. The NIC Better Delivery Report and the Congestion Study which fed into it identified a large number of interventions can improve freight efficiency and reduce HGV traffic growth. These include modal shift and also support for businesses to improve efficiency, for example by increasing average payloads.

#### PLANNING FOR FREIGHT

- 10.2.3. The NIC interim report concluded that *“An absolute focus on delivering homes without consideration of how freight will service growth will be of detriment to both housing and freight. Without better recognition of the value of freight in planning, the freight system will encounter more pinch points, restricting its capacity to operate efficiently and deliver goods in the most sustainable way possible.”*
- 10.2.4. The NIC Final Report “Better Delivery” made the following comments:
- “Availability of land for freight distribution centres and other infrastructure is crucial for the efficient operation of the sector, and will be even more important in future for enabling optimised last mile operations. The most effective way of managing freight’s impacts on congestion while allowing efficient operations is by planning for the needs of freight at an early stage of statutory planning processes. For major new developments, this should be part of the thinking from the outset, recognising freight as an essential part of enabling and supporting infrastructure.”*
- 10.2.5. Recommendation 4 from the NIC is that “
- “Government should produce new planning practice guidance on freight for strategic policy making authorities. The guidance should better support these authorities in planning for efficient freight networks to service homes and businesses as part of their plan making processes. This new*



*planning practice guidance, which should be prepared by the end of 2020, should give further detail on appropriate considerations when planning for freight.”*

## **THE RAPID DEVELOPMENT OF SUPPLY CHAIN TECHNOLOGY**

- 10.2.6. As reported in Chapter 9, delivery and supply chains have been recognised as providing an opportunity for new technology, apps, and tech start-ups.
- 10.2.7. From blockchain to robot delivery vehicles, any one of these technologies could lead to market disruption of the type that Uber has delivered for the movement of people. Technology change manufacturing from 3D printing to enhanced use of robotics will also have an impact on the wider supply chains and the transport solutions that support them.
- 10.2.8. The challenge for planners is to be aware of such developments, to nurture and encourage those which are viable and address targeted issues or opportunities, but to avoid “solutions in search of a problem” or unviable technologies.
- 10.2.9. Many of these new businesses will generate user data which can be valuable for planners and can support more informed decision making.

## **LACK OF DATA**

- 10.2.10. The NIC identified lack of freight data as being another constraint. A lack of data prevents authorities from planning investments which focus on the priority areas and inhibits businesses from collaborating to improve their operations.
- 10.2.11. The NIC freight report highlights the low quality of data in the logistics sector. This includes government data. Vehicles can be tracked by satnav or ANPR, but this information is of little use without the vehicle type, commodity, and payload. This information is collected by the Continuing Survey of Road Goods Transport (CSRT) which is a valuable source of information but with a sample size that is too low to obtain useful origin/destination (OD) data. Such low quality of data is a constraint for infrastructure planners and traffic planners.
- 10.2.12. Within the industry there has been a rapid development of logistics management software which collects some of the “missing” information, including OD and journey time. However, in this case the data is confidential and not generally shared.
- 10.2.13. Lack of suitable data is considered to be a constraint on sharing or loads (a potential solution to low payloads). In this case it’s not only the availability of data which is the issue, it is the way different businesses describe their products and capacity.
- 10.2.14. On the other hand, new data sources are likely to become available, for example from Delivery Management Systems or from satellite navigation goods vehicle monitoring technology.

## **REGULATORY CERTAINTY AND CONSISTENCY**

- 10.2.15. On this issue the NIC Interim Report concludes:

*“Enabling a low emissions freight system that manages its impacts on congestion will require change and innovation. It is important that regulations encourage developments in operations and technology and drive change for the better.”*

- 10.2.16. The NIC Final Report recommended that:

*“To help manage peak time congestion on the urban transport network, local authorities should include a plan for urban freight within the infrastructure strategies they are developing. These plans should review local regulations to incentivise low congestion operations, consider the case for investments in infrastructure such as consolidation centres, and identify the land and regulatory requirements of new and innovative low congestion initiatives.”*

## **LOGISTICS SKILLS GAP**

10.2.17. In discussions with operators the issue of the skills gap in logistics was consistently expressed – this could be seen at a number of levels:

- Driver shortages – there is an acute Europe wide shortage of HGV drivers (and warehouse staff) due to the age profile of the workforce and poor working conditions, made worse in the UK by issues around Brexit.
- Skills for the future driven by changes in technology – rapidly skills such as maintaining diesel HGVs will need to be replaced by skills in battery and electric propulsion and sophisticated connected and autonomous vehicle technology. Workers in distribution centre will specialise in data handling rather than handling of goods.
- Knowledge of logistics for planners to help develop freight sympathetic spatial planning.

## **LAND FOR DISTRIBUTION**

10.2.18. The biggest growth in distribution space has been for “big sheds” at large sites with excellent road access, generally in the Midlands or further North.

10.2.19. As well as being a risk in terms of freight generation, rapid growth provides an opportunity to plan communities and business areas in ways which minimise freight demand, maximise efficiency, and minimise impacts on the environment and communities.

10.2.20. In addition to this, as the traditional logistics concentrations in the “golden triangle” become more stressed and this may present the opportunity for other regions to “pull” logistics companies into different areas, if the right environment is presented which includes: land availability, labour, transport infrastructure and critically for TfSE international gateways. Encouraging clusters of supply chain activity could provide a viable alternative location for logistics operators.

10.2.21. Currently there are no significant distribution parks within the TfSE area, outside of the key airports and ports. This suggests that outside of smaller regional hubs for retail distribution, large scale freight movements go through the region rather than stay within the area. The UKWA report suggested there is significant opportunity for developing logistics business within the South East if appropriate facilities were made available.

10.2.22. The constraints on logistics development in the TfSE area are significant, including land values, lack of labour supply, and the large areas of protected landscapes. This might lead to new approaches to distribution developments including multi storey distribution centres and shared use of buildings.

10.2.23. As discussed later in this chapter, there are challenges around competing land demands in relation to lorry parking, a key issue for the region.

## 10.3 ACCESS TO MARKETS AND GATEWAYS

- 10.3.1. Improving access to gateways, and accommodating the large volumes of traffic that they generate without adversely impacting local communities, the environment, and the other functions of the TfSE road network is a major challenge.

### RAIL FREIGHT

- 10.3.2. Rail freight provides an effective alternative to road for the Port of Southampton, with a market share of around a third of containers using the port, and an even larger share for exported cars. Rail freight should be able to keep up with growing demand through the port, and there may be opportunities to increase rail market share (for example to new SRFIs and for imported cars) provided that more capacity is provided on the rail network.
- 10.3.3. The RoRo ferry ports of Portsmouth and Dover and the Eurotunnel shuttle operation are far more difficult for rail freight to address. The UK rail network cannot carry “piggyback” trailers (lorry trailer on flat rail wagons) due to loading gauge constraints. An important exception is HS1 which has piggyback capability, but with very limited capacity (estimated as a maximum of 5 trains per night in each direction in the middle of the night).
- 10.3.4. However, the cross-Channel market may adapt to the constraints of Brexit by moving away from accompanied trailers and towards unaccompanied trailers and more use of containers (LoLo). As well as altering the pattern of ports used, this could also open opportunities for rail freight (for example from Thamesport).

### ROAD FREIGHT

- 10.3.5. The main ports in the region are located in city centres, presenting immediate issues of congestion, safety, and air quality.
- 10.3.6. More strategically, the need to use the M25 and in particular the Dartford Crossing presents risks of congestion and severe disruption on strategically important routes to the Channel Ports and Medway area. The Lower Thames Crossing would be an important step to address this issue.
- 10.3.7. Issues of congestion on routes to ports will be dealt with in the other supporting reports for the transport strategy, but such consideration should include the need for reliable journey times and suitable diversionary routes.

### GATEWAY ISSUES

- 10.3.8. Chapter 5 examined each of the gateways in the region and identified the following issues and opportunities. There are some themes that can be seen across a number of gateways which include capacity within the ports with limited opportunity to grow, sensitive to market fluctuations and challenges around network access with congestion at peak times.

**Table 10-1 – Gateway challenges and opportunities**

Gateway	Challenges and Opportunities
Southampton	Quayside and land capacity constrained in existing footprint Vulnerable to changes in the automotive sector Congestion and air quality issues within the City Potential to expand onto strategic land reserve High market share for rail
Dover	Reliance on short sea accompanied freight Issues with dealing with disruption City centre location leads to air quality, congestion, and safety concerns No rail freight option
Medway	Diversified portfolio of ports and wharves Land available for expansion Thamesport provides a LoLo opportunity currently under utilised Dependent on congested road links Rail access possible but under utilised
Portsmouth	Dependence on low growth longer Channel crossing market Limited land or capacity for expansion City centre location giving rise to air quality concerns but good access to trunk roads Lack of rail freight option
Shoreham	Provides an important local resource for construction, timber, and fishing Limited land for expansion but growing through investment in facilities City centre location with congestion and access through residential areas Lack of rail option
Newhaven	Limited quayside access and land Useful local resource for construction materials etc. Opportunity for rail access but most trades short distance Good location for major markets
Ramsgate	Capacity available Lack of investment in access and dredging Low reputation Potential for use if cross Channel market fragments
Heathrow	Key European hub for passengers Third runway provides significant opportunity for expansion Major UK freight hub with surrounding infrastructure such as warehouses Excellent passenger rail access being expanded Lack of rail freight access Air quality and congestion concerns
Gatwick	Well established as second UK airport Good infrastructure including motorway and rail access and neighbouring land for servicing etc. LHR 3rd runway may constrain growth and change the nature of the airport Capacity limitations on road and rail access
Southampton	Good potential for expansion including land Good road and rail access Dependence on a single operator Limited range of destination

Channel Tunnel	Resilient and high capacity link for cars, trucks, high speed trains, and through freight trains Vulnerable to disruption due to e.g. Brexit, migrant issues Potential for growth including HS rail Through freight trains have not been a success
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## 10.4 ROAD ISSUES

10.4.1. Road corridor challenges and opportunities are identified in section 7.2.

### LORRY PARKING

10.4.2. Lorry parking is a critical issue across the UK, especially in the South East. Inappropriate lorry parking causes issues for both residents ranging from litter, noise, damage to kerbs/verges but also for the drivers, with a lack of adequate facilities causing potential road safety issues, and concerns of personal safety/crime towards drivers and their loads. The corridors report refers to the 2017 DfT Lorry Parking Survey. This report highlighted the urgent need for more lorry parking in the South East, with 37% more overnight parking spaces are required. The area between London and the South-East coast leading to Dover port was identified as having excess of vehicles parking off-site and a high number of critically over utilised truck stops Table 10-2. highlights the capacity of the existing truck stops across the South East. This is further demonstrated in a heatmap which shows over utilised truck stops and areas of serious off-site truck parking.

**Table 10-2 - Lorry parking in the South East with critical utilisation (AECOM, 2018)**

South East Sites with Critical Utilisation (>85%)	Utilisation
<b>South East</b>	<b>84%</b>
Welcome Break Newport Pagnell Southbound	245%
Extra Beaconsfield	237%
Sutton Scotney Southbound	173%
Roadchef Maidstone Services	168%
Esso Cobham	150%
Airport Cafe	135%
Moto Reading Westbound	120%
Sutton Scotney Northbound	120%
Roadchef Rownhams Services Eastbound	118%
Roadchef Clacket Lane Services Westbound	116%
Welcome Break Oxford Services	114%
Welcome Break Newport Pagnell Northbound	111%
Moto Pease Pottage	108%
Extra Cobham Services	108%
Roadchef Clacket Lane Services Eastbound	104%
Moto Chieveley	102%
Motis Truckstop	100%
Shell TotHills Service Area	100%
Texaco Ower Roundabout services	100%
Moto Reading Eastbound	94%
Crossbush Services	87%
Havant Lorry Park	86%
Liphook Services Southbound	86%
Stop24 Services - Folkestone	85%

- 10.4.3. In addition to the issue of space availability the report suggested that some drivers choose to park off-site in lay-bys or industrial estates even when spaces are available on-sites, this may be due to costs. And therefore, the provision of parking needs to be appropriately priced as well as available.
- 10.4.4. One of the key challenges is clearly land use, and conflicting demands with the potential that housing is prioritised above logistics facilities to support increasing consumer needs. This challenge is not necessarily unique to the South East, it is one that is increasingly important if the international gateways are to continue to be a critical part of the UK economy.
- 10.4.5. In addition to the general shortage of lorry parking there is obviously the issue of the impact of severe disruption to traffic heading for the continent.

## **RELIABILITY AND DIVERSIONARY ROUTES**

- 10.4.6. Reviewing policy and stakeholder discussion we know that reliability is one of the most important features for businesses. Lorries faced with an unforeseen delay may miss delivery slots, the driver may run out of tightly controlled driving hours, or products on the lorry may perish.
- 10.4.7. Unpredictability on networks cost businesses, directly through rising fuel costs, driver costs and penalties for missed delivery slots, but also indirectly by increasing mileage as a result of logistics hubs being in suboptimal locations (some business may choose logistics hubs locations that are further away from the customer but have better, more reliable infrastructure).
- 10.4.8. An additional issue is the suitability of alternative routes, which may pass through communities, using inappropriate roads or extend journeys significantly. For example, bridge strikes by HGVs are still too common. A frequent complaint is the amount of time it takes to clear incidents, although this is being addressed by Highways England.
- 10.4.9. On the other hand, HGVs are disproportionately involved in incidents which cause extended road closures – improvements in HGV safety and maintenance can have a beneficial impact on journey reliability for all users.

## **LACK OF INFORMATION**

- 10.4.10. Goods vehicle drivers have different information needs to other road users. At the most basic level, signage needs to provide clear directions to important goods delivery locations and to give good and accurate warning of weight, width, or height restrictions.
- 10.4.11. Some local authorities, particularly at county level, addressed these concerns by working with businesses through Freight Quality Partnerships to improve signage and create freight routes. However, usefulness was limited by the challenge of disseminating information, and by varied approach taken by different councils. Modern satnav systems are available and widely used by hauliers, including up to date information on restrictions (although the quality of information for HGVs is variable). However, the use of Sat Navs needs to be tempered with a need for them to be HGV Sat Navs, rather than using basic car Sat Navs which can lead to HGVs using roads which are not appropriate. This may require work between different parties to share data and facilitate improvements.
- 10.4.12. As well as direction finding and warning of restrictions, freight efficiency can be improved when hauliers have good quality real time information on traffic, restrictions, parking, and alternative routes. This could include availability of delivery bays at the destination.



## LOW PAYLOADS AND EMPTY RUNNING

- 10.4.13. Improving vehicle payloads can potentially reduce congestion. This is an issue which is central to supply chain management and a key objective for many supply chain managers. However, payload for the freight journey is only one of many KPIs that managers and planners will be considering, and other objectives sometimes have the opposite impact and reduce payloads.
- 10.4.14. There are three relevant measures of freight payload to consider:
- Total payload per vehicle: this is generally measured in tonnes;
  - Percentage empty running: vehicle kilometres driven empty, defined as carrying zero tonnes, as a percentage of all vehicle kilometres; and
  - Loading factor: the amount of goods that were moved, as a proportion of the total amount of goods that could have been moved if HGVs were fully loaded. This can be measured as a percentage of the tonnage payload or a percentage of the cubic payload. Tonnage is more commonly used because data on the cubic loading factor is very difficult to record.
- 10.4.15. Over the last 50 years the total weight allowed for heavy goods vehicles has increased, culminating in the maximum weight being increased from 38T to 44T in 2001. Since the increase to 44T payloads, payloads have generally continued to improve, for example due to businesses backloading empty lorries, or better supply chain management. Average payloads in HGVs increased by 28% from 1990 to 2017.
- 10.4.16. From a road perspective, around a 30% of UK registered HGVs on the UK's roads are running empty, typically when they return to their depots after having completed a delivery job, or onwards to collect another load. Empty running, and part loads, equate to wasted money through excess fuel use and resources and contributes to the congested road network. According to the DfT, HGVs covered 16 billion miles on the Great Britain road network in 2014 and 29% of those miles were empty trucks.
- 10.4.17. In 2018 the FTA published a report showing empty running is at 30.2%, which is an increase from 2006 where it sat at 20.8%. This could, in part, be due to the increase in multi-drop, shorter journeys, making backloading more challenging to achieve. Reducing empty running to the 2001 level of 26% would equate to industry savings of around 480 million miles, 270 million litres of fuel costing around £340 million and 720 million tonnes of CO<sub>2</sub> (DfT, 2016).
- 10.4.18. For the 70% of trucks that ran loaded in 2016, the average loading factor was only 68% of the full potential tonnage payload. This had improved over the previous 10 years, with the loading factor in 2006 being only 56%. Filling every vehicle to its maximum tonnage or cubic payload would result in further huge reductions in vehicle miles, fuel used, and emissions.

## COLLABORATION

- 10.4.19. Maximising loads requires businesses to collaborate to fill empty space. Building trust between supply chain partners can be a reason why collaborative working for mutual benefit may not be undertaken, including concerns that the distribution of costs and benefits achieved through collaboration are not fairly apportioned.
- 10.4.20. Often a lack of collaborative interventions (such as backhaul and consolidation) are due to a lack of common standards of load description, in particular the availability of weight and volume data would enable more collaborative ventures to form. National standards for road freight data could facilitate

collaboration and provide a more robust foundation for the calculation of logistics efficiency and more meaningful insights into best practice. Transparency and timely access to data creates a disconnect between parties within supply chains, preventing an agile supply chain and one that allows for driving efficiencies through for example reducing empty running. This was also reflected in the ability to have comparable IT systems, especially when considering the ability of SMEs to share data.

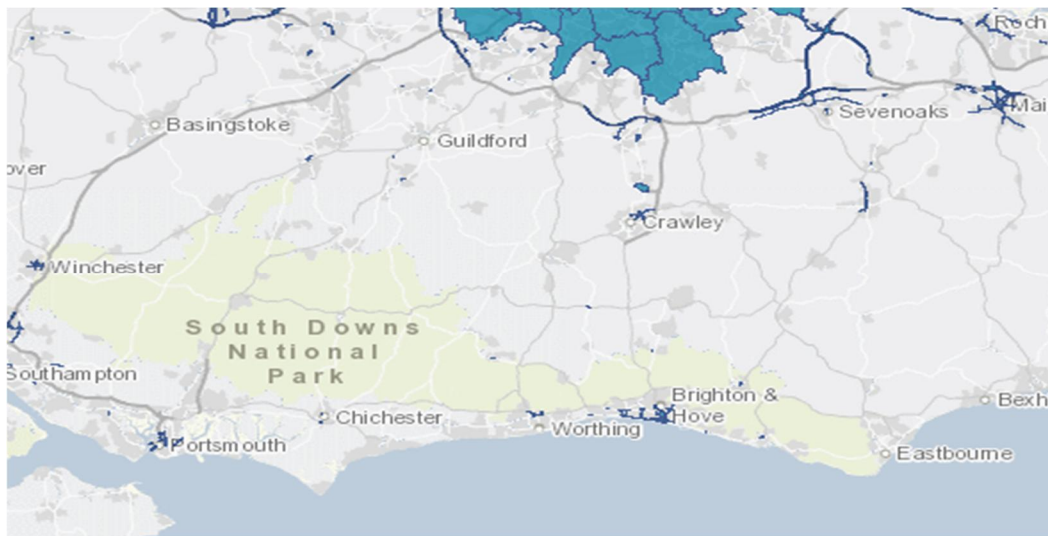
- 10.4.21. A DfT collaboration study in 2017 found that collaboration could be anti-competitive and therefore businesses may avoid collaboration so as not to contravene competition law. The CO3 project investigated this issue and found that the EU law condones collaboration, if it benefits consumers and the wider community.

## ENVIRONMENT

- 10.4.22. HGVs only constitute five per cent of the total vehicle mileage in Great Britain (DfT, 2018) but they contributed 17 per cent of the UK's greenhouse gas emissions from transport in 2014 (DfT, 2017).
- 10.4.23. In addition to greenhouse gas emissions, freight traffic also contributes to poor air quality. 21 per cent of nitrogen oxide (NOx) pollution from road transport sources came from HGVs (DfT, 2017) and 32 per cent from LGVs (NIC, 2018). In 2016, HGV and LGV tailpipe emissions together accounted for 11 per cent of PM10 and 17 per cent of PM2.5 pollution from road transport (NIC, 2018).
- 10.4.24. Greenhouse gases, NOx, and particulates – are all expected to fall over the next five to six years mainly because of improvements in engine technology such as EURO VI compliant engines and better fuel efficiency. The Government's Road to Zero strategy outlines a number of schemes that aim to further reduce road freight emissions – such as a voluntary 15 per cent reduction of greenhouse gas emissions by 2025, research projects with Highways England assessing the opportunities for zero emissions technologies for HGVs, and potential reform to Vehicle Excise Duty (VED) to encourage uptake of the cleanest vans.
- 10.4.25. There are a number of Air Quality Management areas (AQMA) in the TfSE area as can be seen in

10.4.27. **Figure 10-1.** There will be implications on HGVs and particularly for deliveries into towns, as Local Authorities try to address the issue. This is particularly an issue where the AQMAs relate to key areas of logistics activity for example near the ports.

**Figure 10-1 – Air Quality Management Areas in TfSE (DEFRA, 2019)**



## ALTERNATIVE FUELS

- 10.4.28. Due in part to payload and range, there is currently no alternative to diesel or carbon-based fuel engines for HGVs, despite advances in battery and hydrogen technology. Gradual introduction of alternative fuels will have implications for fuel infrastructure and, potentially, on range and payload. This will impact on existing operational regimes. Duty cycles could change in terms of where vehicles need fuelling, and where supporting infrastructure is, thereby disrupting long established commercial models.
- 10.4.29. One example is that more goods will be transferred at the edge of cities, requiring new facilities and may enable the quicker adoption of alternative fuels in the freight industry (but using smaller vehicles that are able to utilise alternative fuels).
- 10.4.30. There are opportunities to support innovation in alternative fuelled vehicles, not only for vehicle technology but for the supporting infrastructure (e.g. smart charging) and for the way that the new vehicles are used in supply chains.

## SAFETY

- 10.4.31. While HGVs are involved in a similar number of incidents per mile of driving as other vehicles, incidents involving HGVs are far more likely to cause fatalities as Table 10-3 illustrates.

**Table 10-3 - HGV incidents**

	HGV traffic	All motorised traffic	HGV %	% fatalities involving at least 1 HGV	Ratio of HGV to all motor vehicles
Motorway	12.4	109.2	11.4%	33.3%	292%
A	12.2	231.5	5.3%	17.0%	320%
Minor	2.3	180.3	1.3%	8.9%	685%
All	26.7	521.2	5.1%	14.9%	292%

Source: Traffic statistics table TRA0104, Accident statistics Table RAS 30017, both DfT

Columns 2 and 3 show the volume of traffic for each vehicle type.

- 10.4.32. A particular issue is that HGVs are involved in a significant number of serious collisions involving pedestrians or cyclists in towns and cities – with the risk magnified by increased cycling and walking.
- 10.4.33. While collisions involving cars and taxis are the most common cause of death and injury for pedestrians and cyclists, incidents involving HGVs are much more likely to result in death or serious injury.
- 10.4.34. The risk is increased in urban areas, particularly as cities evolve to encourage more walking and cycling.

## **AUTONOMOUS FREIGHT VEHICLES AND PLATOONING**

- 10.4.35. Significant research effort is being put into the potential for Connected or Autonomous Vehicles (CAVs) of all types, including HGVs and LGVs. CAV is a range of solutions, and does not inevitably mean driverless cars or lorries. For example, many modern lorries already include features such as Automatic Emergency Braking (AEB) which is likely to be mandatory across the EU.
- 10.4.36. The main benefit of CAV HGVs and LGVs is likely to be improved safety. Cost reduction will only be an opportunity if vehicles can become fully driverless.
- 10.4.37. Platooning involves two or more vehicles connected with ‘vehicle to-vehicle communication’, allowing them to effectively communicate with each other and operate as a single unit. The lead vehicle takes control of the speed and direction of all the vehicles in the platoon, when the lead vehicle brakes the following vehicles automatically brake with zero reaction time significantly increasing road safety. The constant controlled speed delivers fuel savings and environmental benefits through the reduction of CO2 emissions, whilst the ability to decrease the distance between vehicles increases road network capacity.
- 10.4.38. The Department for Transport (DfT) and Highways England has commissioned TRL to lead the first real-world operational trial of platooning vehicles on UK roads. The £8.1m trial will see TRL lead a consortium of partners including DAF Trucks, the UK market leader of heavy goods vehicle (HGV) sales, Ricardo, who worked with TRL to deliver the HGV Platooning feasibility study for the DfT in 2014 and DHL, the global market leader in the logistics industry.
- 10.4.39. There is industry scepticism about the benefits and practicability of platooning, and reductions in fuel consumption and CO2 emissions will become less important as the vehicle fleet becomes decarbonised.

## **10.5 RAIL FREIGHT**

- 10.5.1. Rail freight plays a focussed and important role in the TfSE area:
- It carries around 1/3 of containers to and from Southampton and the majority of exported vehicles
  - It brings large volumes of construction materials into the region supporting building new homes and infrastructure
  - It carries a large share of aviation fuel to Heathrow from North Kent
  - There is a limited number of services passing through the Channel Tunnel, a market which has not met its potential
- 10.5.2. Corridor specific challenges and opportunities are identified in section 7.4. The remainder of this section considers the wider role and opportunity of rail freight.

## EXPANSION AND MODAL SHIFT

- 10.5.3. These existing flows have potential to expand and are forecast by the rail industry to grow. But growth is dependent on capacity improvements, particularly on the route serving Southampton, and on capability enhancements on the routes to the Channel Tunnel, particularly an enhanced loading gauge.
- 10.5.4. Opportunities for significant modal shift from road to rail are limited by:
- Lack of intermodal terminals and, particularly, Strategic Rail Freight Interchanges in the region
  - The difficulty of carrying road trailers on rail to divert cross channel traffic to rail
  - Lack of success of Channel Tunnel through services
- 10.5.5. Uniquely, HS1 has the potential to carry road trailers on flat rail wagons as far as Barking. This could offer an opportunity to move trailers from the continent to Barking by rail. Currently paths are limited to less than half a dozen per night, and these are during an extremely constrained night time window.
- 10.5.6. Growth of cross channel container services (LoLo) might offer another opportunity to divert growth away from routes serving short sea ports, for example to use Thamesport or even to develop a rail freight facility in Kent aimed at LoLo containers.

## LONGER FREIGHT TRAINS

- 10.5.7. Longer trains have a double benefit: they provide more capacity on the rail network, and they reduce the cost of rail freight per tonne.
- 10.5.8. Network Rail aims to provide capability for 775m long trains on all main freight routes. TfSE already benefits from this capability on the main route to Southampton but there is a need to provide more 775m routes including the diversionary Southampton routes and routes to the Channel Tunnel.
- 10.5.9. For aggregates traffic the requirement is more to provide for heavier trains. The industry aspiration is for 400m long trains able to carry 2,000T of material. This should be the objective for the key aggregates corridors including to GWML.

## GENERALLY LOW AVERAGE RAIL FREIGHT SPEED

- 10.5.10. Other than for services that keep to one main line such as the WCML, the average speed of freight trains is quite low. The cause is not necessarily the maximum speed of freight trains (most are scheduled to operate at 60mph or 75mph), but the time taken in loops to allow passenger trains to pass, or in yards waiting to access a particular route.

## 10.6 TOWNS AND CITIES

- 10.6.1. The towns and cities across the region each face their own unique challenges, but must also address some issues which they have in common including:
- Changing customer demand leading to more home deliveries
  - Concerns about the impacts of goods vehicles on air quality and road safety, particularly for vulnerable road users
  - The strategy to make towns and cities more attractive and liveable, for example through pedestrianisation



- Reallocation of road space to cyclists and pedestrians

- 10.6.2. Fortunately there is a wide range of approaches being taken by logistics operators and businesses to address these issues, notably more use of electric delivery vehicles or cargo bikes. Local authorities can also play a role by planning for efficient freight and ensuring that land is available for new logistics uses such as micro consolidation.
- 10.6.3. TfSE has a role to play in supporting its partners to deliver improved, efficient, low impact delivery solutions, promulgating best practice, and ensuring consistency across the region.

## 10.7 RURAL AREAS

- 10.7.1. HGV and increasingly LGV activity is a frequent concern of residents in rural areas, and a cause of costly damage to roads and roadside structures. This may be of particular concern given that TfSE has a number of environmentally sensitive areas in its geography.
- 10.7.2. HGVs drivers and operators overwhelmingly prefer to stay on trunk roads where good speeds can be maintained. Therefore, it would seem that the majority of HGV movements on most rural roads are actually vehicles making deliveries to businesses or homes in the area, with the exception of misdirection through sat navs or inappropriate diversions.
- 10.7.3. Because of concerns about HGV access, it might be tempting to discourage freight intensive businesses from locating in rural areas, but such businesses can be important sources of employment for local people, and often support the viability of farms.
- 10.7.4. Businesses in rural areas may need therefore, like urban areas (but for slightly different reasons) plan for goods movements, and to work with local communities and road authorities to improve delivery efficiency where possible.
- 10.7.5. Research by Citizen's Advice found that people in rural areas rely heavily on postal services. They're 50% more likely than urban residents to use a post office at least weekly. Online shopping can offer huge benefits, including more choice, cheaper prices and greater convenience. PricewaterhouseCoopers estimate households save £560 a year by shopping and paying bills online.
- 10.7.6. People who live in rural areas have the most to gain—they don't have a wide range of shops on their doorstep so shopping online gives them access to a wider range of products. It's important they're able to receive parcel deliveries as easily as anybody else, no matter where they live.
- 10.7.7. Citizen's Advice looked at a range of evidence to see how the parcel delivery service differs in rural compared to urban areas. They found 3 key areas of interest.
- Rural consumers have different preferences to those in urban areas;
  - Rural consumers experience some problems more than other groups; and
  - Even when the problems are the same, the solutions will be different.
- 10.7.8. Rural logistics is perhaps less well understood than urban, but is none the less important, especially for the TfSE region and there is a significant role for technology (5g, drones, data for route and load planning, asset sharing and so on) in providing efficient solutions for rural logistics.

## 11 EVIDENCE GAPS

- 11.1.1. The preceding chapters have provided a clear picture of freight patterns, trends, and issues for the South East, including a view of the economic importance of freight to the area. However, a lack of comprehensive freight data presents an ongoing challenge and inhibits the transport planning process.
- 11.1.2. This section provides a data gap analysis which starts with a checklist for each topic of the ideal information required to support decision making, strategy development, and, in future, investment. We will clearly indicate the availability and quality of evidence under each heading.

**Table 11-1 – Evidence gaps**

	Evidence gap	Issue	Solution
1	LGV movements, purpose and goods type	LGV movements have increased significantly in recent years. It is often quoted that online shopping is the cause of LGV increases. However, little work has been undertaken to establish the true nature of LGV movements (freight vs servicing).	Work with central government and/or other STB to commission a study into the area, potentially using TfSE area as a sample area. Alternatively, a local TfSE study could be undertaken.
2	Freight origins and destinations and contents	HGV movements are based on Continuing Survey of Road Goods Transport (GB) which is a very simple sampling survey. Being able to understand freight movements at a more granular level will help influence strategic development and bring an understanding more on a par with passenger data.	Work with central government and/or other STB to commission a study into the area, potentially using TfSE area as a sample area. Alternatively, a local TfSE study could be undertaken.
3	Freight movements at gateways, especially origin and destination (in the UK)	Tonnage volumes through ports is well understood but how this translates to HGV movements varies from port to port. There is also very little information to understand the final destination of imports within the UK and where UK exports come from which would help to prioritise investment on the SRN to encourage more port centric logistics.	Work with the ports to undertake detailed surveys (or work with data gathering opportunities using port booking systems) to source more comprehensive data.
4	Vehicle fill and load	Much work has been undertaken focused on literature reviews and stakeholder surveys to understand empty running and load fill. However, there remains a variance in the degree to which empty running could be further reduced in reality and any efforts to quantify this is limited.	This could form part of an upgrade to the CSRG as mentioned in “evidence gap” number 2 above.
5	Wharves use	A report in 2007, “Aggregate Wharves and Rail Depots in South East England”, reviewed existing and potential capacity of active and inactive wharves and rail terminals in the South-East England Region, identifying constraints on capacity, proposed wharves and terminals that are safeguarded in Local	TfSE could work with port bodies (including the PLA) to assess the potential.

	Evidence gap	Issue	Solution
		Development Documents and recommended strategic sites that warrant safeguarding. This needs to be updated to be able to establish the opportunity for modal shift.	
6	Warehouse/distribution park	Through this study it is clear that a comprehensive understanding of the locations of current and pipeline warehouses in the region is limited vs potential demand.	TfSE could commission a detailed review of pipeline B8 developments, including specific location, type of build (e.g. speculative or purpose build for a specific user) together with existing developments in use, plotting these to track freight generators.

## 12 CONCLUSIONS AND NEXT STEPS

12.1.1. This study has involved a process of literature review, data analysis together with extensive stakeholder engagement. There are some clear outcomes which will need to be taken forward as part of the TfSE Transport Strategy. This chapter, pulls together some of key conclusions with a set of potential next steps.

12.1.2. The literature review undertaken by McKinnon (McKinnon, 2018) points to a tendency to favour options in managing freight and logistics on the technological and engineering side over softer managerial or operational measures. He claims there is likely an under-estimation of the potential logistical contribution to road freight decarbonisation. To some degree the findings of this study support this view.

12.1.3. Any freight strategy needs to be based on a range of potential interventions, from innovative, future ready solutions but also through effective management and well considered processes. The following Tables Table 11-1 and

12.1.4.

12.1.5. **Table 12-3** highlight a number of recommendations from this study.

**Table 12-1 – Recommendation 1**

Recommendation 1	Development of a freight strategy
Scope	This study has recognised that TfSE has a significant number of nationally significant gateways, and industries which are dependant reliant on freight. This combined with a growth population who need retail and service needs, means freight is a critical part of the TfSE economy and enabler to growth for the region. Reducing the barriers to freight and logistics efficiency will create an environment than can encourage growth across all sectors in of the TfSE economy. The value of logistics, and the current risks and opportunities has been developed as part of this study. The aim of the freight strategy would be to take the baseline work undertaken by this study to create a future focused freight action plan for TfSE.
Deliverable	Freight strategy and/or freight action plan which sets out the interventions and management actions required across the TfSE area, as well as the cost of undertaking these.

**Table 12-2 – Recommendation 2**

Recommendation 2	Freight engagement: promotion of best practice
Scope	As part of the freight strategy, consideration needs to be given on how to promote best practice – this may include: <ul style="list-style-type: none"> <li>■ Collaboration</li> <li>■ Data sharing</li> <li>■ Asset sharing</li> <li>■ Right vehicle right journey etc</li> <li>■ Consolidation</li> <li>■ Empty running/loading</li> <li>■ Route planning</li> <li>■ Network planning</li> <li>■ Driver training</li> </ul>

Deliverable	Freight engagement plan
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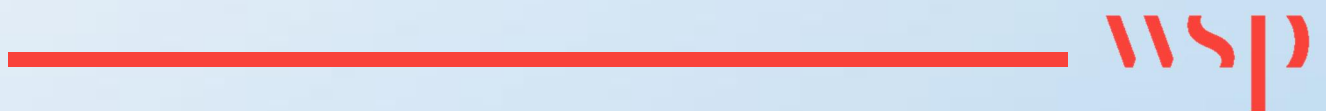
**Table 12-3 – Recommendation 3**

Recommendation 3	Local freight planning
Scope	<p>As well as a Freight Strategy that deals with the overall connectivity within and between local authorities - the rural and urban dimensions will need specific consideration. Tactics that may be considered as part of this toolkit may include:</p> <ul style="list-style-type: none"> <li>■ Consolidation centres</li> <li>■ Land use (national/ regional issue, local implementation), lorry parking and warehousing</li> <li>■ Retiming</li> <li>■ DSP/CLPs</li> </ul>
Deliverable	Rural and urban freight plan

- 12.1.6. There is a clear role for TfSE to work with its member authorities to guide freight policies at a local level, providing direction and support. TfSE needs to be conscious of the unintended consequence of local policy decisions. For example, a stakeholder interviewed for this study asserted that the London Lorry Control Scheme added 7.3 million extra miles for the 5 operators that were part of a study.
- 12.1.7. Finally, when considering the impact of freight interventions, it may be useful to consider the following objectives as a means to drive improvements to freight transport planning
- Freight Deintensification: reduce the volume of goods transported or the distance that goods are transported. This doesn't mean producing less. It could include moving goods in a more compact form (e.g. concentrated liquids), or co-locating businesses to reduce distances for goods;
  - Improve Vehicle Utilisation: reduce the number of vehicles (including wagons and trains) used/needed to transport remaining demand. Increase vehicle payloads through use of larger vehicles and/or improved capacity utilisation;
  - Improve Network Efficiency: reduce the impact of freight movement on congested networks, particularly at peak times;
  - Increase Network Capacity: increasing network capacity can be achieved in a variety of ways which, ultimately, could require new roads; and
  - Modal Shift: principally the movement of freight from road to rail or water.  
Access to funding eg Transforming cities fund: For TfSE this could support the development of Southampton and Portsmouth as key hubs, supporting their transport infrastructure to unlock some of the congested areas and improve the associated air quality issues.
- 12.1.8. Often when considering freight and logistics, the industry is often seen as problem to overcome. This study has shown that the industry has a great contribution to make to local and regional prosperity and therefore the development of the transport strategy needs to consider how the role of the freight industry can be enhanced to help deliver sustainable economic growth in the TfSE area.

# Appendix A

## STAKEHOLDER THEMES





# Appendix B

## SURVEY RESULTS





# Appendix C

## GATEWAY ANALYSIS







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# LOGISTICS AND GATEWAY REVIEW

Appendices







## Transport for South East

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# LOGISTICS AND GATEWAY REVIEW

## Appendices

**TYPE OF DOCUMENT (VERSION) CONFIDENTIAL**

**PROJECT NO. 70050793**

**DATE: MAY 2019**

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# QUALITY CONTROL

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# CONTENTS

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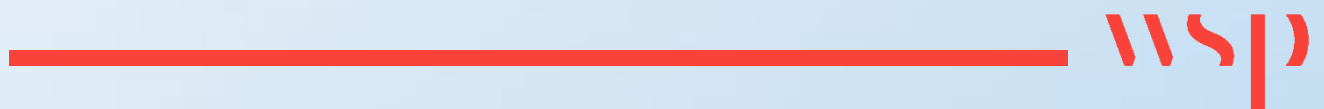
Appendix A: Stakeholder themes

Appendix B: Full survey results

Appendix C: Gateway analysis

# Appendix A

## STAKEHOLDER THEMES



## KEY THEMES IDENTIFIED BY STAKEHOLDERS

- 1.1.1. The following section details the themes identified by the stakeholders and builds on the results presented in Chapter 9 of the main report. The themes have been grouped using the headings illustrated below:

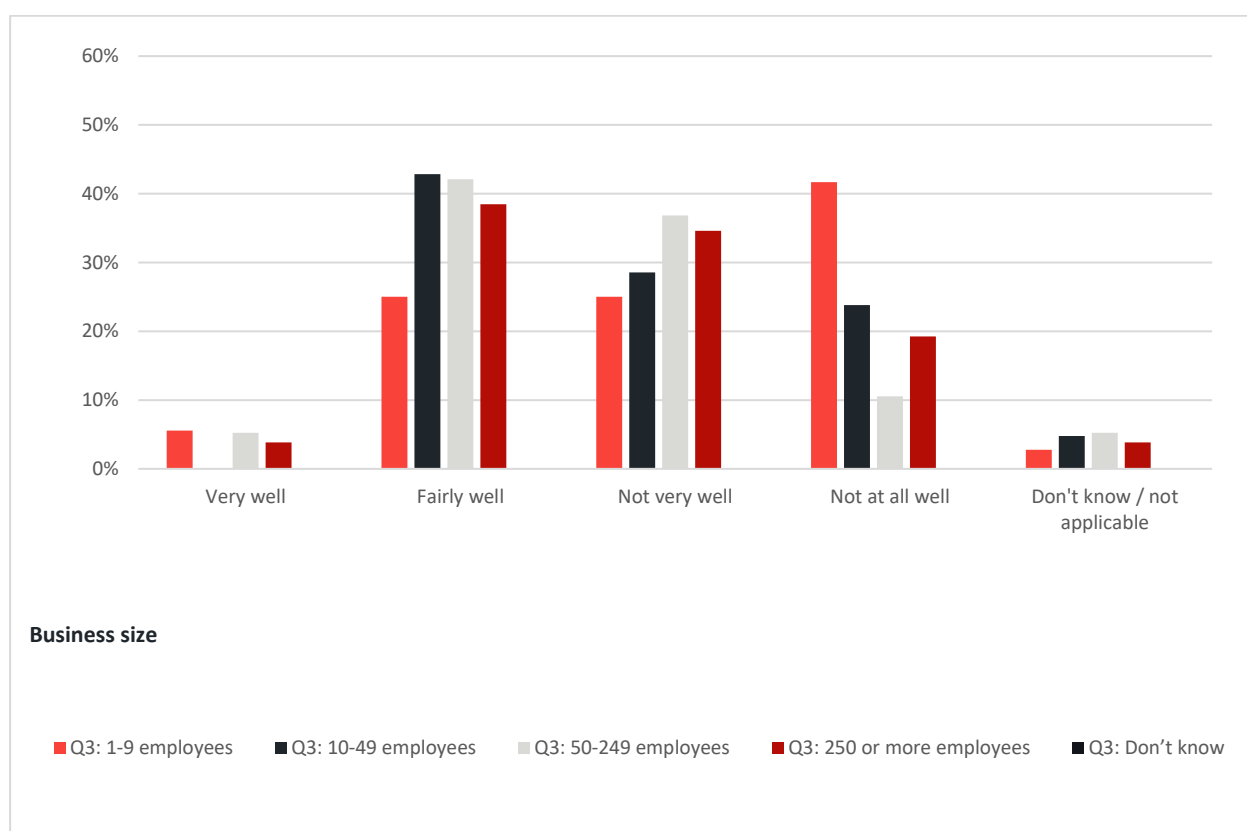


## PERFORMANCE OF THE NETWORK

- 1.1.2. 52% of respondents of the survey felt that the transport links in the TfSE area meet the needs of their business with regards to moving goods 'fairly well' or 'very well'. 42% felt the transport links didn't meet their needs (6% didn't know).
- 1.1.3. The survey results suggested that the network within the TfSE area meets the needs of businesses well in terms of directness of routes but the capacity of routes does not meet industry needs. Reviewing the survey responses, they suggest that small businesses are more likely to feel that journey times, reliability of journeys and capacity of routes do not meet their business needs more so that larger businesses, this is illustrated in
- 1.1.4.
- 1.1.5.

- 1.1.6. **Figure A-1.**

**Figure A-1 - Reliability of journeys by business size**



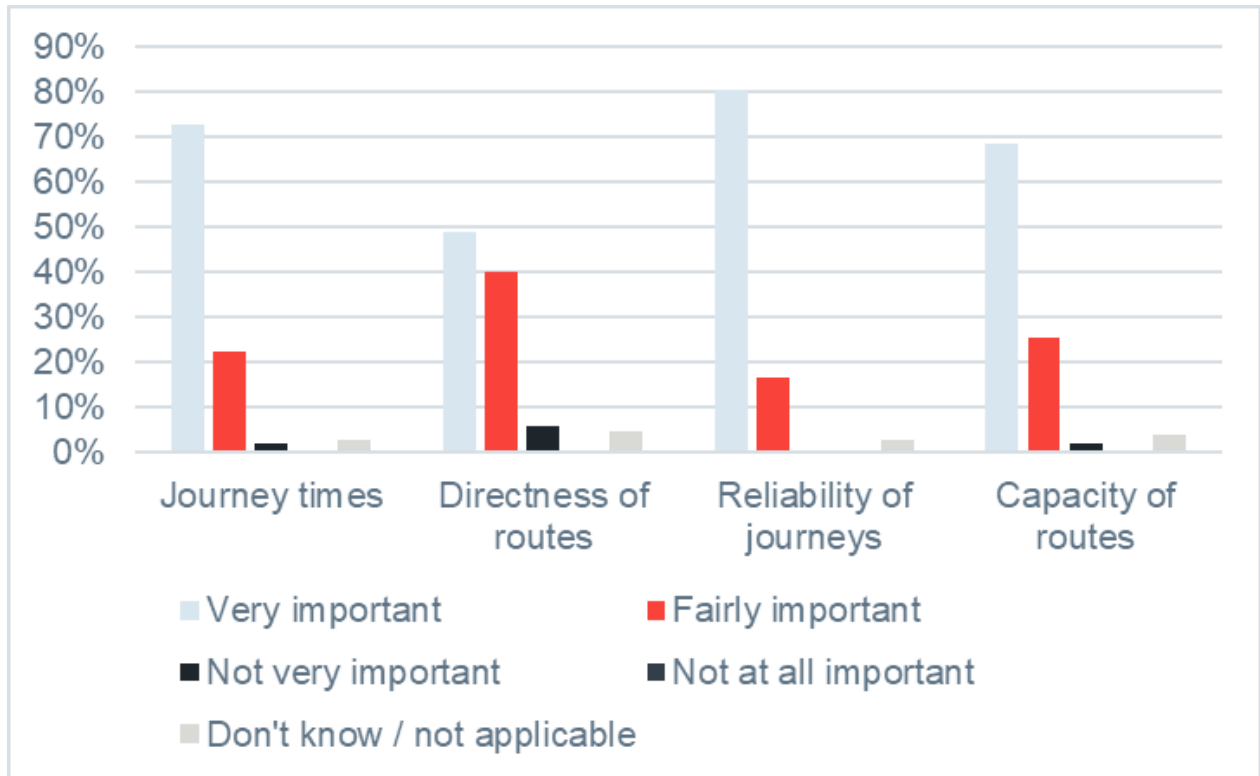
	Very well	Fairly well	Not very well	Not at all well	Don't know / NA	Total
Q3: 1-9 employees	2	9	9	15	1	36
Q3: 10-49 employees	0	9	6	5	1	21
Q3: 50-249 employees	1	8	7	2	1	19
Q3: 250 or more employees	1	10	9	5	1	26
Q3: Don't know	0	0	0	0	0	0



Total	4	36	31	27	4	102
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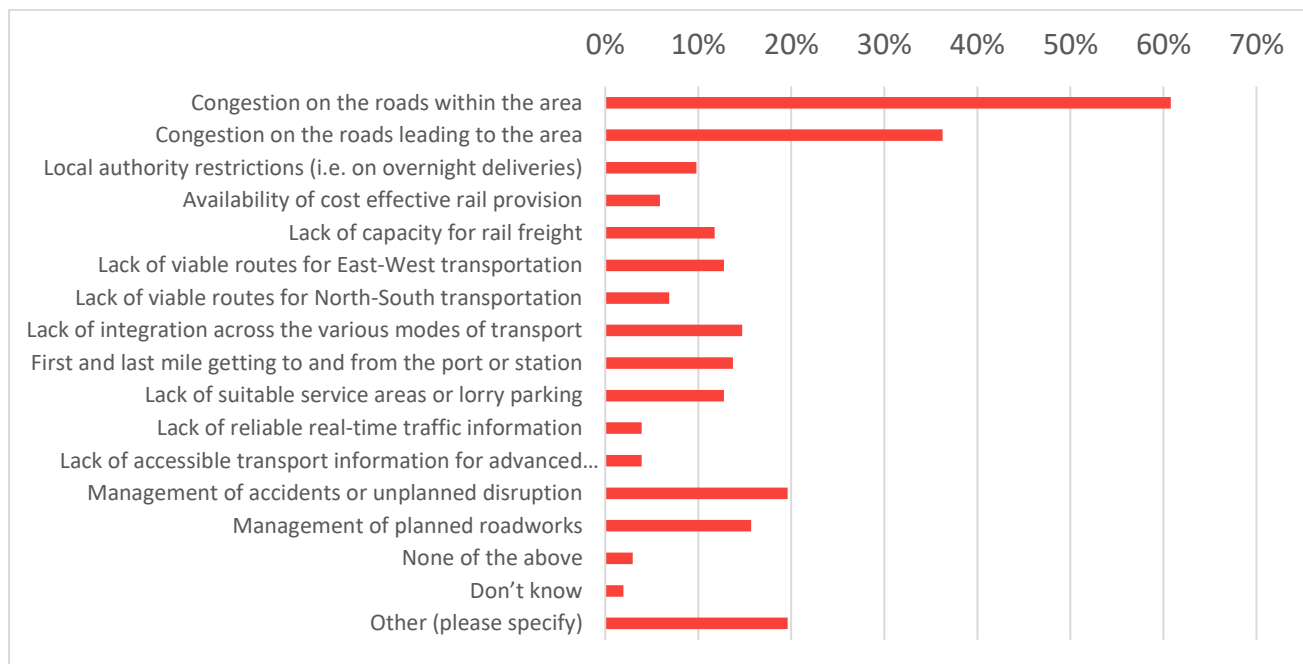
- 1.1.7. Building on developing an understanding of how the area is served, the 121s generated a couple of specific pinch points; however, these do not appear to be freight specific issues rather locations which have been identified more generally. It was noted in discussions that that the priorities for infrastructure for freight is a need to focus on reliability of goods movements, resilience of the network rather than speed per se. The management of roadworks and accidents was raised a number of times, and noted that stakeholders felt that this is about the culture of different interested parties working together as well as having the data and technology to share knowledge in a timely way.
- 1.1.8. In discussions, the following priorities for the freight industry were mentioned a number of times:
- Free flow
  - Congestion free
  - Reliable journey times (need to be able to plan)
  - Faster would be nice but not as important as reliable
  - Resilience
  - Electricity and power capacity (warehousing and EV potential)
  - Long term investment towards renewables and sustainable growth.
- 1.1.9. Whilst feedback suggests that reliability is key speed cannot be ignored. In meetings with operators they highlighted that an ideal optimised network location choice is based on travel time not necessarily distance, speed and reliability rather than the technical distance. This was also reflected in the Survey as can be seen in the Figure A-2. Examples of why reliability is crucial were given by stakeholders, with some industries only holding 5-10 hours stock in some highly customised items. Whilst contingency is often in place, that costs and builds in inefficiency.

**Figure A-2 - How important are each of the following to the needs of your business with regards to moving goods?**

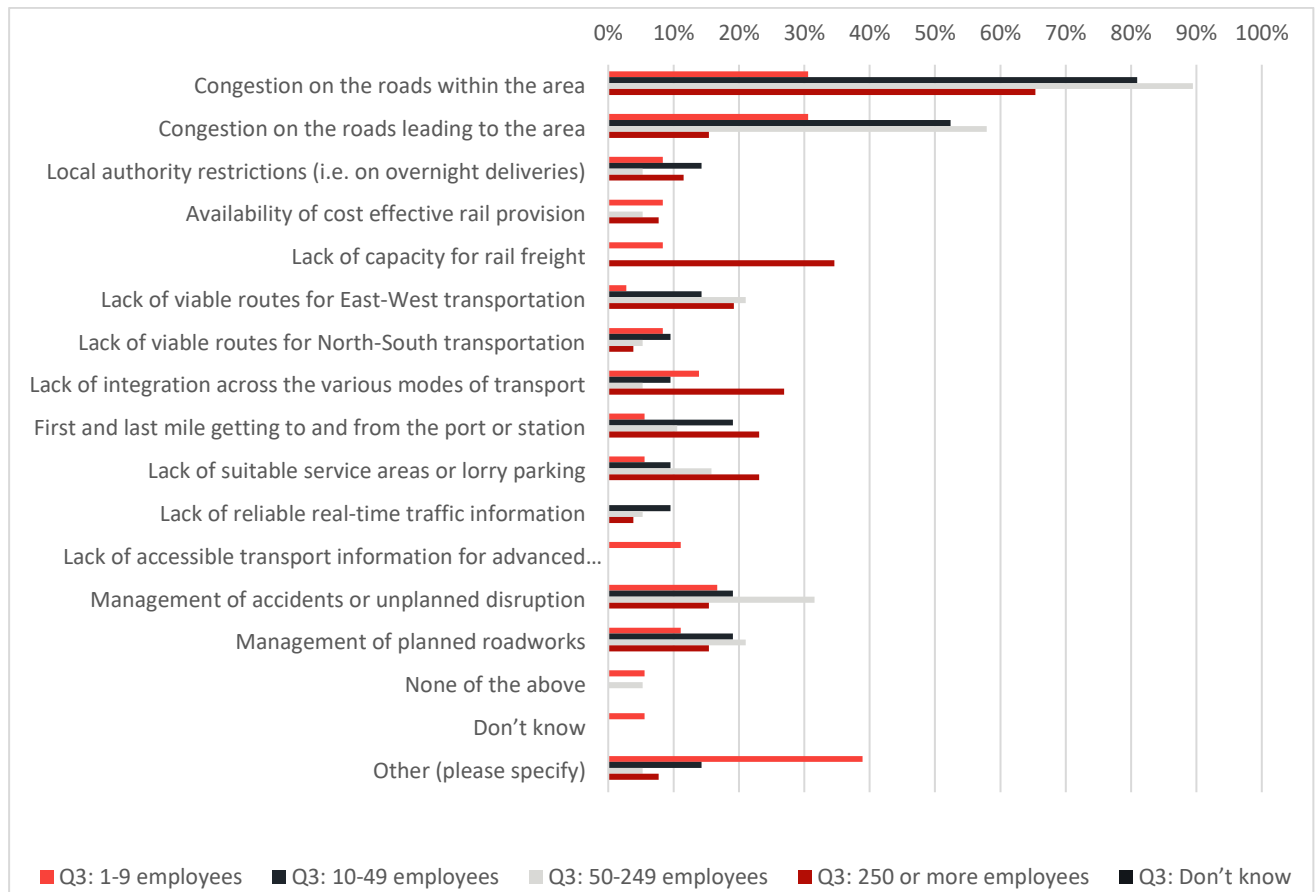


- 1.1.10. When discussing the opportunity for TfSE, some stakeholders felt there are opportunities within the TfSE are to draw a new economic map if an infrastructure is created that allows freight operators to serve industrial sectors in the region from within the region.
- 1.1.11. Operators highlighted that the link between transport investment and productivity is well established; Transport impacts such as travel time savings, cost reductions and greater reliability impact on users such as businesses and commuters. These in turn generate economic benefits through business efficiency; business investment and innovation; agglomeration; and labour market benefits among others. Some felt that the standard transport appraisals monetise the value of transport impacts but do not capture all of the wider economic impacts and hence there is under-investment relative to the real economic gains that could be realised.
- 1.1.12. The following charts show the response to the question “Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area?” based on factors such as business type, size of business, location and modes of travel. All reinforce that congestion, both within and leading to the TfSE area, is the key challenge.

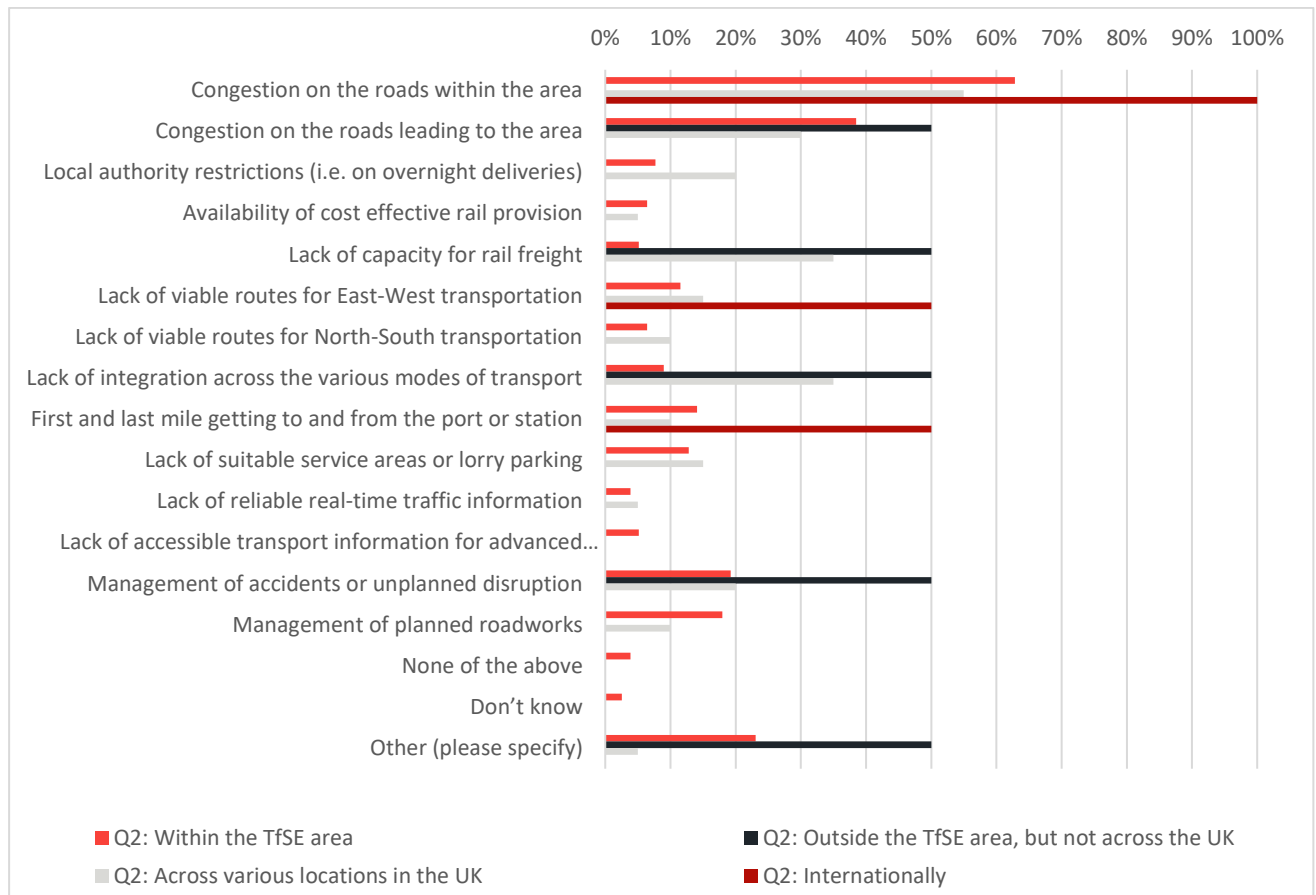
**Figure A-3 - Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area?**



**Figure A-4 - Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area by size of business**



**Figure A-5 - Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area by where transportation occurs**



**Figure A-6 - Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area by company type**



1.1.13. In summarising the impact on business of these challenges stakeholders mentioned, both in the survey and in discussions:

- Increased congestion
- Delayed delivery / journey times
- Increased costs
- Hinders growth and profitability
- Lack of reliability
- Difficulties with planning
- Environmental impact

## FUTURE TRENDS

1.1.14. In sessions with stakeholders, many found it difficult to predict the longer-term future of the freight and logistics industry. It was noted that some of the trends currently impacting the industry could provide insights into how the industry may change in the future. Trends in online retail and how this has impacted traditional retail outlets and urban centres has had a knock-on impact on freight and logistics, impacting land use needs, response times and vehicle types. Changes in customer behaviours (both business to business and business to consumer) will have a continual impact on freight and logistics.

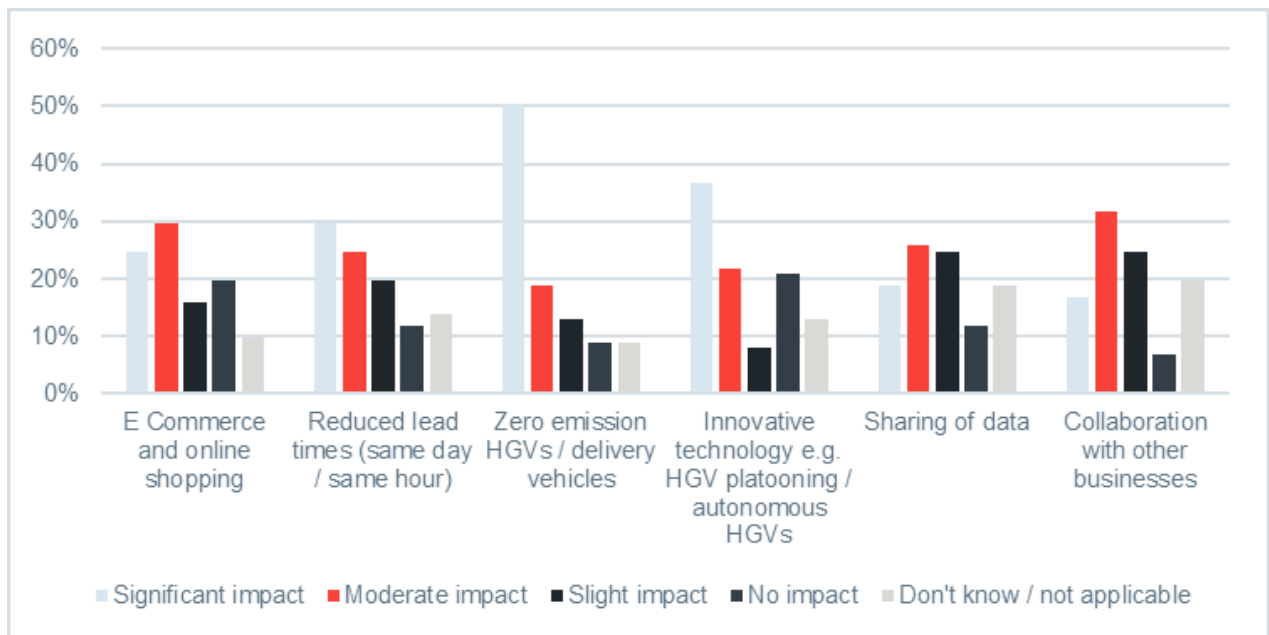
1.1.15. That said the survey results provided some further insights into how stakeholders feel about the future. Generally, in terms of the future whether there will be more or less movements of products or



the same or different, the results were inconclusive, highlighting a level of uncertainty about how businesses will look in the future. 73% of business say themselves staying in the same locations they currently were in.

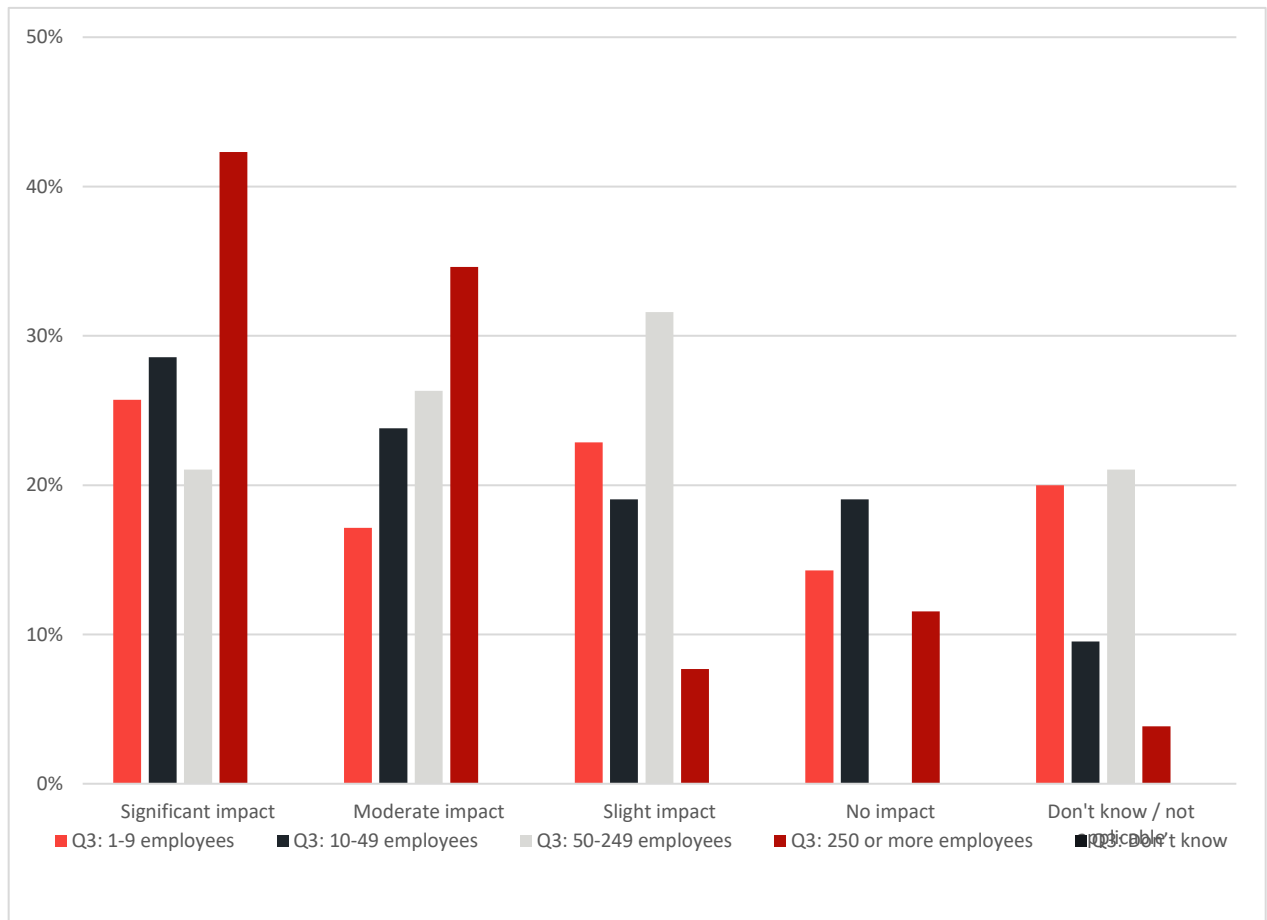
When asked about what impact the following trends will have on their business before 2050, the results were interesting with low emission vehicles being seen as having the biggest impact but collaboration having a lesser impact. This to some extent contradicts discussions with operators who suggest collaboration and data could have a significant impact on logistics going forward.

**Figure A-7 - What impact do you think the following trends will have on your business before 2050?**



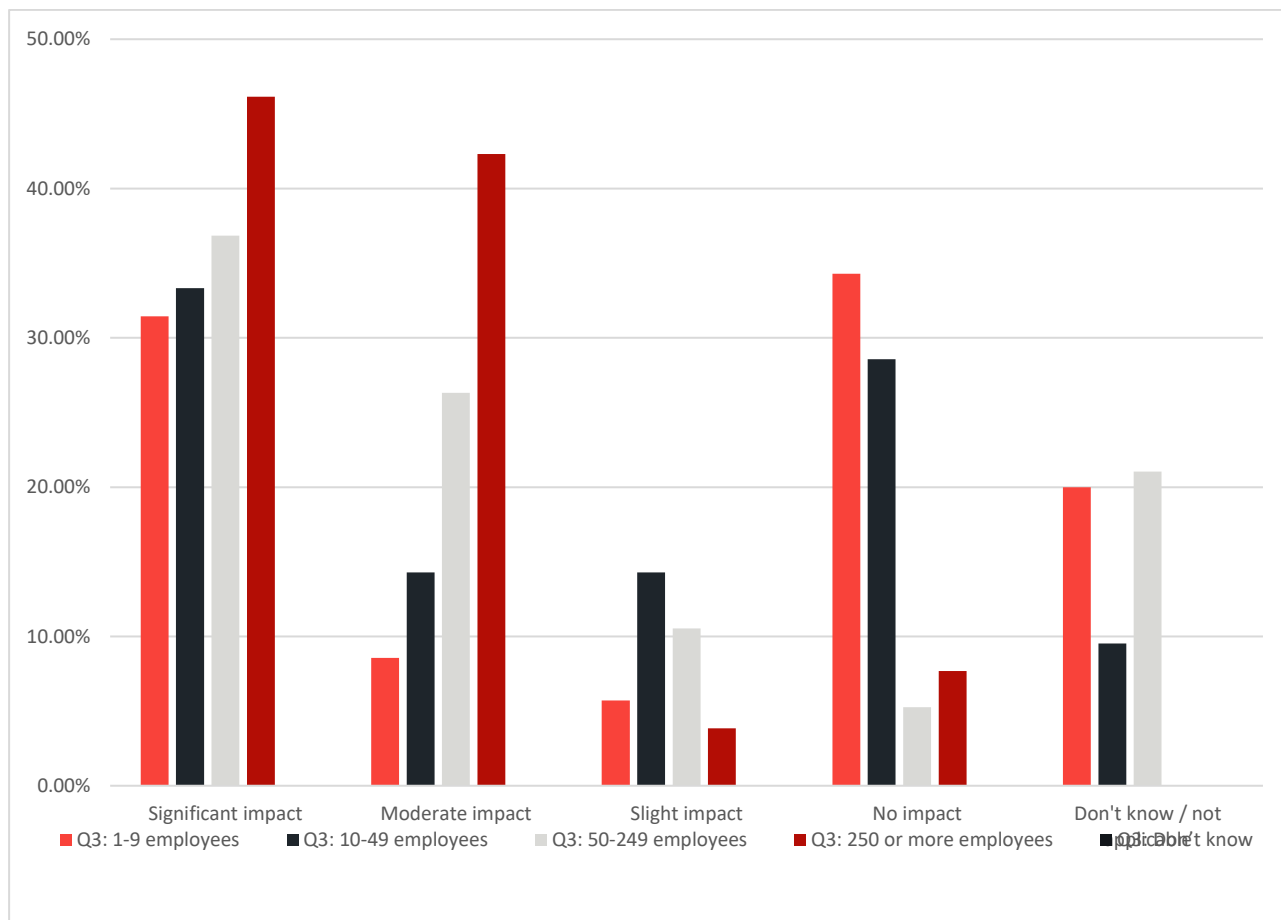
- 1.1.16. In total 69 per cent felt that zero emission HGVs / delivery vehicles would have a significant or moderate impact. Interestingly larger businesses were more likely to think that reduced lead times and innovative technology would have an impact. The following graphs break this down by group in some detail.

**Figure A-9 - Reduced lead times (same day / same hour) by business size**



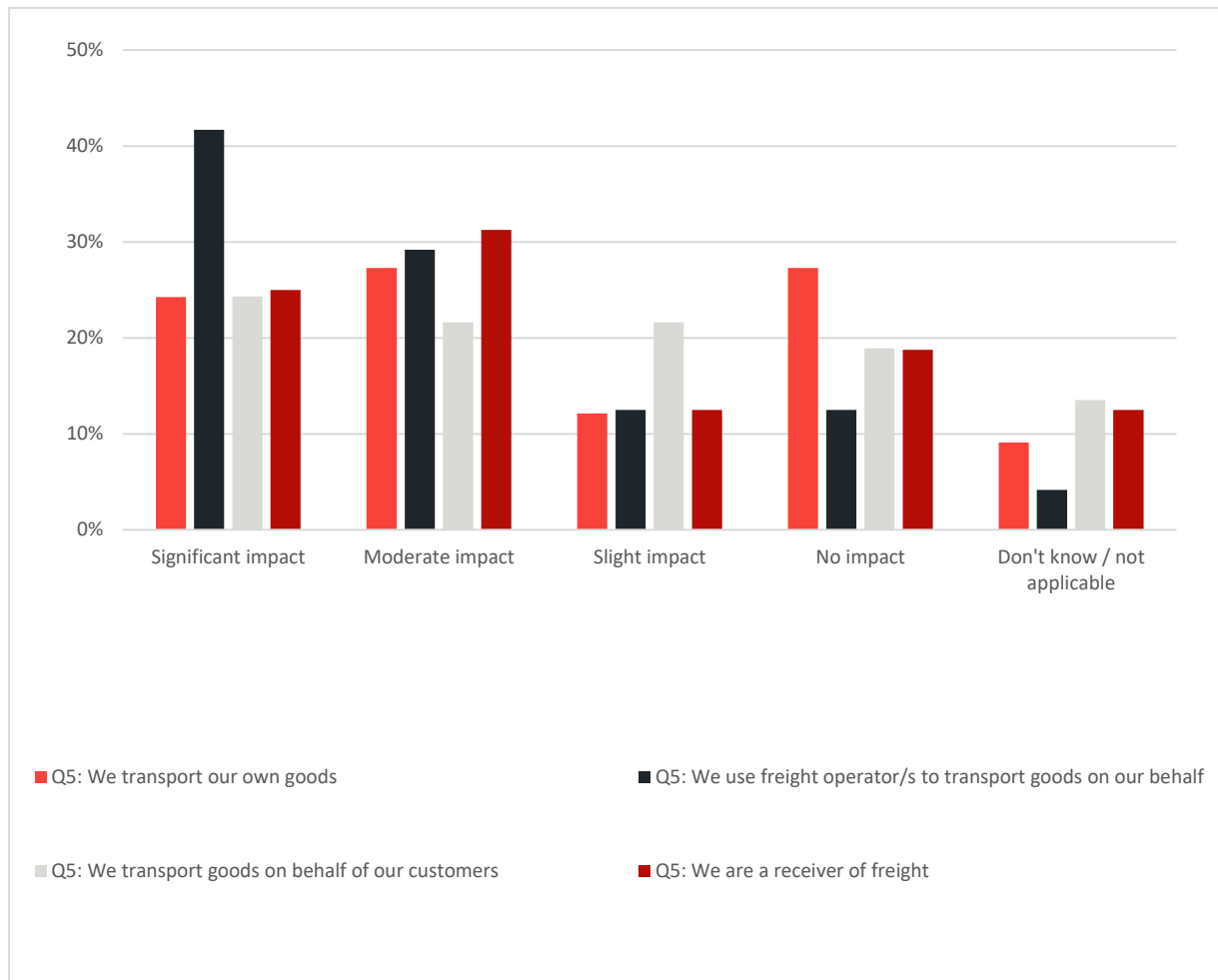
	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q3: 1-9 employees	9	6	8	5	7	35
Q3: 10-49 employees	6	5	4	4	2	21
Q3: 50-249 employees	4	5	6	0	4	19
Q3: 250 or more employees	11	9	2	3	1	26
Q3: Don't know	0	0	0	0	0	0
Total	30	25	20	12	14	101

**Figure A-9 - Impact of technology by business size**



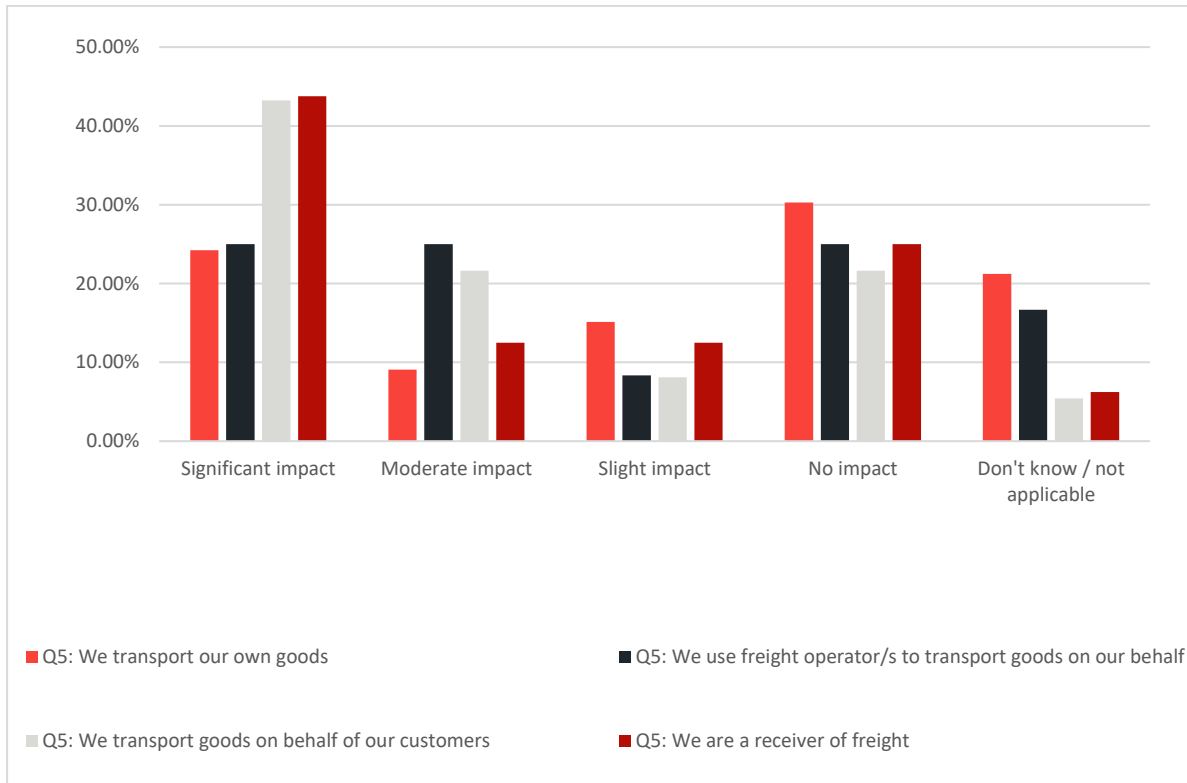
	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q3: 1-9 employees	11	3	2	12	7	35
Q3: 10-49 employees	7	3	3	6	2	21
Q3: 50-249 employees	7	5	2	1	4	19
Q3: 250 or more employees	12	11	1	2	0	26
Q3: Don't know	0	0	0	0	0	0
Total	37	22	8	21	13	101

**Figure A-9 - Impact of E commerce and online shopping by business type**



	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q5: We transport our own goods	8	9	4	9	3	33
Q5: We use freight operator/s to transport goods on our behalf	10	7	3	3	1	24
Q5: We transport goods on behalf of our customers	9	8	8	7	5	37
Q5: We are a receiver of freight	4	5	2	3	2	16
Total	20	22	13	18	8	81

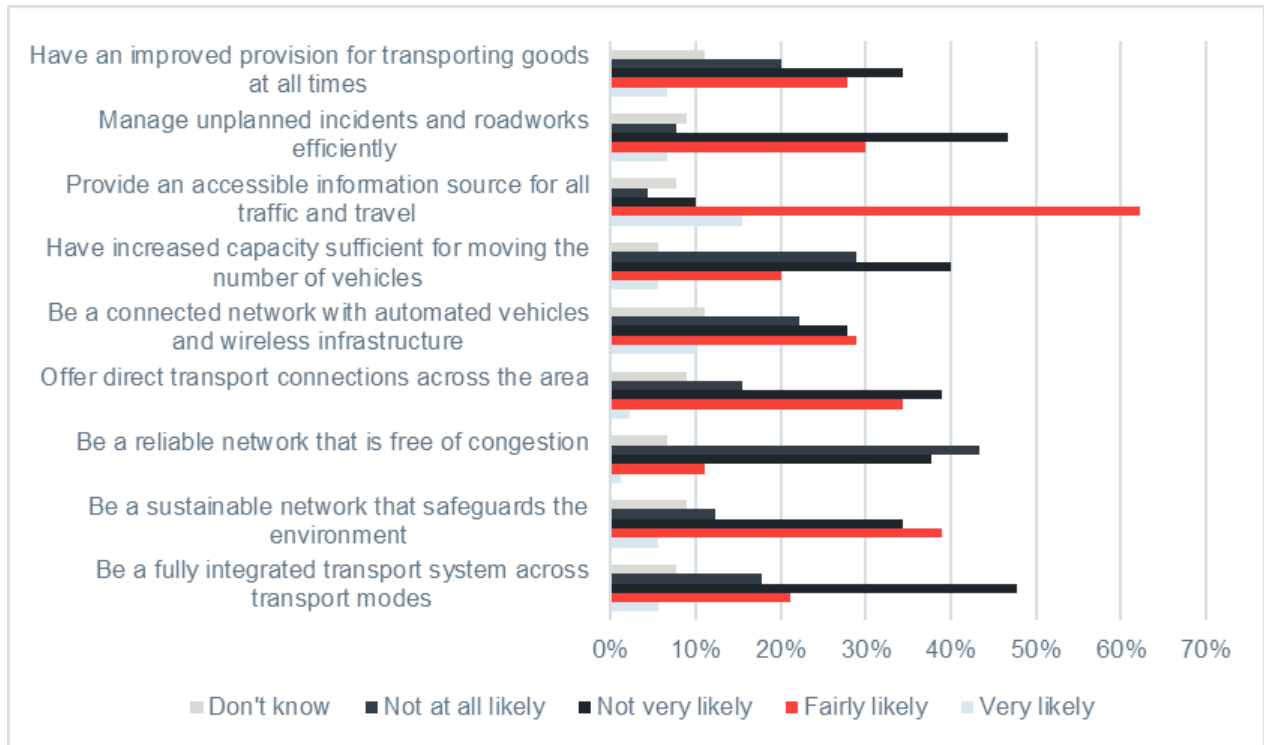
**Figure A-10 - Impact of technology by business type**



	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q5: We transport our own goods	8	3	5	10	7	33
Q5: We use freight operator/s to transport goods on our behalf	6	6	2	6	4	24
Q5: We transport goods on behalf of our customers	16	8	3	8	2	37
Q5: We are a receiver of freight	7	2	2	4	1	16
Total	28	15	8	20	10	81

1.1.17. In the survey, respondents were asked to think about the performance of the transport network in the area and how likely is it that it will change.

**Figure A-11 - Thinking about the performance of the transport network in the area, how likely is it that it will change in the following ways?**



- 1.1.18. There was some negativity about what the network will look like and whether there will be improved provision for transporting goods, but there was a belief that would be better information available for traffic and travel.
- 1.1.19. In discussions, stakeholders felt that whilst there have been some radical changes of the last 10 years, some felt that the future will be through a process of evolution rather than revolution.
- 1.1.20. There was a recognition that there will continue to be environmental and economic drivers of change. If commercial factors are the driver then saving fuel and new fuels will be the driver, if there is a consumer 'enlightenment' regarding the environment, then we might see smaller packages, less waste and consolidated deliveries. From a retail perspective two key retail trends came up in discussions:
- Online – an online sale takes 60% more space on a like for like sale because of the need for packing benches on each site as you “deconsolidate” i.e. break things down to smaller routes. In addition, 25 vans are needed for every 44-tonne vehicle and therefore this has and continues to have an implication on congestion.
  - Decline of store square footage in towns and the new role of town centres. Becoming less retail centric and more community centric. But either way there still needs to serve a supply service.
- 1.1.21. Stakeholders described that both of the above trends have huge impact on transport and neither are being planned for sufficiently. For example, these changing needs, and the introduction of Clean Air Zones (CAZ) etc could result in a move back towards smaller local distribution centres and reflects more local daily shopping rather than weekly shopping (online or in store).
- 1.1.22. Stakeholders discussed the added pressure of more stringent emissions requirements in the future, there is likely to be more freight consolidation centres service into London and whilst decanting into

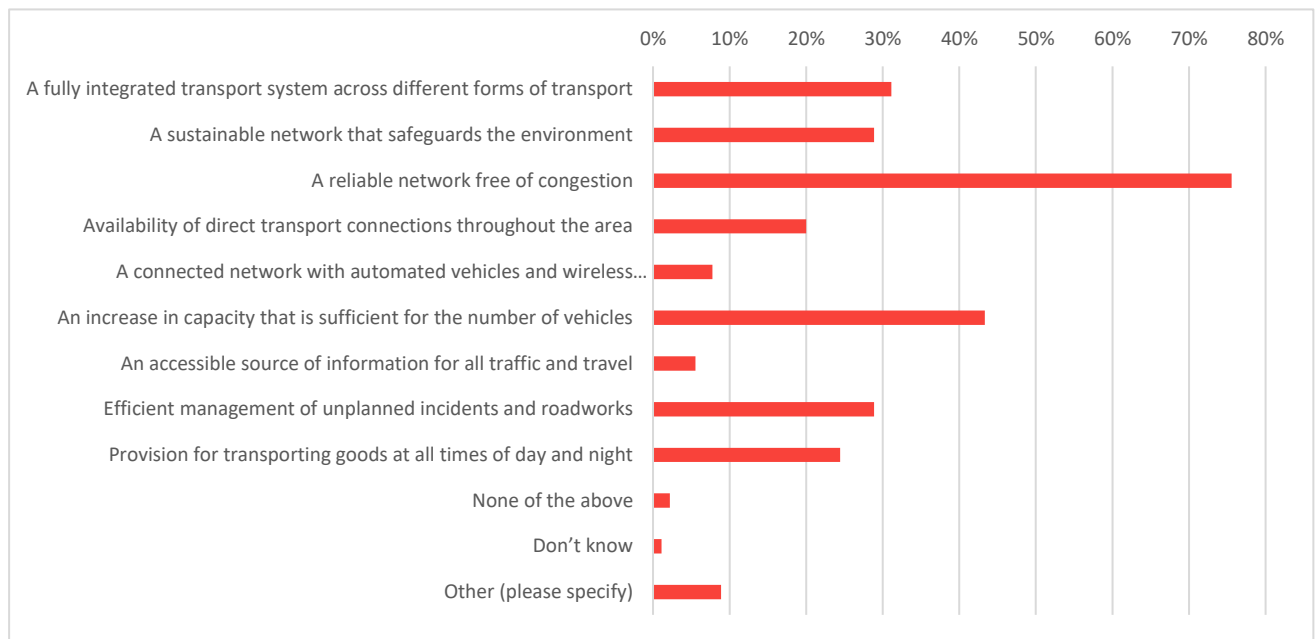
smaller “cleaner” vehicles can help air quality it put pressure on congestion and land use. This is starting to be seen in other cities outside of London.

- 1.1.23. In interviews, stakeholders felt that given the changes facing the industry, the future of freight transport would be dominated by customers demanding faster response times (aided in part of the growing ‘Sharing Economy’). Discussions suggested that:
  - Assets (vehicles and warehousing) would increasingly be leased rather than owned
  - They would be data-driven operations
  - There is an opportunity for community collaboration – a shared economy where people can use data to make smarter delivery choices
- 1.1.24. Exploring the future supply chains in interviews, there was a mixed view; One view suggested that supply chains will lengthen rather shorten which will allow for greater linkages to allow for consolidation, facilitated by the sharing economy. However, in some businesses such as car manufacturing, supply chains have been moving to overseas low-cost centres of production. That’s said, changes in production eg autonomous production could mean that production is brought closer to the customer, reducing transport costs and risk. This could mean a need for more land needing to be available to allow for a focus on localised, high tech production which lends itself to any manufactures.
- 1.1.25. Stakeholders identified that trends in the construction sector are changing the construction logistics. Modern building techniques are changing with moves to modular construction meaning that whilst building off site does mean there is some fresh air moving around it does reduce traffic. Some elements of construction, such as foundations little else you can do other than used aggregates are unlikely to change. Focus is on developing products that are longer lasting, lighter, reliability of supply allowing for more efficient transport solutions. But for this to happen we will need much more reliable network.
- 1.1.26. Feedback from discussions suggested the basic principle of freight is still the same from 30 years ago – the volume of goods we need is the same (or increasing) and there will still be a need lorries and vans. This was also reflected in the survey results.
- 1.1.27. The Survey highlighted that alternative fuelled vehicles is likely to impact the operations and review this in more detail in the interviews, there was little consensus of the fuel solutions of the future for freight. There was agreement that whichever fuel becomes more prominent, there will be a for need the infrastructure to support it together with the energy capability. Stakeholders felt that electric would prevail in the urban environment where smaller vehicles can be used but inter urban electric is unlikely. However, given investment requirements from both the public and private sector, any change would be more of an evolution than a rapid transition to a favoured fuel type (away from diesel).
- 1.1.28. Whilst there is a move towards smaller loads, it was thought that there would still be the need for bulk transport: therefore, rail and HGVs would still be required and would need to be provided for and interchanges provided. However, changing mode within a chain or breaking bulk adds costs which needs to be reflected in the cost of delivery. Cost of delivery was a reoccurring them and is noted as a key theme.



- 1.1.29. Stakeholders noted that even with changes to other modes, the first mile and last mile will still need roads.
- 1.1.30. The survey looked at future priorities for businesses and whilst the future trends are difficult to predict, the responses were clear as to the needs of operators.

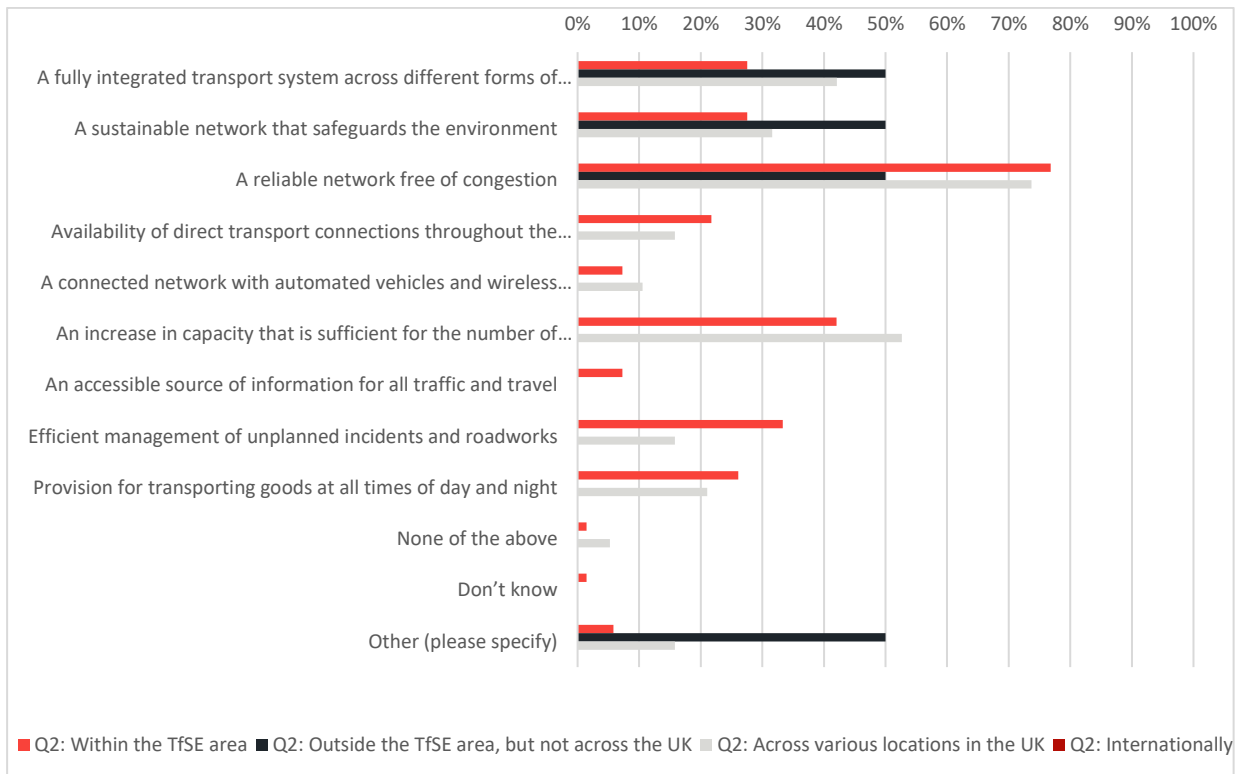
**Figure A-12 - As a business, what are your top three priorities for improving the movement of goods in the area?**



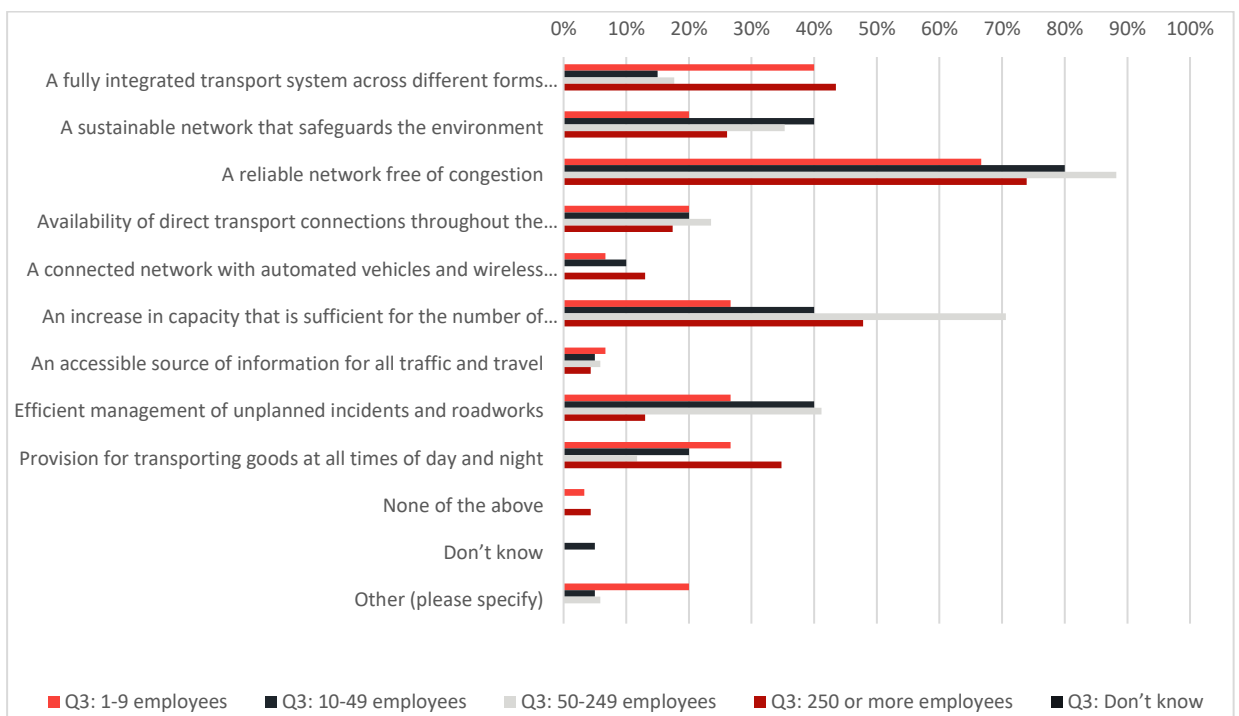
- 1.1.31. The following charts show the response to the above question “as a business, what are your top three priorities for improving the movement of goods in the area” based on factors such as business type, size of business, location and modes of travel. However, regardless of group, a reliable network free of congestion was the top priority across all groups. Interestingly over 50 per cent of businesses that use rail or water chose a fully integrated transport system as a priority. 40 per cent of these businesses also selected provision for transporting goods at all times. 8 responses to ‘Other’ and these were highlighted as

- 4 stated that their priority was a fixed link between the Isle of Wight and the mainland
- 1 person each stated that their priority was: increased capability on the rail network; rail and water to be supported by Government; east-west links; and long-term planning for the road network to accommodate HGVs

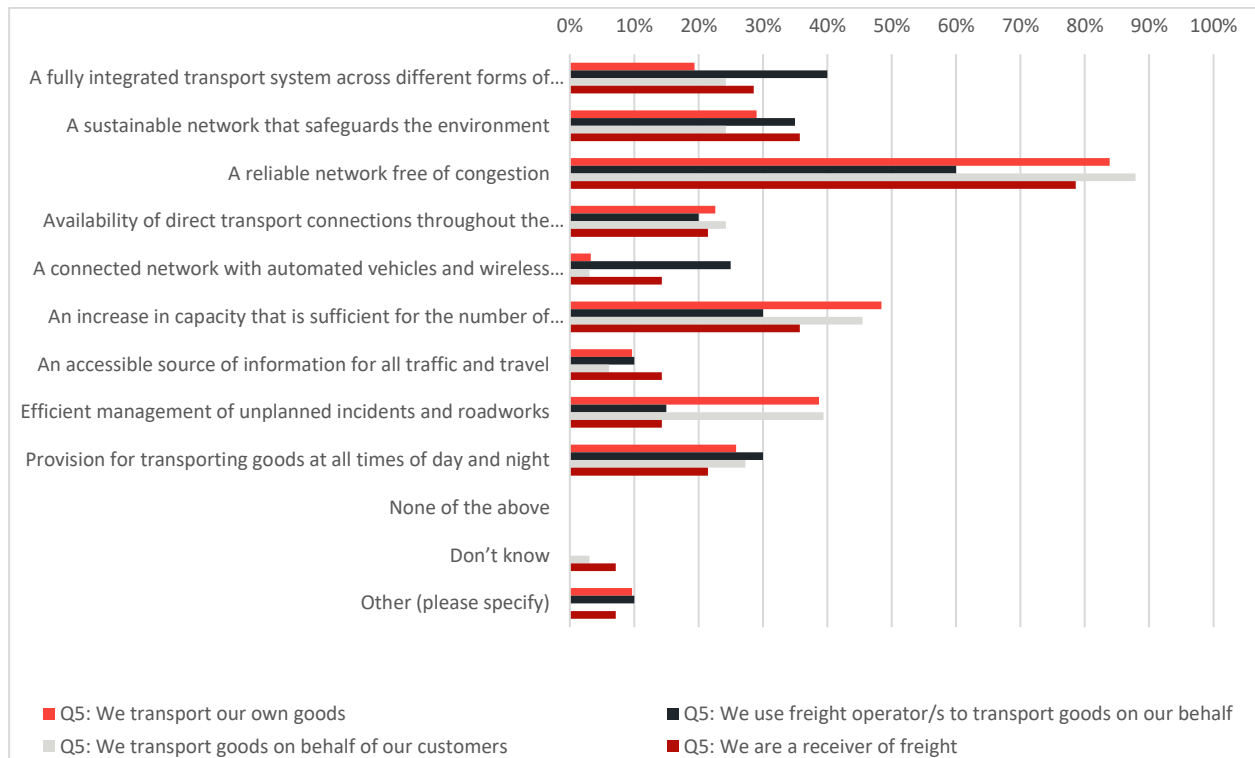
**Figure A-13 - As a business, what are your top three priorities for improving the movement of goods in the area broken down by type of movements**



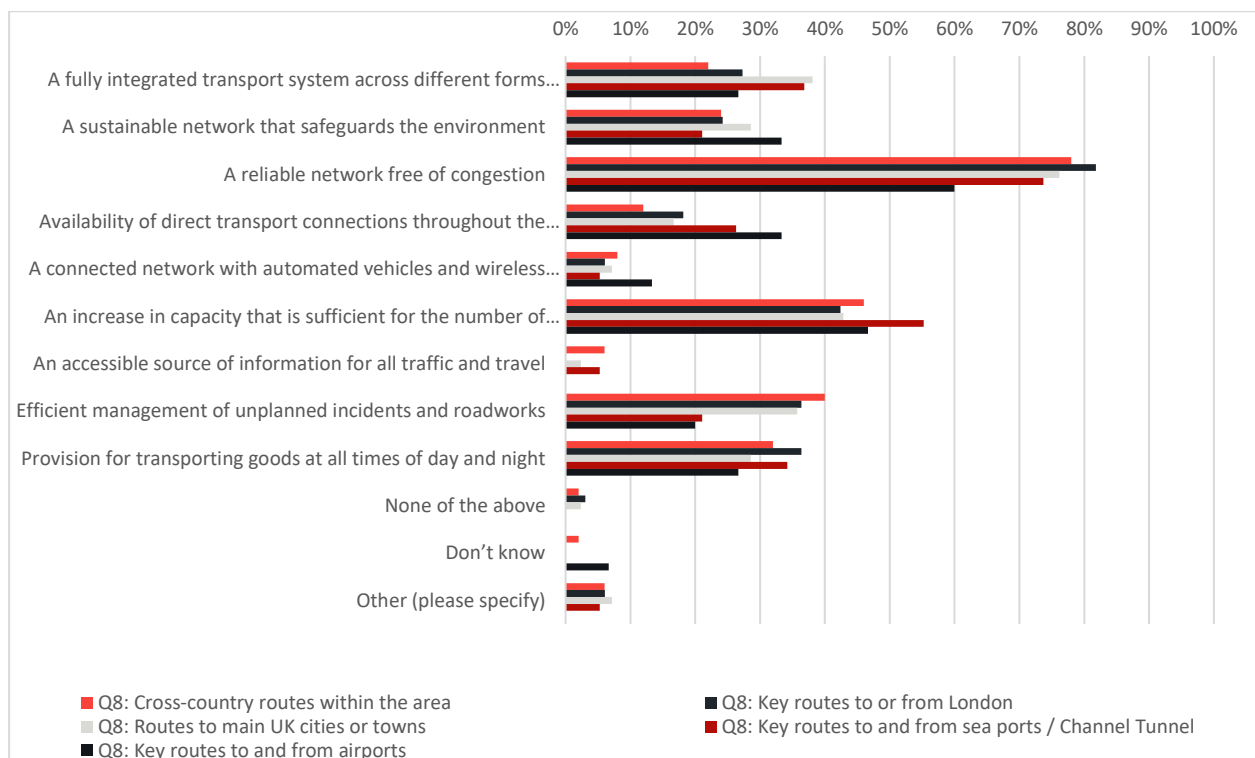
**Figure A-14 - As a business, what are your top three priorities for improving the movement of goods in the area broken down by size of business**



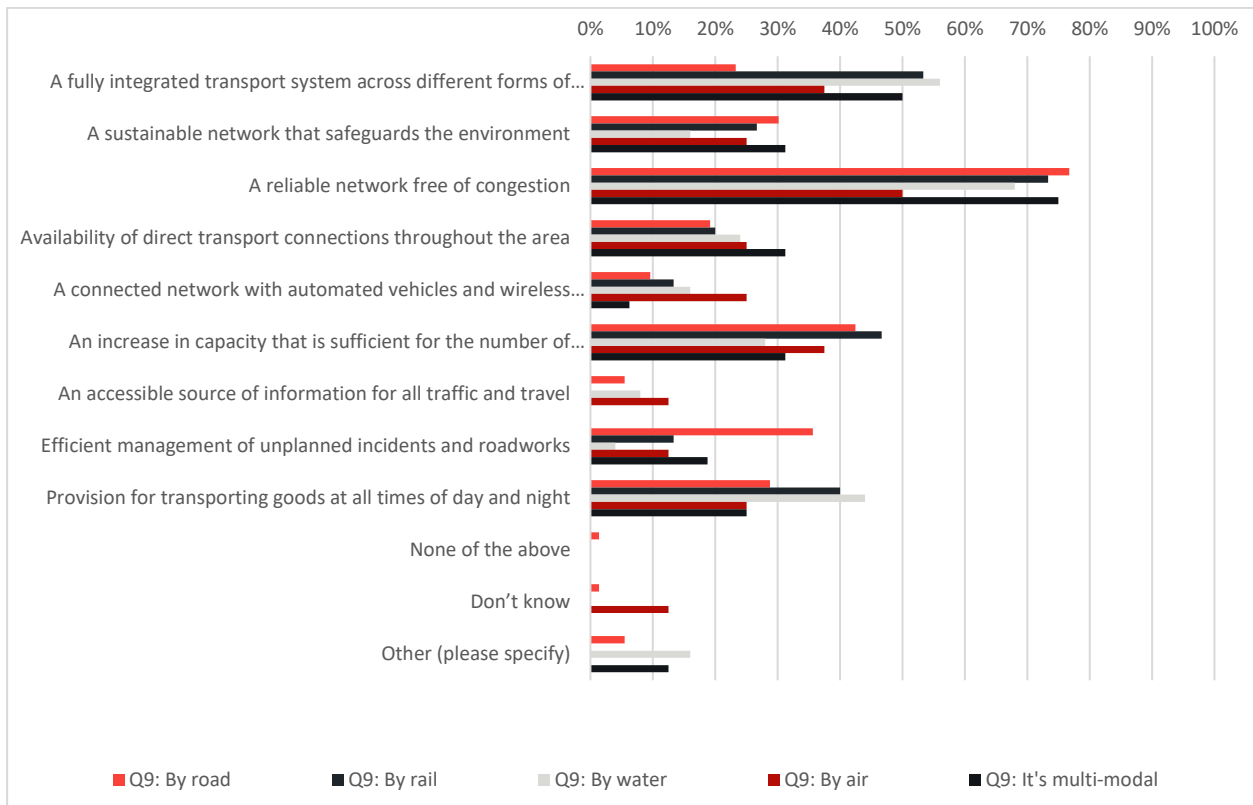
**Figure A-15 - As a business, what are your top three priorities for improving the movement of goods in the area broken down by type of business**



**Figure A-16 - As a business, what are your top three priorities for improving the movement of goods in the area broken down by routes used**



**Figure A-17 - As a business, what are your top three priorities for improving the movement of goods in the area broken down by mode used**



- 1.1.32. Feedback suggested that design of policy and infrastructure needs to be based on allowing for a level of uncertainty and to build in flexibility.

## INNOVATION AND TECHNOLOGY

- 1.1.33. The survey indicated that operators felt that innovation and technology would start to impact their operations Figure A-8. However, in more detailed discussions it was generally felt that platooning is likely to become a reality by 2050 so need to ensure the infrastructure is suited to this technology. Some felt that this in technology is quite niche, with not many companies having the right travel profiles to gain benefit as it is understood at the moment. Autonomous vehicles could, stakeholders felt, be seen on major trunk roads and so could drive a need for more local distribution centres. Whilst stakeholders felt that fully autonomous HGV's would not be seen the next 10 years, the industry could make use of some of the features of greater autonomy.
- 1.1.34. The following highlights a number of technologies mentioned by stakeholders which may start to impact the industry:

- 3D printed boxes “pack perfect” can help – this is being trialled by UPS and offers to save 40% of lorry space.
- If the consignments and vehicle sizes were getting smaller, the pressure on the road network would only become greater. Therefore, traffic management systems would be required and increasingly connected to the automated vehicles
- Drones have been floated as option, but this will lose the human effect of delivering a parcel, a driver (human) can function as a brand ambassador - better than something like a drone. Other options such as pipelines need also the be considered as part of the mix.

- The main means by which improvements will be made (from an efficiency perspective) is through better engines – fuel economy. Improved Euro standards will be achieved which will also allow for improvements in MPG.
- Technology will allow for the better use of KPIs and better sharing of data to allow for efficiencies to be made as well as environment for greater collaboration through the next generation of pallet exchanges.
- Some felt that there should be a transition to a position where there is a move to focus manufacturing processes to reduce haulage movements.

1.1.35. Decisions on fuel types to maintain operational viability (in view of CAZ and ULEV zone developments) are also challenging the industry, with concerns that battery technology was still slow to develop and even lithium ion batteries were thought to have an environmental impact during their manufacture, or indeed extracting lithium from overseas sources. Some felt that hydrogen shouldn't be dismissed in favour of EV.

## **FREIGHT DEMAND**

1.1.36. The survey highlighted the potential impact of ecommerce on the industry. In discussions, stakeholders believed that consumer behaviour (and economy) is the driver of change. The Amazon impact on customers has meant that deliveries are faster and cheaper now – this has led to customer expectations changing. The demand for same day delivery may have reached saturation in terms of time (i.e. we can't achieve much better than same day?). But in terms of number of deliveries, demand could continue to rise.

1.1.37. There was some consensus that Government should consider how it can incentivise both the public and operators through regulation to encourage more responsible delivery/consumer choices, i.e. paying less for a delivery that is consolidated but takes longer or a delivery that is delivered more sustainably by a clean fuelled vehicle.

1.1.38. In consultations with some stakeholders they felt that a better understanding is needed about the value of freight passing through the region rather than just within it. This may have a bearing on how smart road pricing could be used to lever value and divert freight or attract logistics companies to base themselves in a particular location.

1.1.39. Whist freight should be considered in all areas, discussing particular challenges, operators felt that in urban management a well thought out strategy needs to be considered as this filters throughout the wider supply chain.

## **PEOPLE CHALLENGES**

1.1.40. Whilst not specifically investigated in the survey, discussions highlighted that some challenges also present a potential opportunity for the region, this includes the current skills shortage and the changing future skill needs. Access to workers is a vital element of the operation of any business. It is not only important that there is a large labour market within the businesses' catchment area; it is also important that the workers are suited and qualified for the jobs on offer at an appropriate cost to the firm.

- 1.1.41. Concerns were raised about a shortage of skilled labour; this might see a rise in innovation and technologies at warehouses which will fill the void through new technology. Some felt that because of the skills shortage in the industry, including drivers, the ripple effect has meant it is an employee's market. Many workers are leaving for larger companies such as Amazon which offer higher reward. This has resulted in challenges for medium size companies that cannot compete.
- 1.1.42. There was a recognition that the reverse may also be true that whilst some roles may no longer be needed there may be a shift in high skilled workers being required as a result of new technology coming online and the need to operate this.
- 1.1.43. The reason for the national skills shortage in Class One drivers were given as:
  - Entry point too late (21)
  - Insurance for newly qualified drivers is too expensive.
  - Driver training costly 3-5K needing to be paid in advance of getting a job.

## **FREIGHT AWARE PLANNING**

- 1.1.44. Many stakeholders felt that UK planning regulation has not kept pace with the increase pace of change in the logistics industry. For example, until the revised NPPF there has been no statutory requirement within planning regulation for developers or operators to provide marshalling and lay-over parking related to logistics "hot spots" or port approaches. This has led to an overspill into the surrounding road network – the cause of so much unregulated parking to the detriment of residential communities. With developers seeking to maximise site cover for big warehouses often working over three shifts, under the NPPF highlights the need for an on-site or close-by secure goods-in marshalling area and accommodation for drivers' rest periods which can last from 9 to 45 hours. Depending on the location, this might involve providing truck parking on or near the distribution "hot spot" for 25% of the daily vehicles flow. It was noted that the planning authority is often different to the highway authority – silo mentality rather than thinking about the whole infrastructure needs.
- 1.1.45. In discussions there was a common theme that more 'freight aware' planning decisions are required from planning authorities, transport authorities and the planning inspectorate. As part of this consideration is needed about how to have more flexibility over future land use.
- 1.1.46. It was consistently by stakeholders in interviews noted that national and local planning policy was a constraining factor, particularly with the way new employment sites and warehousing can wait a long time (12 month waiting list) for utility infrastructure to be delivered, utilities and power from the national grid are key and need to be embedded early into the planning stage.
- 1.1.47. Some stakeholders suggested that training for planners is needed. Local planners need fundamental understanding of logistics. There is a push for housing but there isn't a supporting infrastructure around it, without doing this there will be unintended consequences for freight and logistics.
- 1.1.48. Summarising the feedback, the list of asks from the industry can be summarised as follows:
  - There needs to be more recognition of freight in transport planning. The focus tends to be almost solely on moving people.

- The National Planning Policy Framework (NPPF) understandably focuses on the Government's commitment to providing more housing. However, it does not adequately address the need for industrial and logistics land. Without the freight industry, the materials to build these new homes will not be delivered. It takes 34 freight vehicles to build an average-sized three-bedroom house. And those new residents will increase demand on the supply chain. It is essential that new logistics and industrial land is earmarked in the right location to serve new communities and that existing land is safeguarded including rail freight sites and wharves to enable modal shift.
- Include requirements to safeguard existing industrial and logistics land and to identify new opportunities. Land will always have a higher value for residential over industrial/logistics uses, therefore it is important that all avenues are explored before any release for other purposes.
- Further categorise industrial land as the requirements of the freight industry are distinct from other industrial services due to the transport related functions which underpin our operations. Ensuring the availability of sufficient affordable logistics land in the right location for optimal efficiency is necessary to improve air quality, safety and reduce congestion.
- Some felt that the RHA/FTA should be embedded in major statutory plans, whether it be transport, housing/employment. New spatial plans / masterplans and plans for Strategic Rail Freight Interchanges should engage (possibly as a statutory consultee) with the freight industry to ensure the transport network can meet their requirements.

- 1.1.49. It was felt that TfSE can support the industry by planning for freight requirements in new development and future proofing new settlements to ensure they can be efficiently delivered to and serviced. Beyond this a question was raised referred to whether industry would remain in cities/urban areas or shift to the periphery where transport issues may be simpler to resolve and new forms of transport infrastructure easier to put in place – this needs to be considered as part of the planning process.
- 1.1.50. Strategic distribution facilities service regional or national markets and therefore need consideration wider than local planning needs, this is where maybe STBs can add value. Their functional economic areas in terms of product markets, labour markets, supplier markets and transport impacts extend well beyond a single local authority boundary. Location decisions are driven by the catchment areas they can serve and the strategic transport network.
- 1.1.51. The average size of strategic distribution facilities has been growing ever larger as operators seek to drive productivity and efficiency gains. Efficient logistics facilities require larger plots of employment land. Stakeholders felt there is no framework for guiding spatial planning on any regional or sub-regional scale.
- 1.1.52. As the planning and management of infrastructure becomes more critical – especially in urban areas, so the need for more data would become ever-more critical. Data sharing agreements between planning authorities and business should be established as a pre-condition to planning authorisations and access rights being given.
- 1.1.53. Potentially a Business-Planning Authority Partnership model could be envisaged to bring a more appropriate approach to planning. This approach needs to consider:
- Gateway connectivity;
  - Impacts of neighbouring regions.



- 1.1.54. Growth aspirations for increasing population in TfSE need to consider these have logistics implications such as warehouse space, staffing and congestion. Repeatedly it was noted that with every home comes an associated generation of freight deliveries and even before that the construction logistics planning will be essential as part of any regeneration.

## **LOGISTICS GOLDEN TRIANGLE**

- 1.1.55. There were some discussions about creating new logistics hubs e.g. Berkshire. As the economy grows the current logistics heartland could become more regional – e.g. Berkshire/M4 Berkshire corridor as opportunities are created from the new run way. This however, will need better access to Heathrow. Berkshire is already a key for high tech companies which are high value and this could be an opportunity for economic growth for logistics and technology.

## **CONSTRUCTION**

- 1.1.56. Many discussions mentioned Construction Logistics Plans (CLP), but that their use is London centric at the moment and needs to be rolled out beyond central London. Regional CLP's could cover larger areas and allows for all the plans to be knitted together. However, these need to be monitored once the development goes ahead. At the moment “we” don't fully understand the wider impact, i.e. phasing the development or consolidation between construction sites.

## **LORRY PARKING**

- 1.1.57. Stakeholders echoed the results of DfTs Lorry parking survey which shows parking is well over capacity, leading to inappropriate parking and potential safety concerns for drivers. Potential technologies can help address this by for example, showing available spaces, but there needs to be a much a wider consideration of the issues with the planning inspectorate about making land use available. There was a view that the National Lorry Parking survey needs to be considered by TfSE.
- 1.1.58. The concern of lorry parking was repeatedly discussed and highlighted that any new road infrastructure need to have proposals for new services – to include provision for HGVs. Motorway services are often not appropriate for HGV parking. This is also reflected in comments about charging there, fees for overnight rest facilities often don't necessary reflect the services on offer.
- 1.1.59. Operators highlighted the importance of good rest facilities otherwise business run the risk of:
- Breaking regulations
  - Extra mileage
  - Inappropriate parking if none available
  - Impacts the image of the of the industry, the ability to recruit and keep people, plus also reputation with the general public as being a “problem” that needs solving.
  - Causing nuisance to residents
- 1.1.60. Some key things that need to be considered in relation to lorry parking were noted by stakeholders:
- Good information about spaces available is important to allow for the better managing of driver hours. And so that brakes can be planned and don't park inappropriately.
  - Strategies to avoid inappropriate parking is important – getting the right resources in place. For example, Ashford turns people away all the time, so it's not that people aren't willing to pay.

- Need some free parking but with less facilities (e.g. French service areas) for those drivers who are more self-sufficient.
- Enforcement is difficult when there isn't anywhere for them to go.
- Anywhere that is going to draw more HGV's in and out e.g. new distribution areas (where do you stop a large truck to nip to the loo).
- Increasingly laybys are being closed for the storage of plant or equipment meaning that HGV's cannot make the stops they need to comply.
- Facilities where they exist are poor – and not very female friendly. This also feeds into land use planning that needs to be freight sympathetic.

## REGULATION

- 1.1.61. Stakeholders noted that efficiency would be encouraged by reduced regulatory barriers to vehicle innovation and trials. There was a view that the industry wanted certainty over regulation decisions and specific legislation and that regulatory pressures on haulage operations were causing many hauliers to quit the business.
- 1.1.62. Some felt that regulatory changes are needed for example to slacken restrictions on early morning deliveries in planning consents to stores. However, regulatory examples such as London lorry control scheme adds complexity and the removal of restrictions could encourage the right behaviours. In addition, some felt that heavier and longer vehicles would reduce HGV movements. Whilst this may be a national issue there was acknowledgement that this may impact the local infrastructure and this needs to be considered.
- 1.1.63. In discussions with stakeholders it was recognised that congestion may drive the need for changes. For example, the introduction of road user charging. Some felt that road pricing, if applied to all road users, will reduce congestion and then make improvement, however, this may be more of a national issue.
- 1.1.64. Some solutions need regulation and associated enforcement. As an example, CLP's were seen by some as key but needs to be policed, it was felt that regulation is only any good if you can change behaviour as a result.
- 1.1.65. Towns and Cities implementing DEFRA targets and clean air zones to manage air quality should also consider how these targets impact on freight operators, particularly due to cost and practicality. Some stakeholders felt that often policy, land use planning and the freight industry is disconnected. As such regulation often impacts the urban environment more than elsewhere, and so urban management needs a well thought out strategy as this filters throughout the wider supply chain and needs political buy in and financially supported.

## ROAD INFRASTRUCTURE

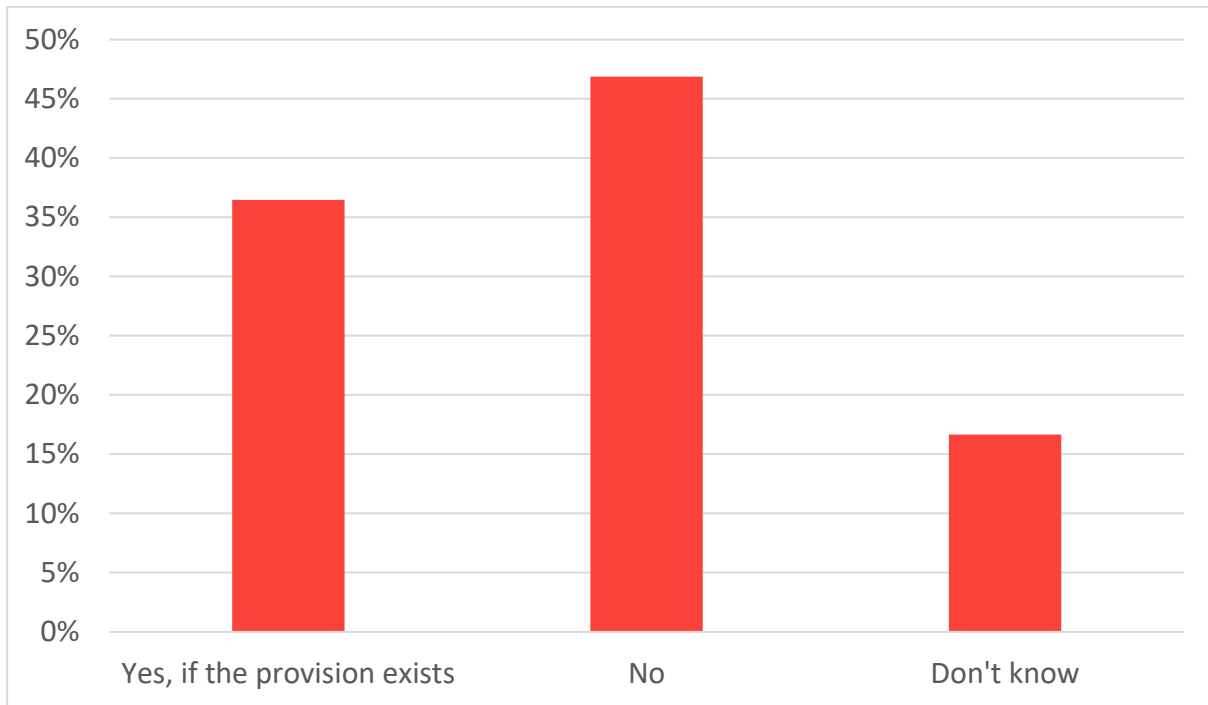
- 1.1.66. Stakeholders felt that the future infrastructure requirements could be very different than those that needed today. Infrastructure should, therefore, be designed with these new models in mind. Future-proofing the infrastructure would likely require national co-ordination of plans e.g. we do not yet know if the future is truly an electric-powered one or hydrogen: given the fact that we have a comprehensive gas pipeline network in place nationally, this could be utilised in the future for

hydrogen, supplying fuels to homes and transport; before ripping the pipelines out of the ground, consider leaving them for a potential hydrogen-fuelled future.

- 1.1.67. There was some agreement that there is a fundamental question about how we tackle the issue of capacity on the network, freight feels like a core need, and as such needs to use the road network (SRN/MRN)– but feedback suggested that government needs to tackle the rise in car ownership and number of trips made by single occupancy car users. The UK nationally need to improve the way car use demand is managed and identify where capacity exists on the network (and more generally) to enable haulage to move at free flow speeds where possible. There was a general sentiment that something fundamental needs to change regarding car use demand and we cannot build ourselves out of congestion. In order to do this public transport needs investment in (maybe more than just cycling). Cycling is one thing but it's not the panacea for all locations nor the solution for congestion (in some cases makes it worse).
- 1.1.68. As well as considering freight, stakeholders saw a need for an integrated plan for people, freight, road, rail and shipping as well as other modes such as trams. Public transport needs to be reliable, accessible (including for shift workers, which is important for the logistics industry) – maybe even more of the case in rural areas. This will take cars off the road, and improve road capacity for use by freight vehicles.
- 1.1.69. There was some feedback that suggests overall the management of the local infrastructure has been poor, with uncoordinated maintenance and improvement planning. Business want and need improvements in the road network but it needs to be better managed. There is a need to understand, holistically the impact of numerous roadworks on operators. There is recognition for the investment but the pain (and cost) can be lessened with better communications.
- 1.1.70. Operators noted that there is no desire for freight to take more time than is necessary - want to be in and out as quickly as possible. Authorities need to review the performance of initiatives on the whole network – not just one area i.e. are problems being pushed into another areas' as a result of a policy decision.
- 1.1.71. Some stakeholders felt the transport infrastructure needs to better serve the economic map. They felt that golden triangle is reaching capacity and therefore is need to develop a new centre of gravity (in TfSE) by creating economies of scale (through TfSE policy) by providing a labour pool, positive planning approach for freight and logistics together with a reliable transport infrastructure.
- 1.1.72. A key issue for operators are roadworks and accidents. Not having advance notice of road closures means it becomes impossible to plan for them and put in contingency where needed – for example, operators get weekly update for M25 but don't get it for other major routes. Roadworks need to be coordinated between Highways England and Local Authorities to ensure that there are not multiple major routes with restrictions at the same time. Authorities needs to understand the impact of what they do on business and plan to minimise disruption e.g. breakdown roadworks into more manageable chunks to reduce length of disruption. Staggering lane closures could reduce the impacts and reduce business costs. SLAs could be a means to focus on timeliness need to be in place for roadworks and incident management to allow for greater transparency. Stakeholders felt that incident management is also important – to allow for the roads to recover as quickly as possible. Whatever the reason for the delay, the cost to businesses is significant– driver times, penalty clauses, missed sales.

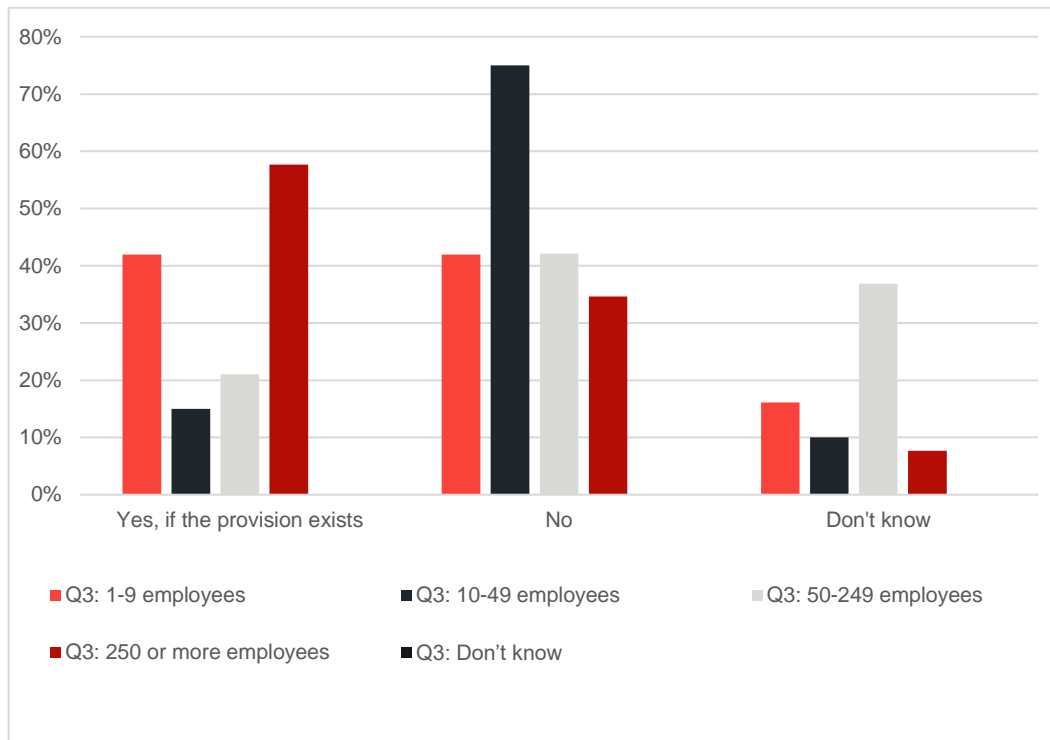
## PORTS AND RAIL

**Figure A-18 - Would you consider switching mode of moving goods in the future?**

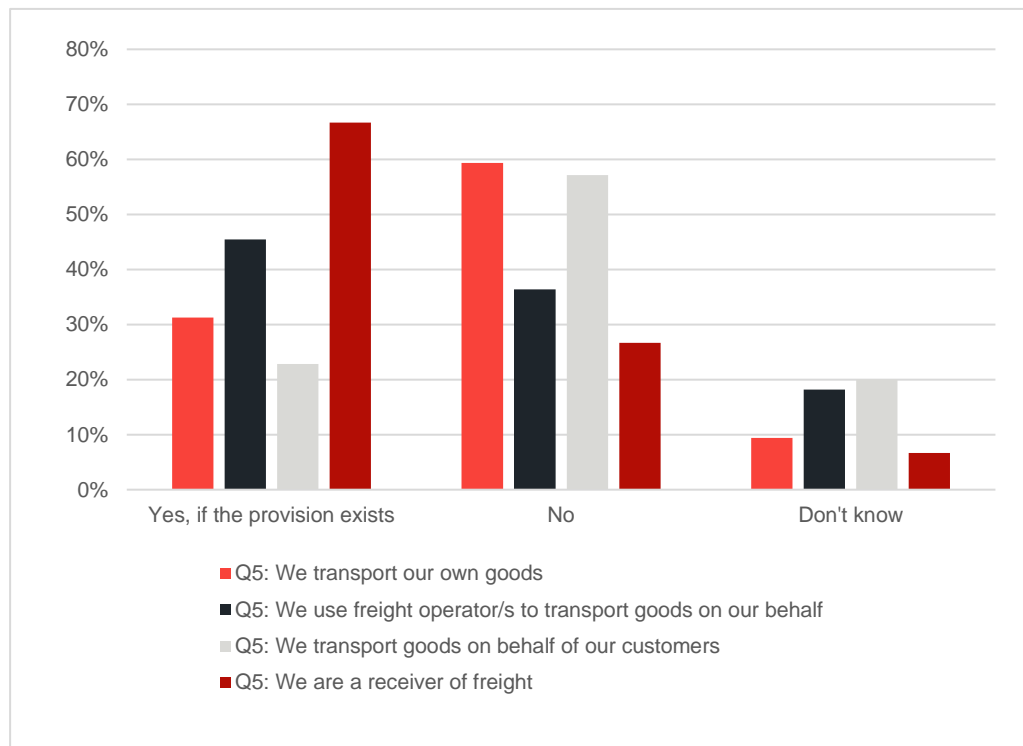


- 1.1.73. The survey explored modal shift, asking whether respondents would consider switching its mode of moving goods in the future, for example, from road to rail or vice versa? The responses showed that businesses at the smaller and larger ends of the spectrum are more likely to consider switching modes than medium sized businesses. The following graph shows how this response is broken down by type of business.

**Figure A-19 - Mode shift by business size**



**Figure A-20 - Mode shift by business type**



1.1.74. Investigating modal shift and access to markets a bit further in discussions, some stakeholders felt that access to key ports could enable new markets to be developed (e.g. Southampton to Daventry) and consideration needs to be given to the possibilities of East-West rail in developing new markets.

Feedback suggested that East West Rail for example is important for freight as it creates a direct route from Southampton to the Midlands. There was some challenge over why Dover is not rail connected by rail from a freight perspective and why HS2 has no connection to Euro tunnel.

- 1.1.75. Contrary to this however, some felt that currently the rail network meets the needs of the industry and greater use of rail is unlikely. These stakeholders could also see the increasing risk of congestion on roads so therefore the increasing need for finding alternative modes. And others noted that the development of the rail network and projects such as HS2 is vital to regenerate the north and to relieve the pressure in the south.

## NETWORK CHALLENGES

- 1.1.76. Survey respondents highlighted the following areas of concern on the network in the TfSE area:
- Central London
  - Motorways: M25 (J1A, J1B, J9, J12, J25, J28); M27 (J3 and J4); M271 (Redbridge Roundabout); M3 (J9), M4, M26
  - Roads: A27, A34, A281, A3 (Guildford town centre), A2 (Brenley Corner)
  - South of M20 towards Hastings
  - Dover TAP
  - Gatwick triangle
  - Coastal access between Chichester - Brighton - Folkestone
  - Dartford Crossing
  - Isle of Wight ferries
  - Southern access from Southampton port to the Midlands is a key issue (A34) – only 2 lanes wide. There are options to resolve this such as putting another lane in, building a new road, change the draw to the golden triangle by creating a new heartland in TfSE and using technology to mitigate congestion

## SOLUTIONS

- 1.1.77. Consensus overall was that there was no one solution to all the issues raised – different areas require different solutions. However, an overarching approach that provides consistency for operators. The following lists a number of specific solutions identified in discussions:

### Technology

- Fully autonomous HGV's would not be operation in the next 10 years, however, that's not to say the industry won't be able to make use of greater levels of autonomy.
- The main means by which improvements will made (from an efficiency perspective) is through better engines – fuel economy. Improved Euro standards will be achieved which will also allow for improvements in MPG.
- Technology will allow for the better use of KPIs and better sharing of data to allow for efficiencies to be made.
- One stakeholder suggested consideration for the potential for tunnel-like (such as Magway which uses tunnels to move freight) infrastructure being put into place at far lower cost than new road and rail infrastructure; such tunnels might serve directly into new manufacturing and large out of town retail centres; they might even supply services (goods delivery) in new settlements/towns

that were being envisaged. Older towns might prove more difficult to introduce such infrastructure however.

### **Operational change/market change**

- The next generation of pallet networks will allow for greater collaboration.
- Smaller operators (under 100 vehicles) days are potentially limited with more co-ordination (joining forces) between competitors such as Jigsaw.
- Clustering of logistics provision; to generate the opportunity to share resources, infrastructure, encourages competition, creating value added services and overall economic efficiencies.
- Consolidation needs a political will and so politicians need to better understand the bigger picture

### **Regulation**

- Expanding the opportunity to work through the removal of restrictions that will reduce cost, with punitive measures consider to be a draconian approach.

### **Behaviour change**

- Simple solutions sometimes are what is needed and maybe as much about incentives for the right behaviours.
- Currently no deterrent for poor driving. One stakeholder highlighted that if congestion costs £9 billion per year if road policing was in place this cost can be reduced and reinvested in policing. 85% of collisions by HGV are by human error – 75% of the are third person (i.e. not the HGV driver).

### **Network capacity**

- Encouragement of HGVs to use SRN at night to balance out peaks and troughs. It is worth noting that much maintenance on SRN happens at night so this may cause other issues.

## **ROLE OF TfSE AS A STB**

- 1.1.78. In the survey 61% of respondents were not aware of TfSE, with large businesses with 250 employees or more being more likely to have heard of TfSE. That said, whilst organisations weren't aware of TfSE, feedback suggests that the role of the STB is (or could) valuable. In the survey, 74% felt that TfSE were important in shaping transport for the area. Exploring this in 121 sessions, stakeholders felt that TfSE has a local knowledge of the area and the specific demands placed on it. Some felt there needs to be a recognition that not everywhere is like London and some things that work there may not work elsewhere. Knowing the region and its problems means that the STB is more likely to know the solutions better than anyone.
- 1.1.79. However, some observations were made that the STB's feels like they need to "intervene" but operators noted that what they "need" to do to enable the logistics industry to do what it needs to do, but better. STB can help by making moving goods more efficient by enabling the industry to run better (e.g. restrictions that are in the way to hamper logistics).
  - Some stakeholders felt that TfSE need to understand the impact of future trends and they need to be bold. In line with that STB need to recognise where the GVA is it coming from and how the

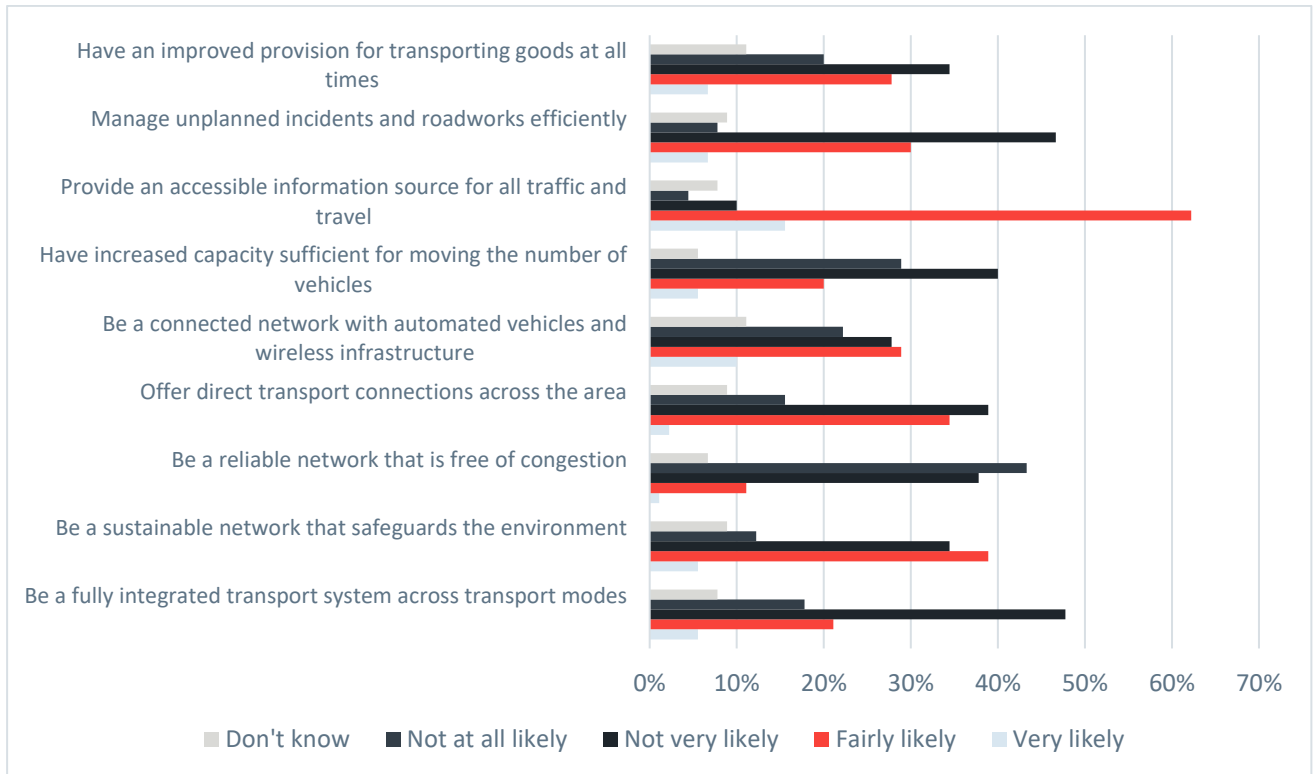


freight industry needs to respond to those industries and growth. This will also allow for TfSE to help business plan for the future.

- Data is a key starting point and critical – both industry to TfSE and TfSE/public bodies to Industry. Key is to this is understanding what the data will be used for – industry has a lot of information, but often commercially sensitive but could be shared under certain conditions. This means there could be a role for TfSE to be a data broker.

- 1.1.80. Many felt that there is a need for a joined-up strategy – includes all councils and LEPS and TfSE is key to delivering this. Solving transport problems in one area can often result in causing a problem somewhere else and therefore needs to be considered more holistically. This includes the future planning of roads so we don't just shift bottlenecks, but properly resolve them. There was a concern that often, in planning decisions there is a lack of political will to solve the real issues.
- 1.1.81. As part of its role TfSE needs to work with those outside of the region, both in terms of future planning but also looking at best practice and how other parts of the country are managing the pressure, whilst recognising all places are different. This was especially seen with the impact of policy decisions in London and other neighbouring regions on TfSE transport network and this highlights the need for a coordinated approach. As an example, London is pushing hubs out in the regions which are unable to cope.
- 1.1.82. Feedback indicated that industry felt there is little business engagement, including through the LEPS. Therefore, it is difficult to see how are they pulling the strategy together as well as feeling able to input into the process. Any involvement needs to include key sectors such as Retail, Technology, Logistics and Construction. The industry note that it has a lot to give in terms of the strategic planning process. However, this needs to be done with the right people within a business who have longer term strategic plans.
- 1.1.83. Both Highways England, LEPS, Transport and Local Authorities planning departments need to work better together to avoid restrictions and to ensure users of the network are aware of planned changes to the network. More information is needed also on a day to day basis to help the freight industry, such as closures and accidents.
- 1.1.84. Some discussions highlighted that the industry will find a solution but only if the economics and this needs public and private industry needs to work together so that the investment in new facilities will enable the economics to stack up. M6 Toll is a classic example of public sector not working with industry needs.
- 1.1.85. As a final question in the survey, businesses were asked about how optimistic they were about the future of transport in the TfSE area? There was a mixed response with regards to how the network will perform.

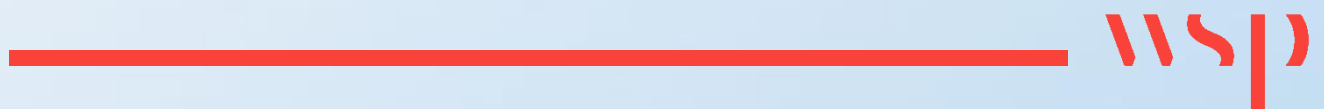
**Figure A-21 - Still thinking about the performance of the transport network in the area, how likely is it that it will change in the following ways? By 2050, the network will:**



1.1.86. Overall the survey and discussions suggested that whilst there were challenges with the network these challenges should be met by focusing on using the assets we have better, rather than just trying to build more roads.

# Appendix B

## FULL SURVEY RESULTS





# **Transport for the South East**

## *Logistics Surveys – Final Results Summary*

*March 2019*

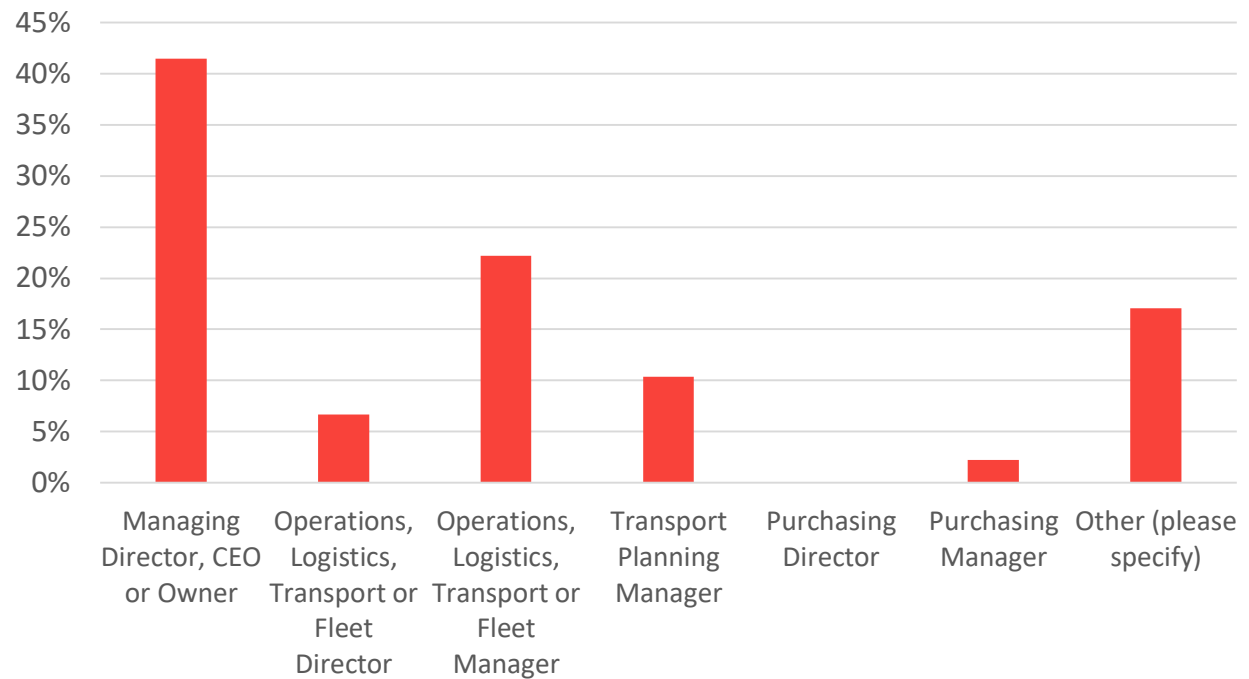
# Responses

- Total responses: 135
- Complete responses: 89

# You and your business

# Q1: What is your role?

Answered: 135 Skipped: 0





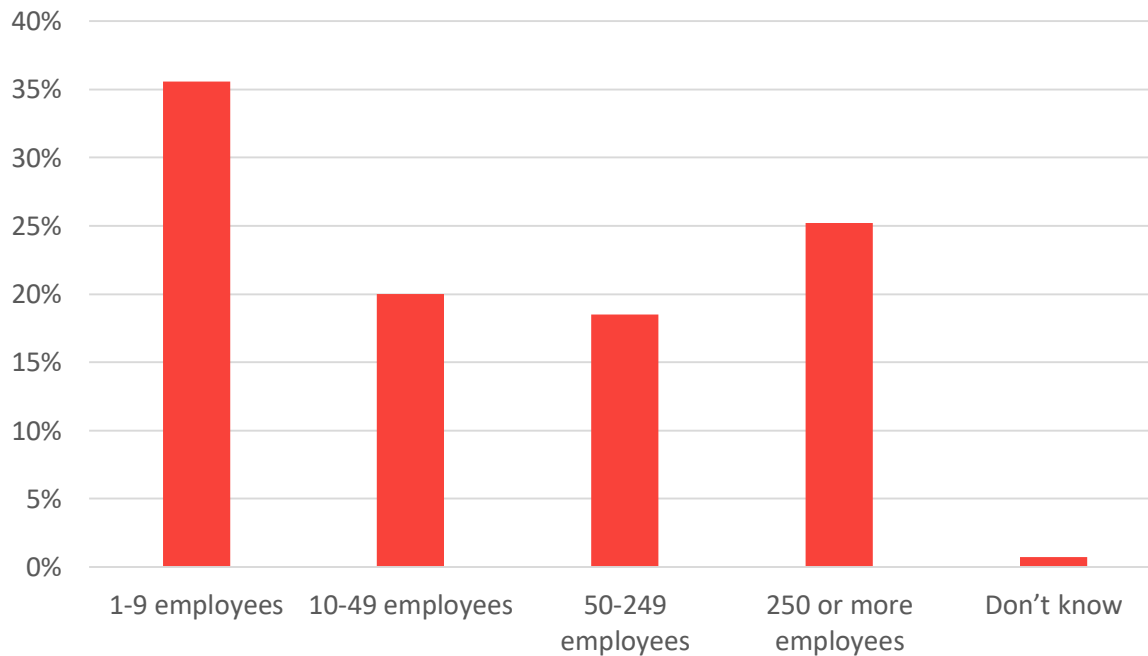
## Q2: Is your organisation located...?

Answered: 135 Skipped: 0



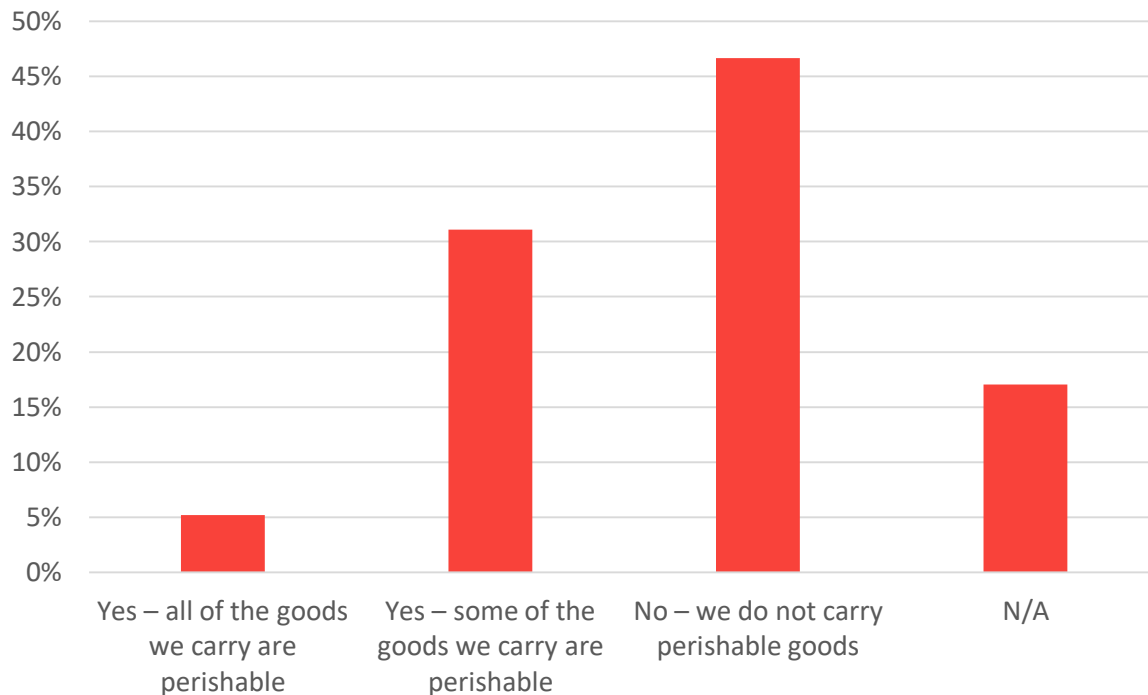
### Q3: How many employees does your business employ in the UK?

Answered: 135 Skipped: 0



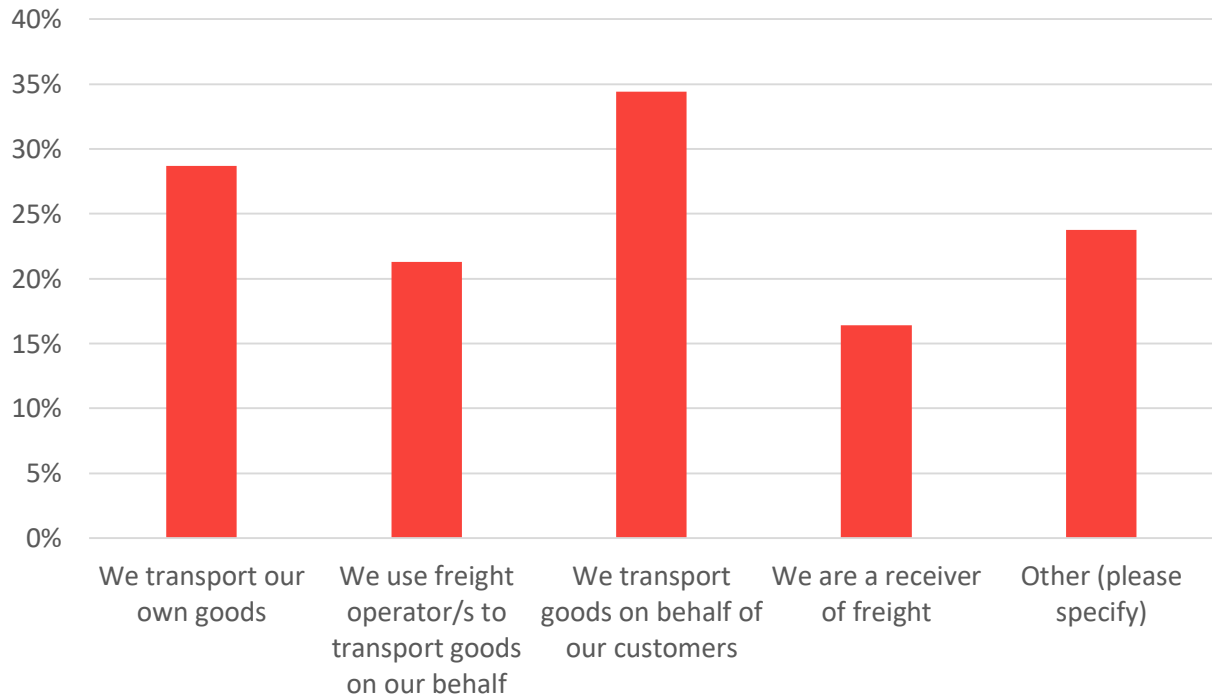
## Q4: Are the goods that your business carries perishable?

Answered: 135 Skipped: 0



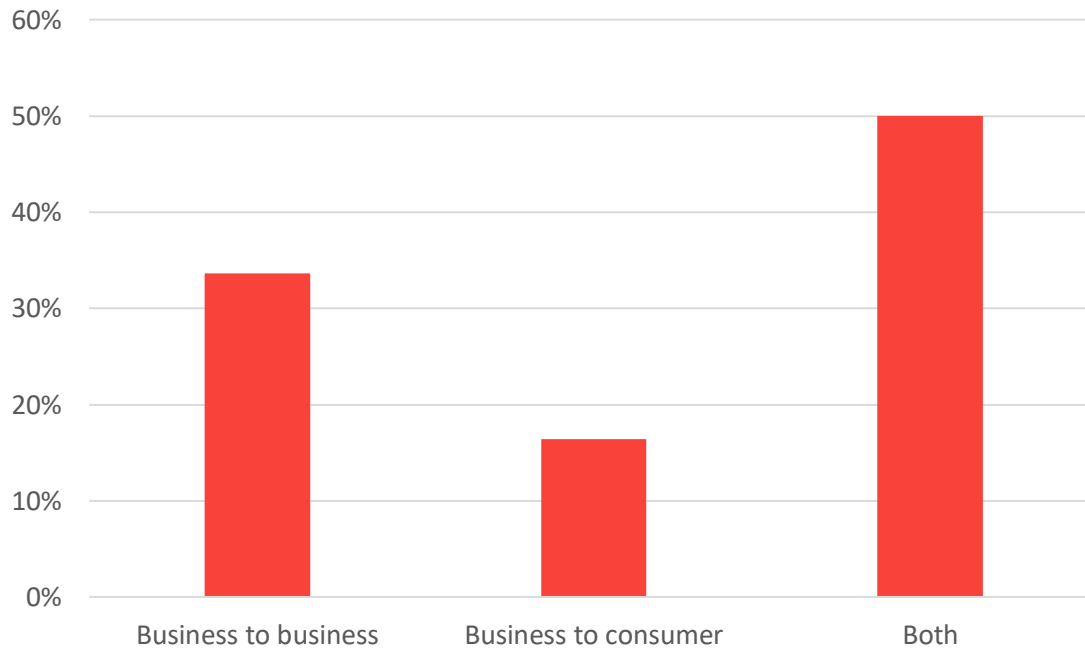
## Q5: Which of the following best describes your business? Choose as many options as apply.

Answered: 122 Skipped: 13



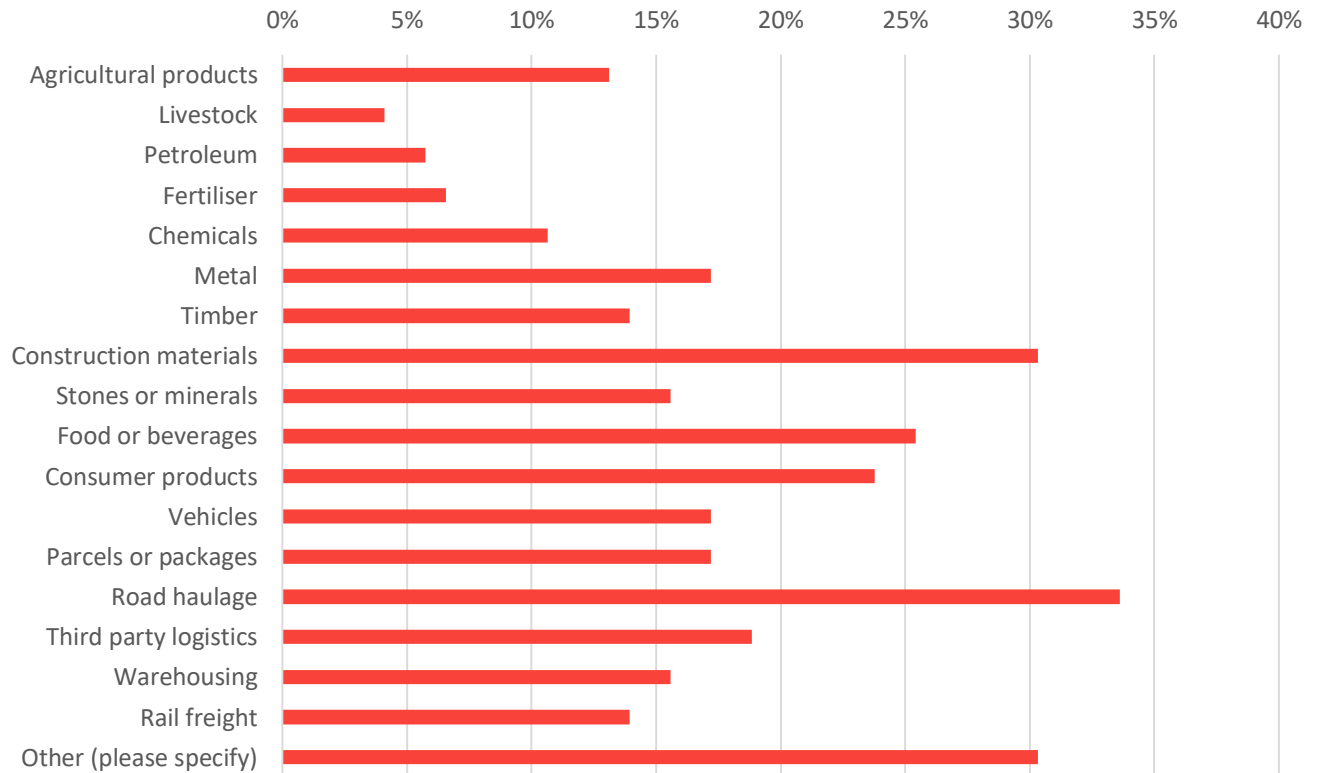
## Q6: Is your business...?

Answered: 122 Skipped: 13



## Q7: What industry is your business involved in? Choose as many options as apply.

Answered: 122 Skipped: 13

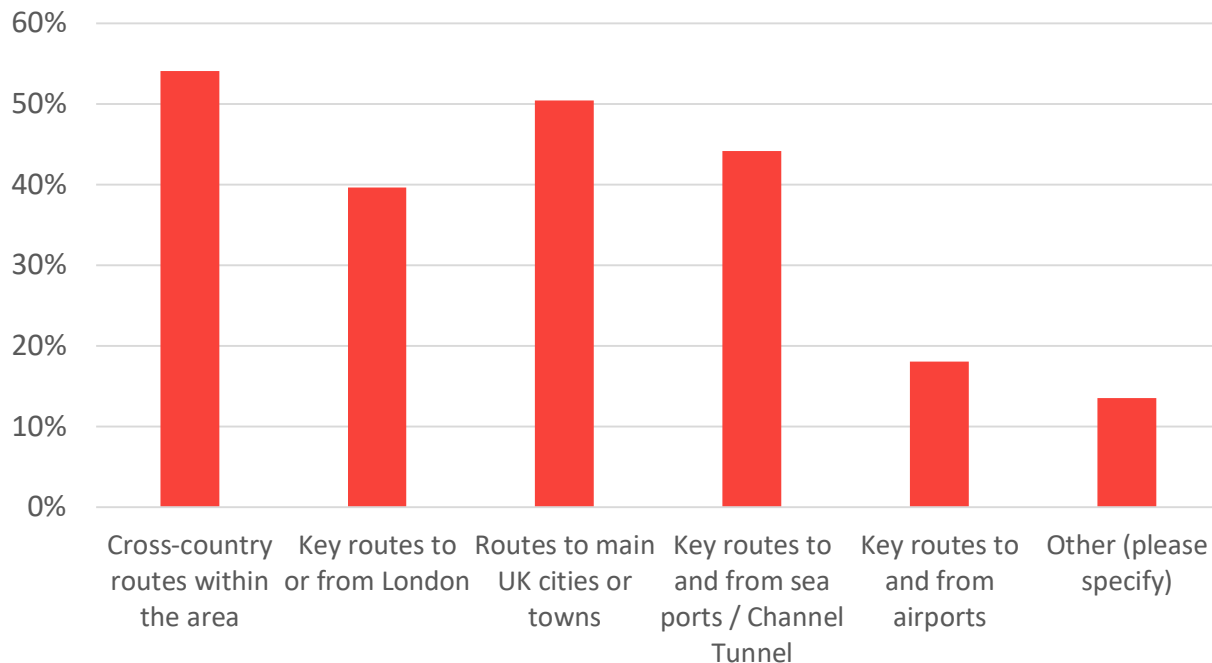


**Transporting goods  
within the area**



## Q8: Which of the following best describes the main routes that your business uses? Please select more than one option if appropriate.

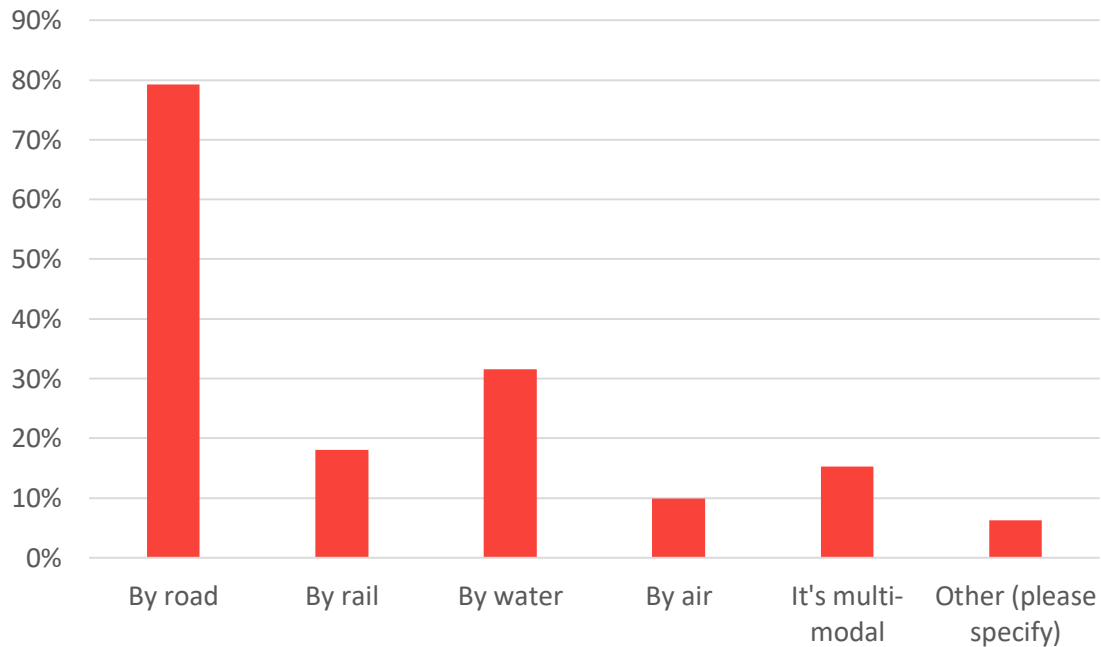
Answered: 111 Skipped: 24



*There were 15 responses to 'Other (please specify)'. 7 said that Isle of Wight ferries / crossing the Solent was the main route used by their business. 2 people said variable routes inside and outside the area. 1 said key routes to the South West. 2 said all of the above. 3 said it was not applicable.*

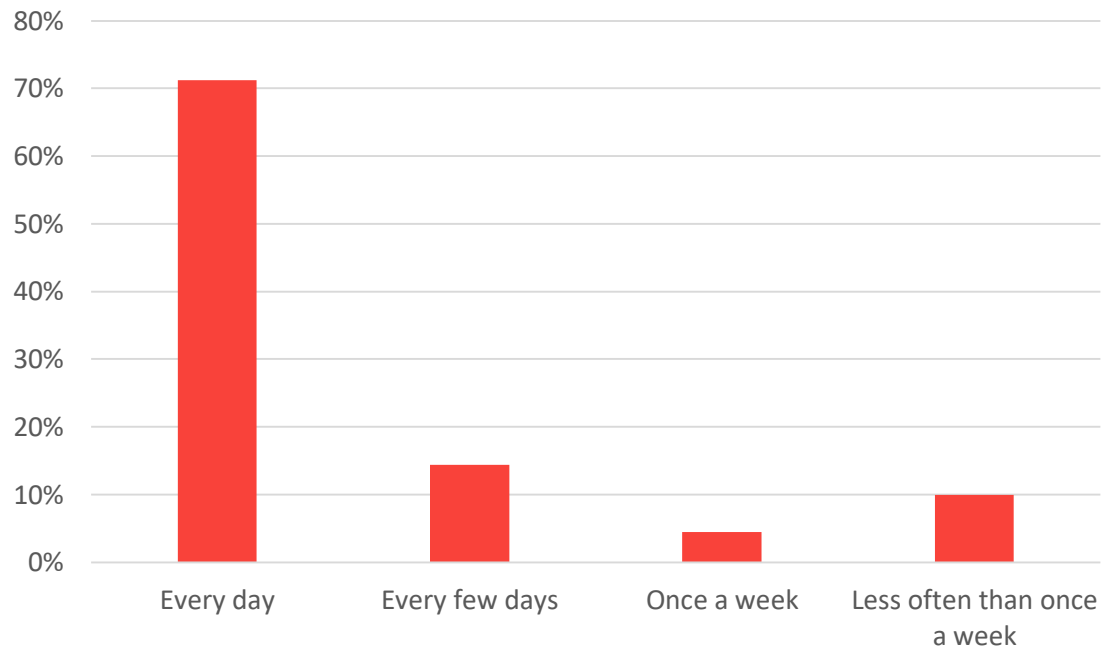
## Q9: How does your business move goods within the area or to / from the area? Choose as many options as apply.

Answered: 111 Skipped: 24



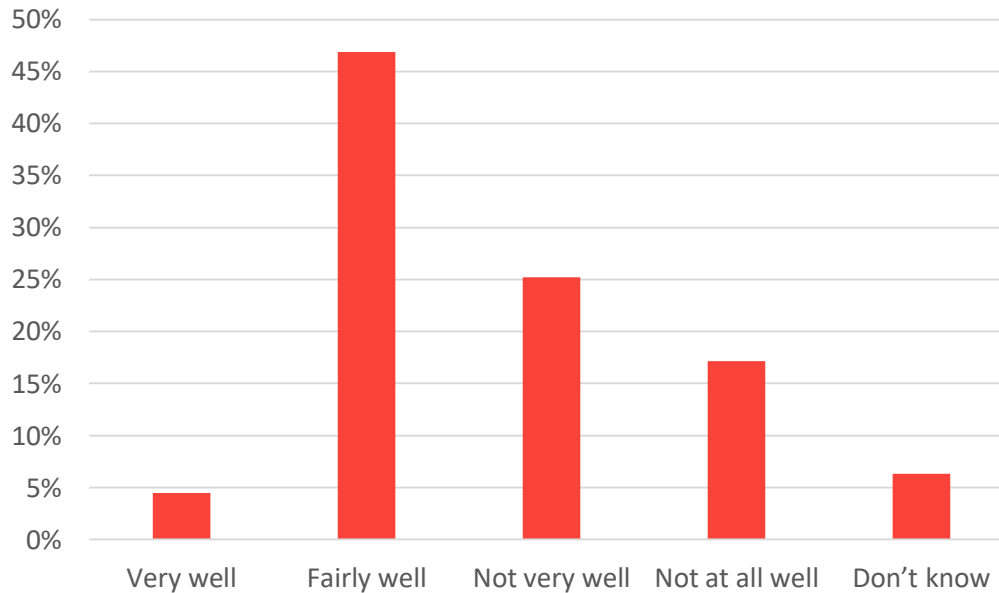
## Q10: How often do you move goods through or within the TfSE area?

Answered: 111 Skipped: 24



## Q11: How well do the transport links in the TfSE area meet the needs of your business with regards to moving goods?

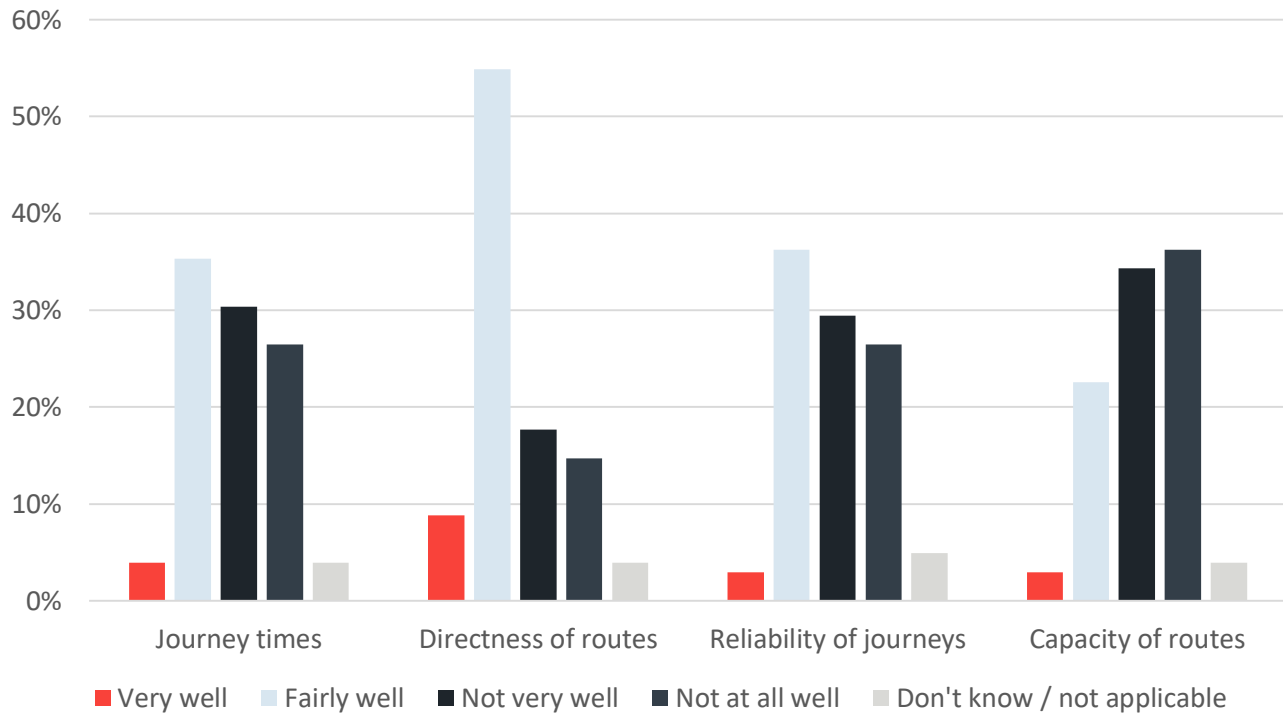
Answered: 111 Skipped: 24



*When asked 'Why do you say that?' 53 responded. 2 respondents gave a wholly positive response referencing their links to existing routes / services. 28 respondents commented on congestion and poor infrastructure on the road network. 16 respondents felt that ferry services are unreliable and / or too expensive. 6 respondents raised the issue of congestion and capacity on the rail network. 1 respondent provided no reason.*

## Q12: Now thinking about various aspects of the transport network in the TfSE area, how well do each of the following meet the needs of your business with regards to moving goods?

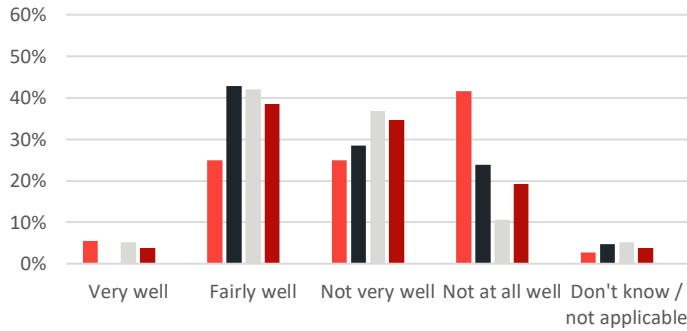
Answered: 102 Skipped: 33



## Q12: Insights

- The aspect of the transport network that best meets the needs of businesses is the directness of routes
- The aspect of the transport network that worst meets the needs of businesses is the capacity of routes
- Small businesses are more likely to feel that journey times, reliability of journeys and capacity of routes do not meet their business needs

## Journey times

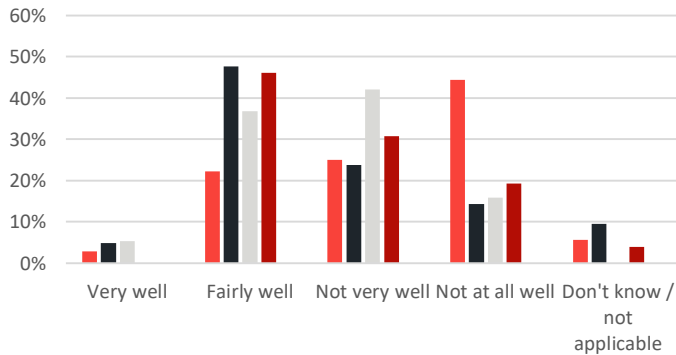


### Business size



	Very well	Fairly well	Not very well	Not at all well	Don't know / NA	Total
Q3: 1-9 employees	2	9	9	15	1	36
Q3: 10-49 employees	0	9	6	5	1	21
Q3: 50-249 employees	1	8	7	2	1	19
Q3: 250 or more employees	1	10	9	5	1	26
Q3: Don't know	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>36</b>	<b>31</b>	<b>27</b>	<b>4</b>	<b>102</b>

## Reliability of journeys



### Business size

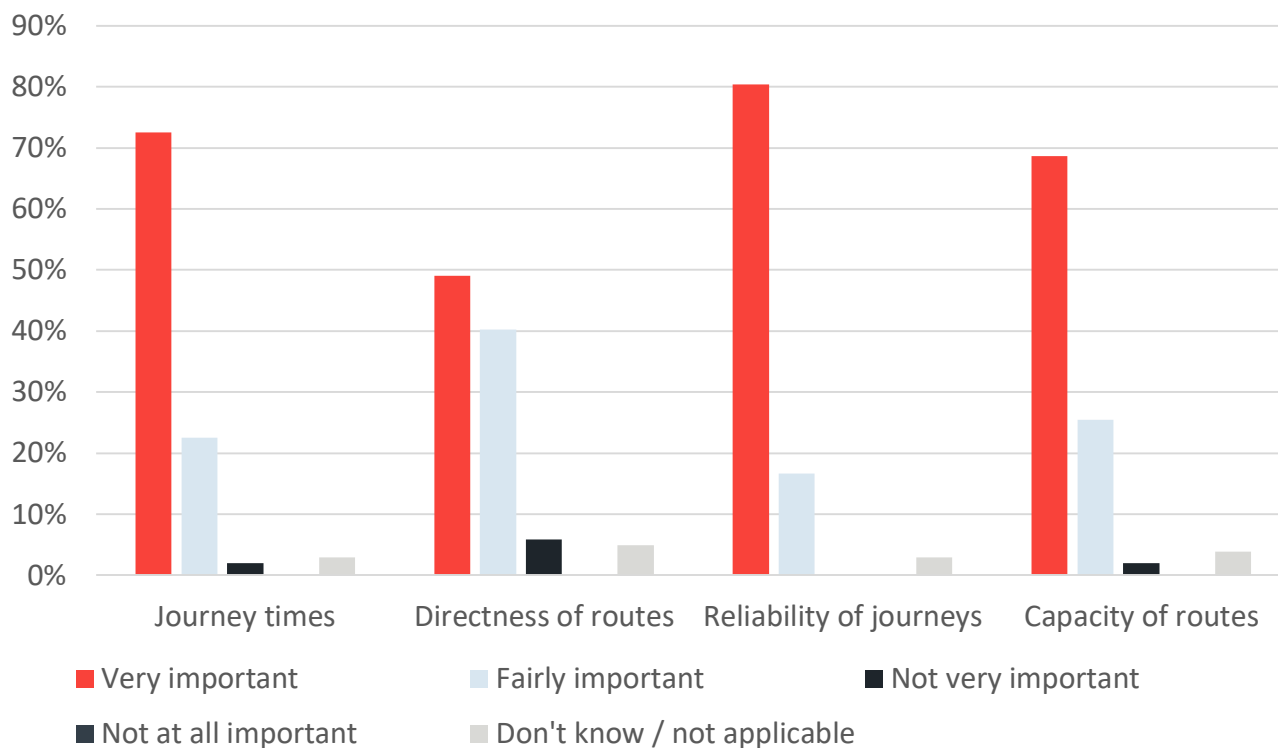


	Very well	Fairly well	Not very well	Not at all well	Don't know / NA	Total
Q3: 1-9 employees	1	8	9	16	2	36
Q3: 10-49 employees	1	10	5	3	2	21
Q3: 50-249 employees	1	7	8	3	0	19
Q3: 250 or more employees	0	12	8	5	1	26
Q3: Don't know	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>37</b>	<b>30</b>	<b>27</b>	<b>5</b>	<b>102</b>



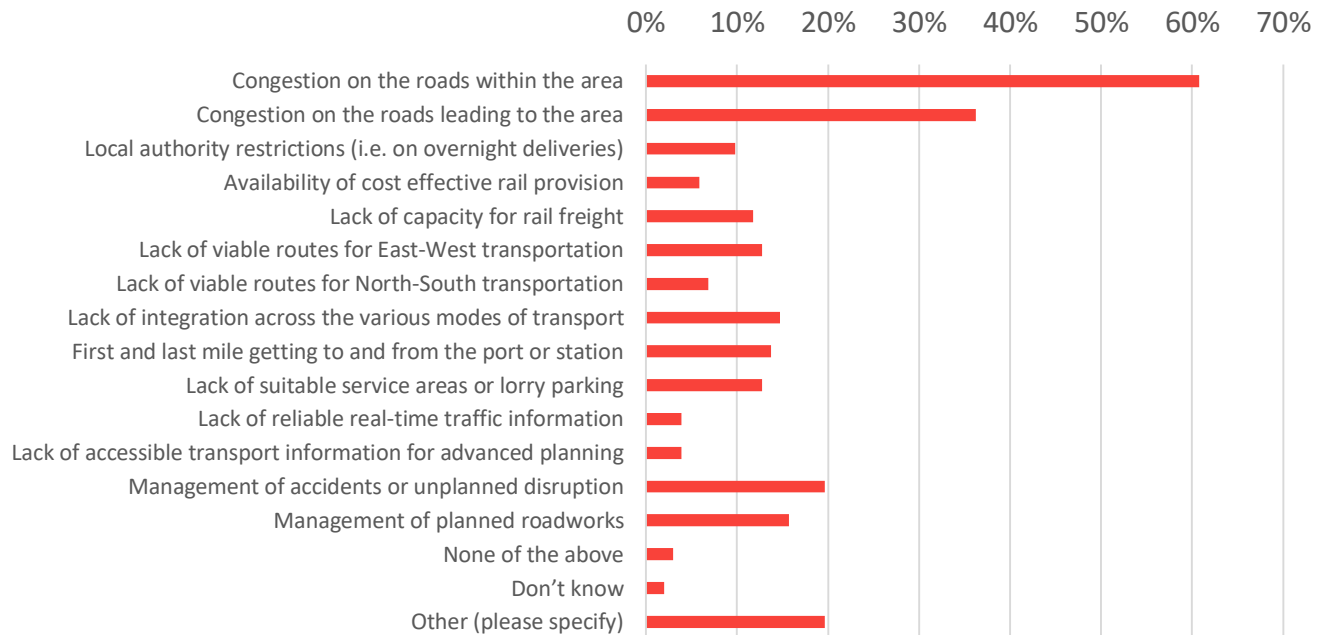
## Q13: And how important are each of the following to the needs of your business with regards to moving goods?

Answered: 102 Skipped: 33



## Q14: Which of the following, if any, do you currently see as the three main challenges for your business with regards to moving goods in the TfSE area?

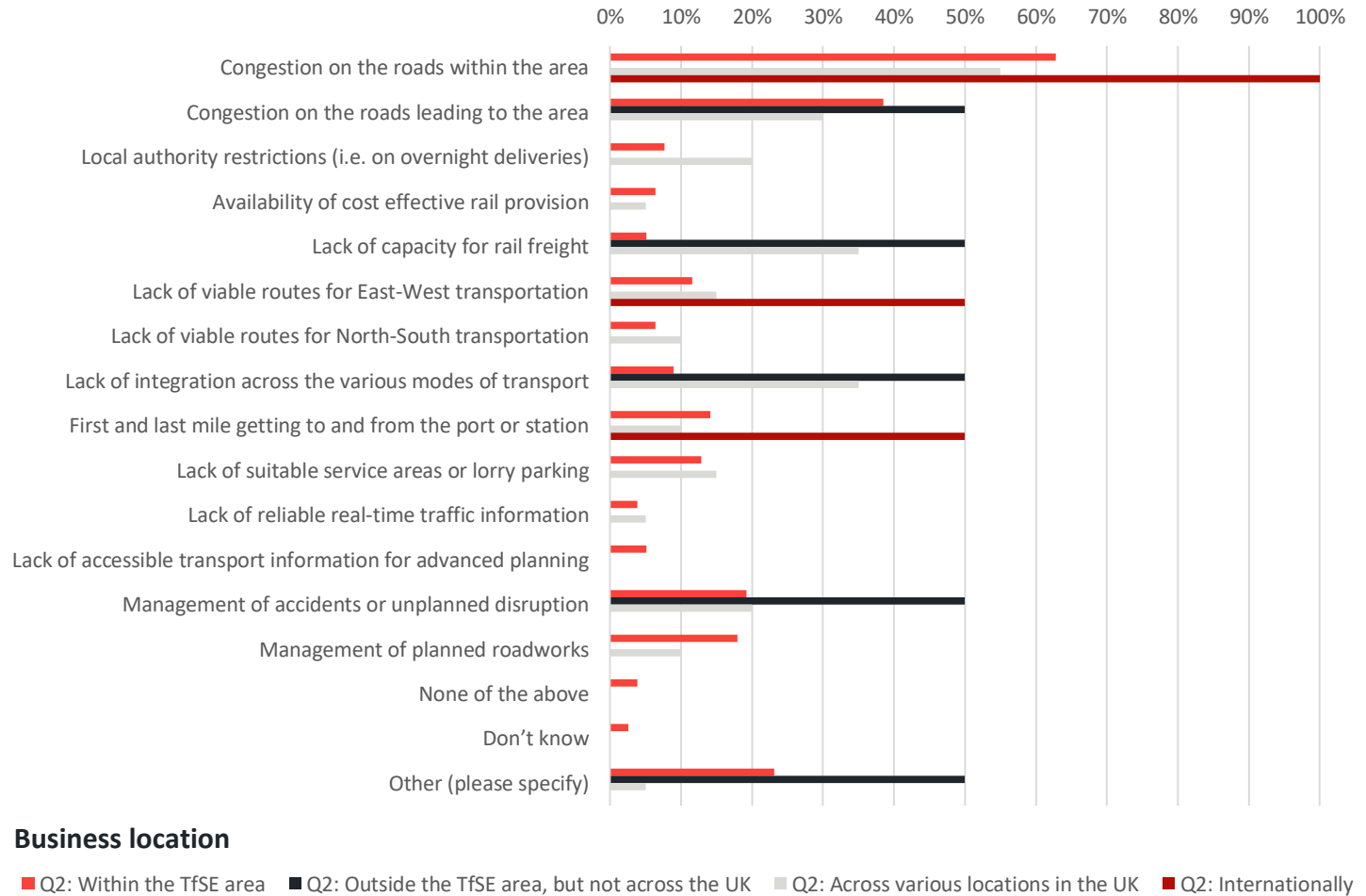
Answered: 102 Skipped: 33



*There were 20 responses to 'Other (please specify)'. 14 commented on the lack of a fixed link to the Isle of Wight and expensive / unreliable ferries. 3 commented on difficulties with rail. 1 commented on the lack of integration between road and rail at ports and other key locations. 1 commented on road works. 1 commented on resting areas for HGV drivers.*

## Q14: Insights

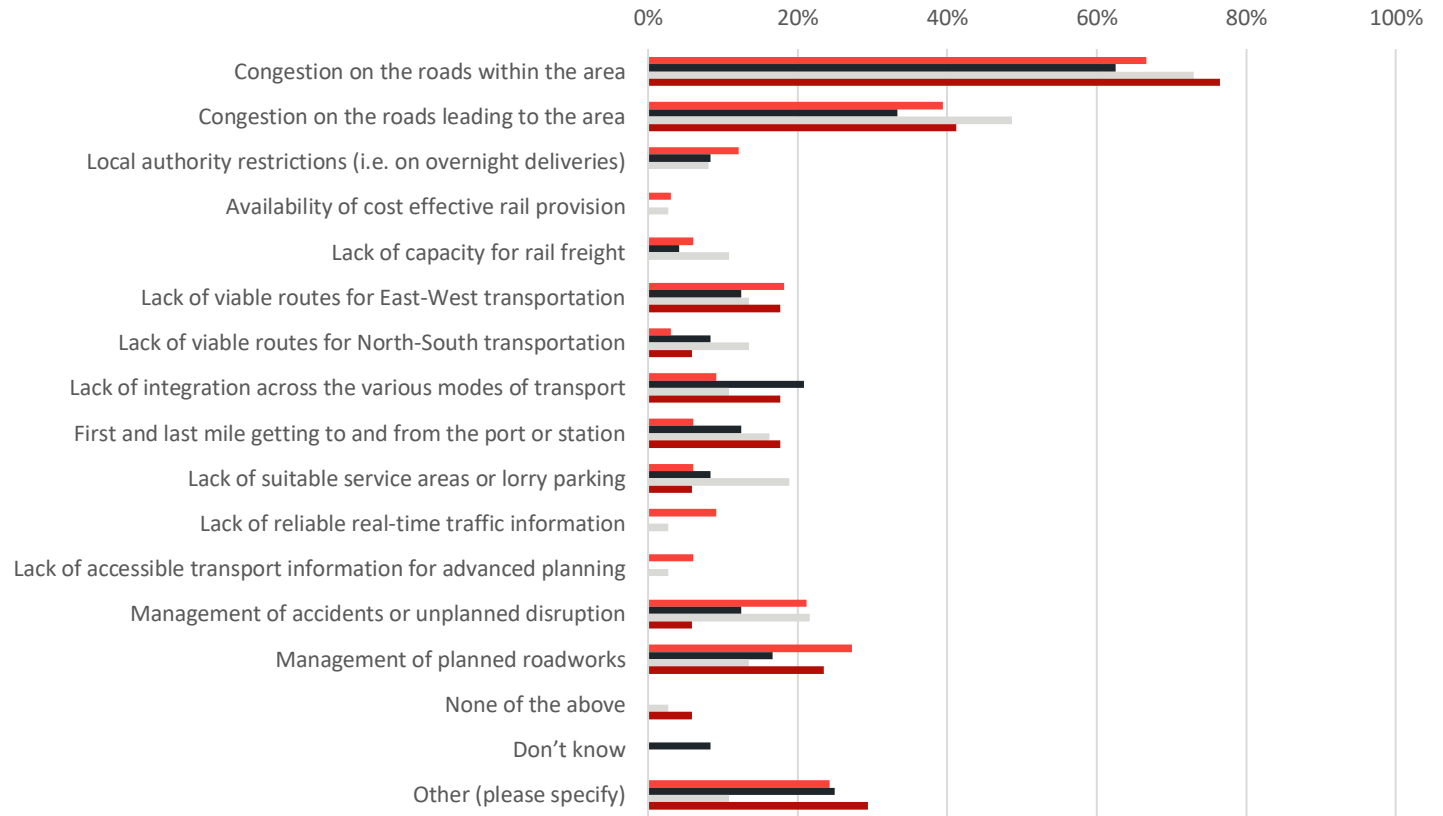
- The following charts show the response to Q14 based on factors such as business type, size of business, location and modes of travel
- All reinforce congestion, both within and leading to the TfSE area, as a key challenge





### Business size

■ Q3: 1-9 employees
 ■ Q3: 10-49 employees
 ■ Q3: 50-249 employees
 ■ Q3: 250 or more employees
 ■ Q3: Don't know



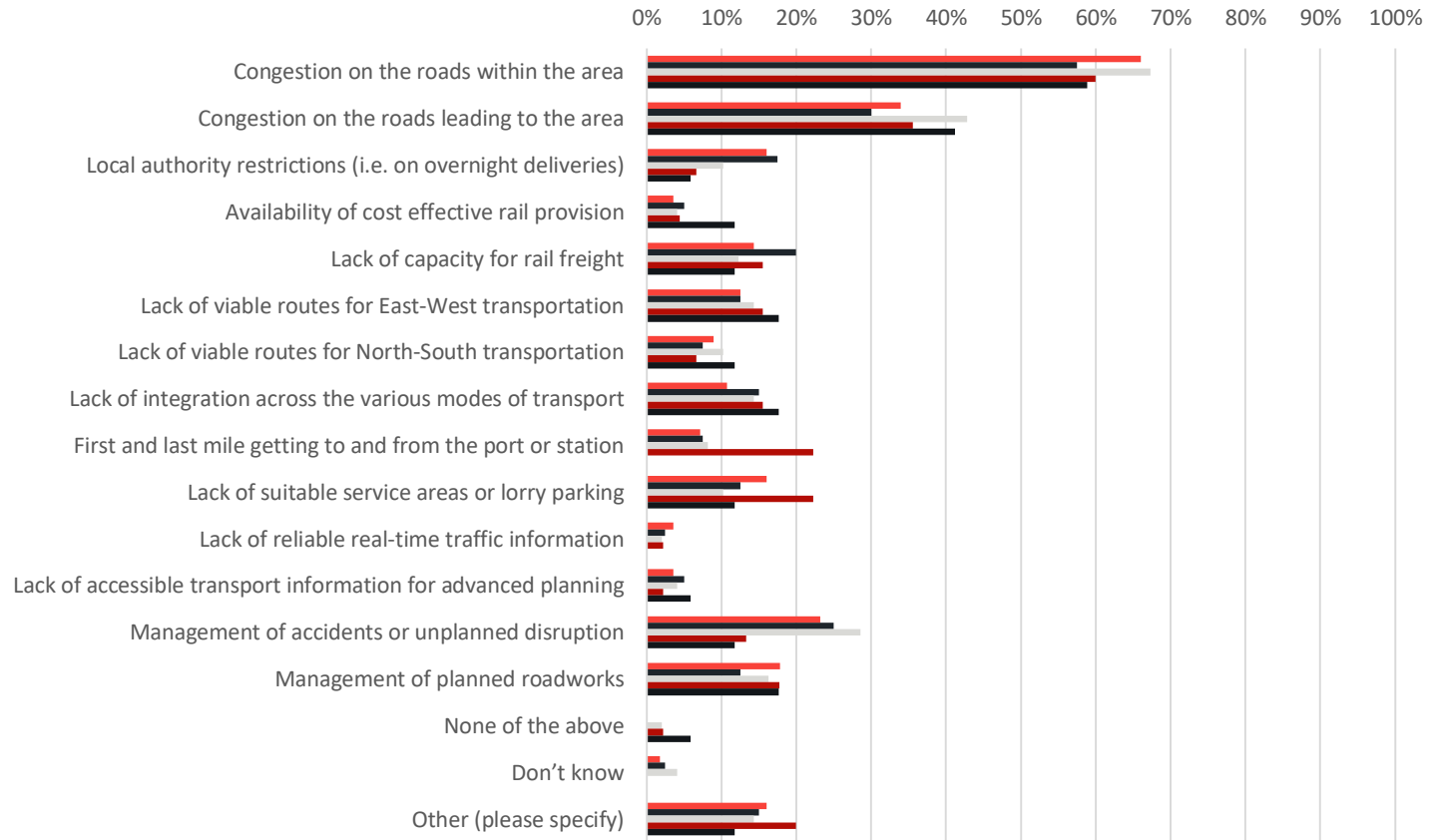
### Business type

■ Q5: We transport our own goods

■ Q5: We transport goods on behalf of our customers

■ Q5: We use freight operator/s to transport goods on our behalf

■ Q5: We are a receiver of freight

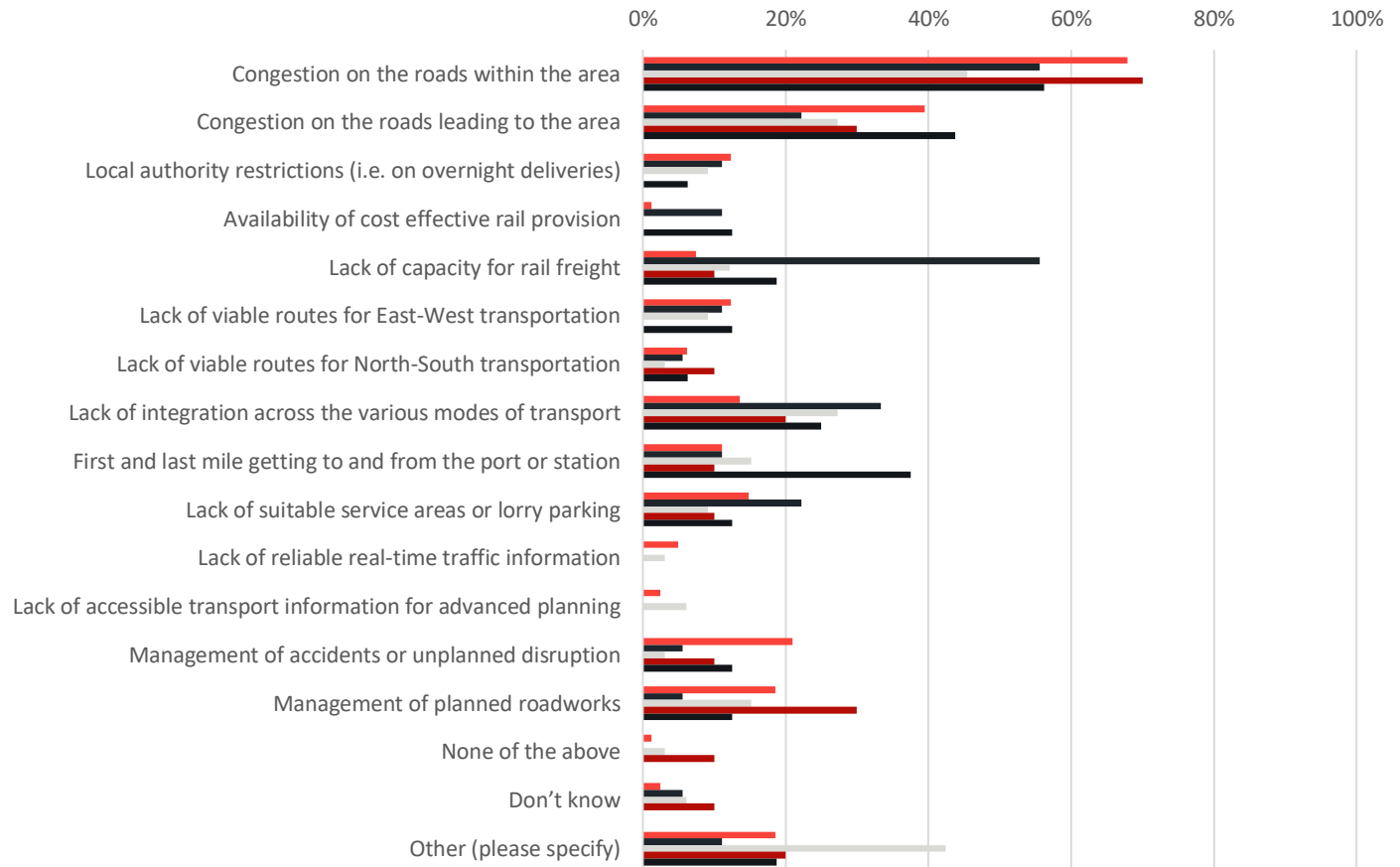


### Routes used

- Q8: Cross-country routes within the area
- Q8: Key routes to or from London
- Q8: Routes to main UK cities or towns
- Q8: Key routes to and from airports

- Q8: Key routes to and from sea ports / Channel Tunnel





### Modes of travel

■ Q9: By road

■ Q9: By rail

■ Q9: By water

■ Q9: By air

■ Q9: It's multi-modal

## Q15: How do these challenges impact upon your business?

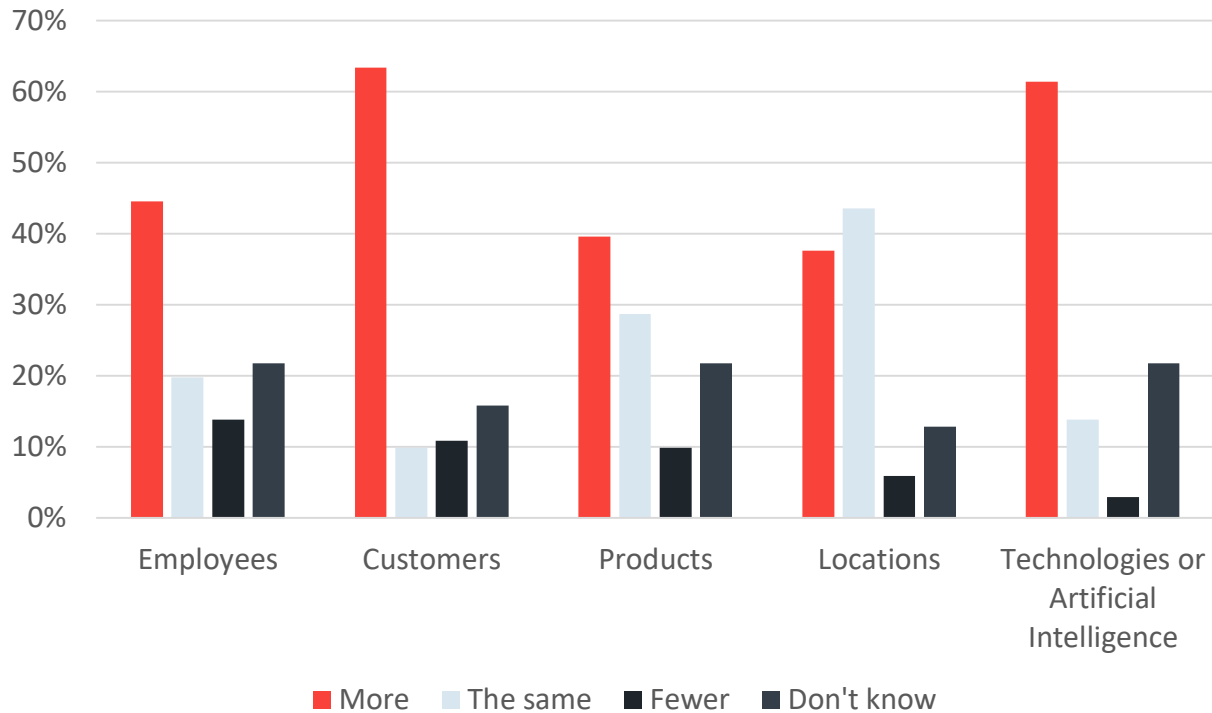
Answered: 76   Skipped: 59

- Congestion
- Delayed delivery / journey times
- Increased costs
- Hinders growth and profitability
- Lack of reliability
- Difficulties with planning
- Environmental impact

# The future of transport in 2050

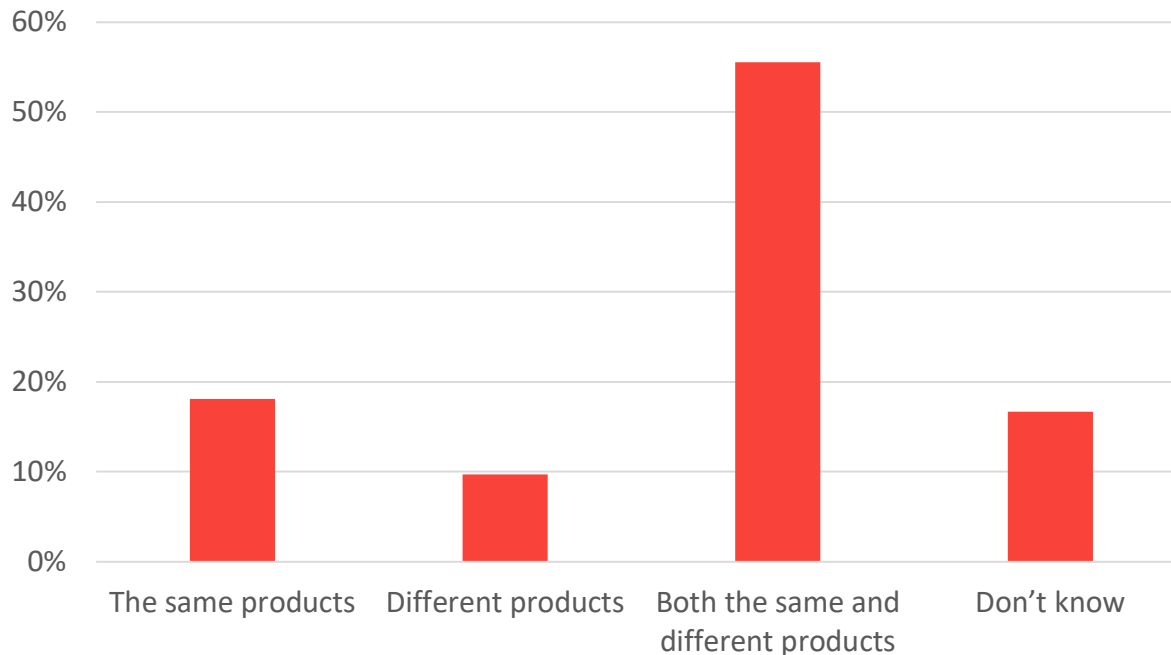
## Q16: How do you see your business in 2050? For each of the following, will there be...?

Answered: 101 Skipped: 34



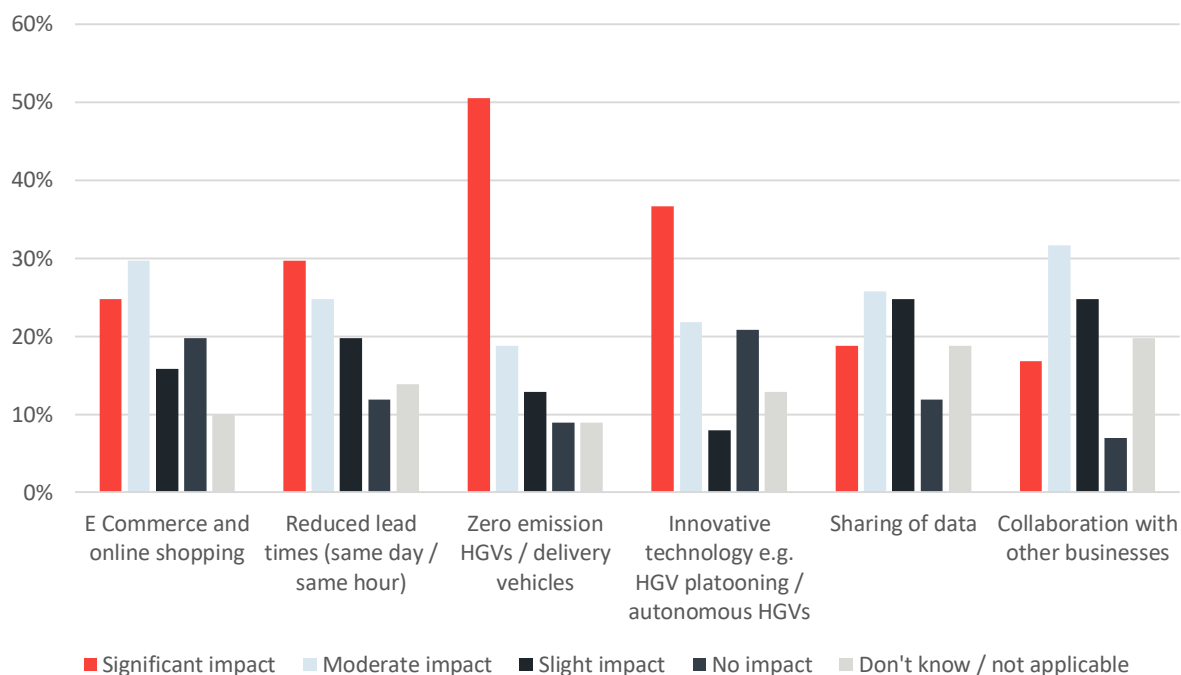
## Q17: In terms of a future increase in products, will your business be moving...?

Answered: 72 Skipped: 63



## Q18: What impact do you think the following trends will have on your business before 2050?

Answered: 101 Skipped: 34



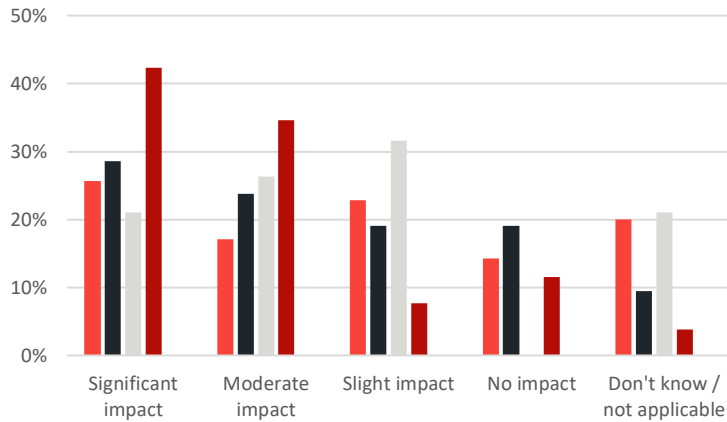
*There was 1 response to 'Other (please specify)'. They stated that digitisation, localism, automation and AV passenger vehicles will have a significant impact.*

## Q18: Insights

- 69 per cent felt that zero emission HGVs / delivery vehicles would have a significant or moderate impact
- Businesses with more than 250 employees were more likely to think that reduced lead times and innovative technology would have an impact
- Businesses that use freight operator/s to transport goods on their behalf were more likely to think that e commerce and online shopping would have an impact
- Businesses that transport goods on behalf of customers were more likely to think that innovative technology would have an impact



### Reduced lead times (same day / same hour)

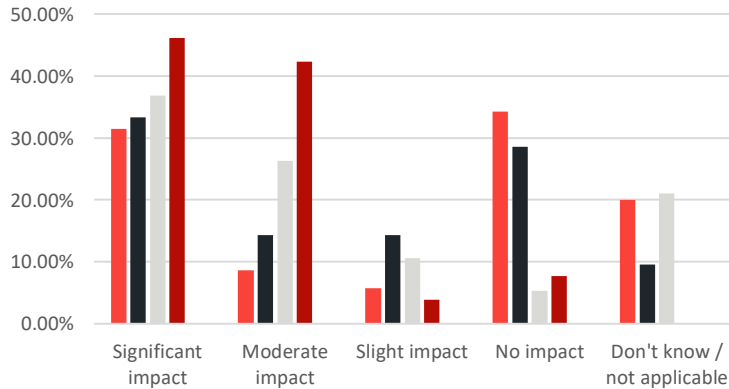


#### Business size



	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q3: 1-9 employees	9	6	8	5	7	35
Q3: 10-49 employees	6	5	4	4	2	21
Q3: 50-249 employees	4	5	6	0	4	19
Q3: 250 or more employees	11	9	2	3	1	26
Q3: Don't know	0	0	0	0	0	0
Total	30	25	20	12	14	101

### Innovative technology e.g. HGV platooning / autonomous HGVs

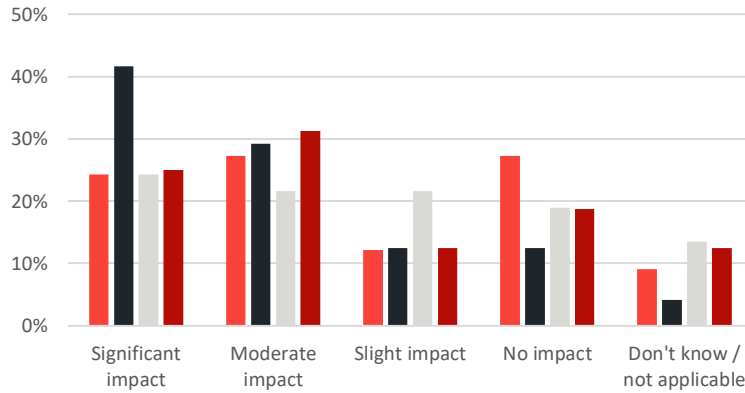


#### Business size



	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q3: 1-9 employees	11	3	2	12	7	35
Q3: 10-49 employees	7	3	3	6	2	21
Q3: 50-249 employees	7	5	2	1	4	19
Q3: 250 or more employees	12	11	1	2	0	26
Q3: Don't know	0	0	0	0	0	0
Total	37	22	8	21	13	101

## E commerce and online shopping

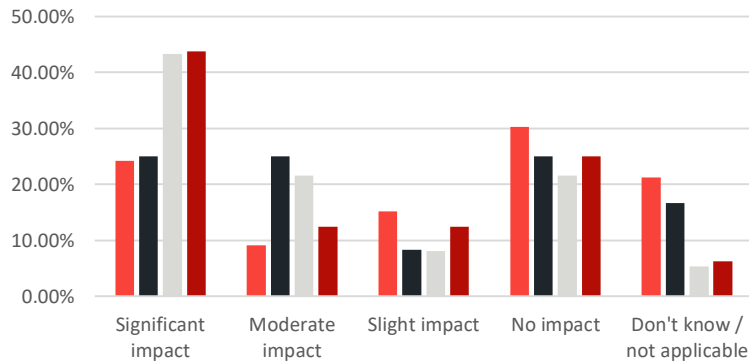


### Business type

- Q5: We transport our own goods
- Q5: We use freight operator/s to transport goods on our behalf
- Q5: We transport goods on behalf of our customers
- Q5: We are a receiver of freight

	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q5: We transport our own goods	8	9	4	9	3	33
Q5: We use freight operator/s to transport goods on our behalf	10	7	3	3	1	24
Q5: We transport goods on behalf of our customers	9	8	8	7	5	37
Q5: We are a receiver of freight	4	5	2	3	2	16
<b>Total</b>	<b>20</b>	<b>22</b>	<b>13</b>	<b>18</b>	<b>8</b>	<b>81</b>

## Innovative technology e.g. HGV platooning / autonomous HGVs



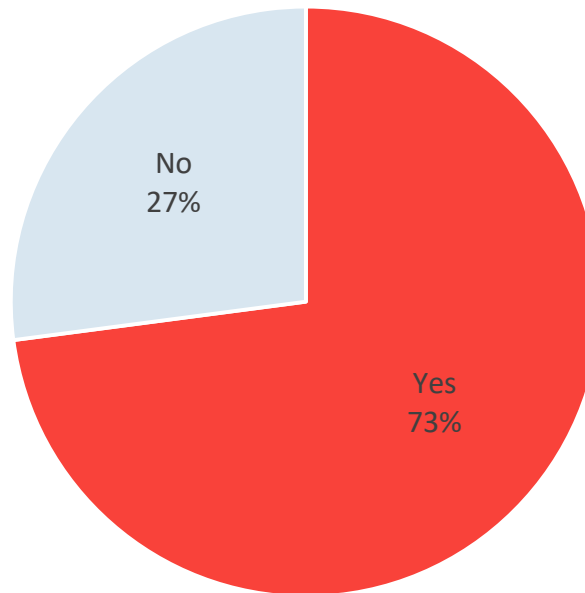
### Business type

- Q5: We transport our own goods
- Q5: We use freight operator/s to transport goods on our behalf
- Q5: We transport goods on behalf of our customers
- Q5: We are a receiver of freight

	Significant impact	Moderate impact	Slight impact	No impact	Don't know / NA	Total
Q5: We transport our own goods	8	3	5	10	7	33
Q5: We use freight operator/s to transport goods on our behalf	6	6	2	6	4	24
Q5: We transport goods on behalf of our customers	16	8	3	8	2	37
Q5: We are a receiver of freight	7	2	2	4	1	16
<b>Total</b>	<b>28</b>	<b>15</b>	<b>8</b>	<b>20</b>	<b>10</b>	<b>81</b>

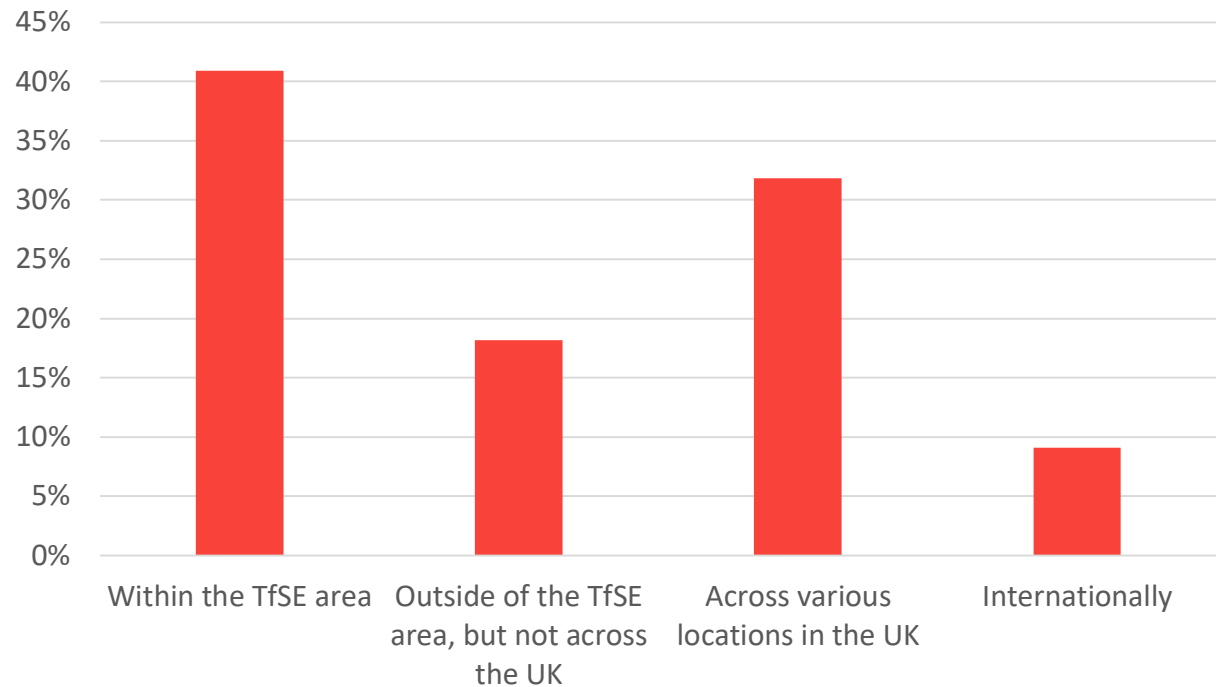
## Q19: Do you foresee your business remaining in its current location/s?

Answered: 96 Skipped: 39



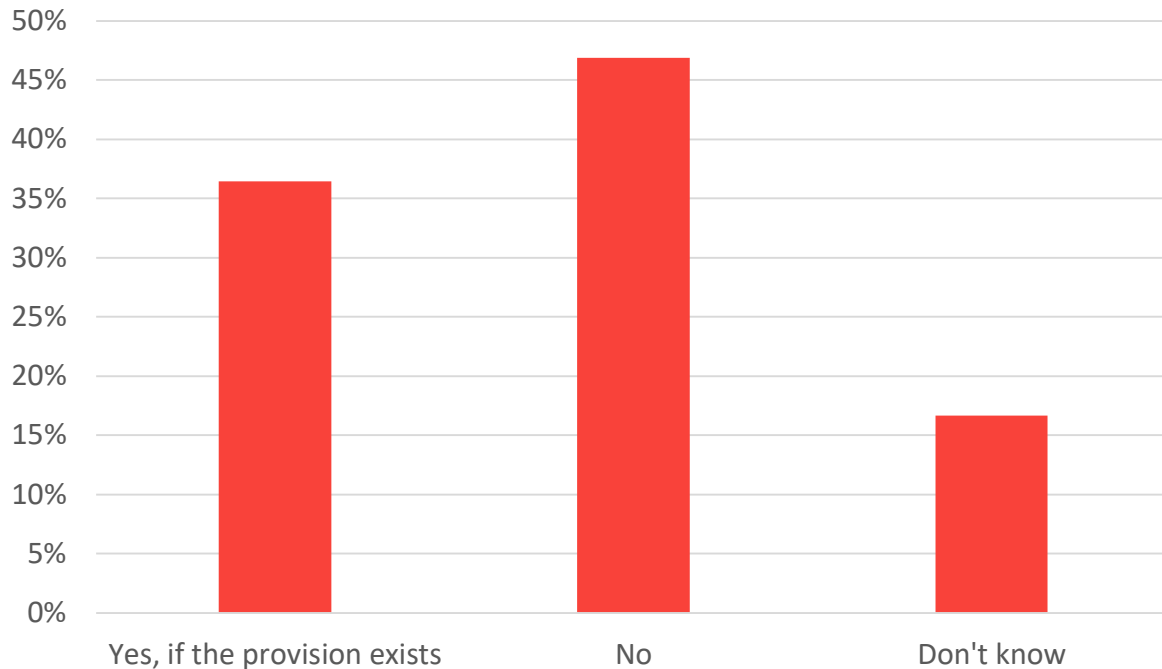
## Q20: Where is your business likely to be located?

Answered: 44 Skipped: 91



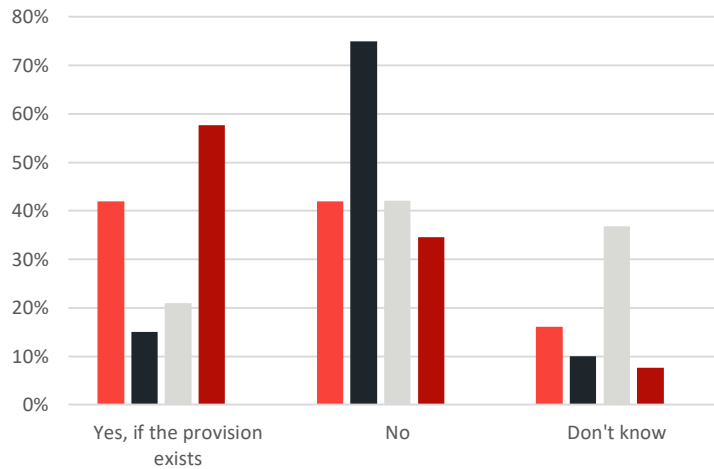
## Q21: Would your business consider switching its mode of moving goods in the future, for example, from road to rail or vice versa?

Answered: 96 Skipped: 39



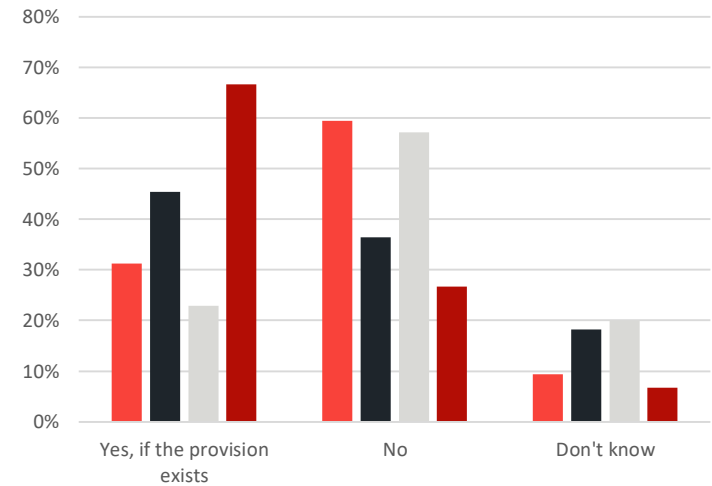
## Q21: Insights

- Businesses at the smaller and larger ends of the spectrum are more likely to consider switching modes than medium sized businesses
- Businesses that transport goods, either for themselves or on behalf of customers, are less likely to consider switching modes
- Businesses that transport their goods by road are less likely to consider switching modes than those that transport goods by other modes



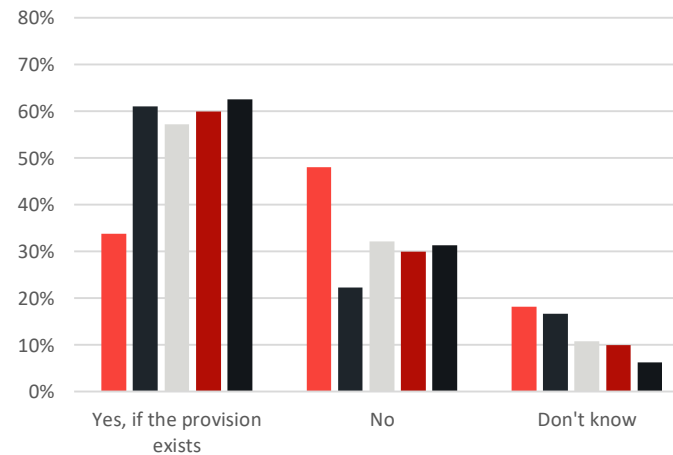
#### Business size

- Q3: 1-9 employees
- Q3: 10-49 employees
- Q3: 50-249 employees
- Q3: 250 or more employees
- Q3: Don't know



#### Business type

- Q5: We transport our own goods
- Q5: We use freight operator/s to transport goods on our behalf
- Q5: We transport goods on behalf of our customers
- Q5: We are a receiver of freight

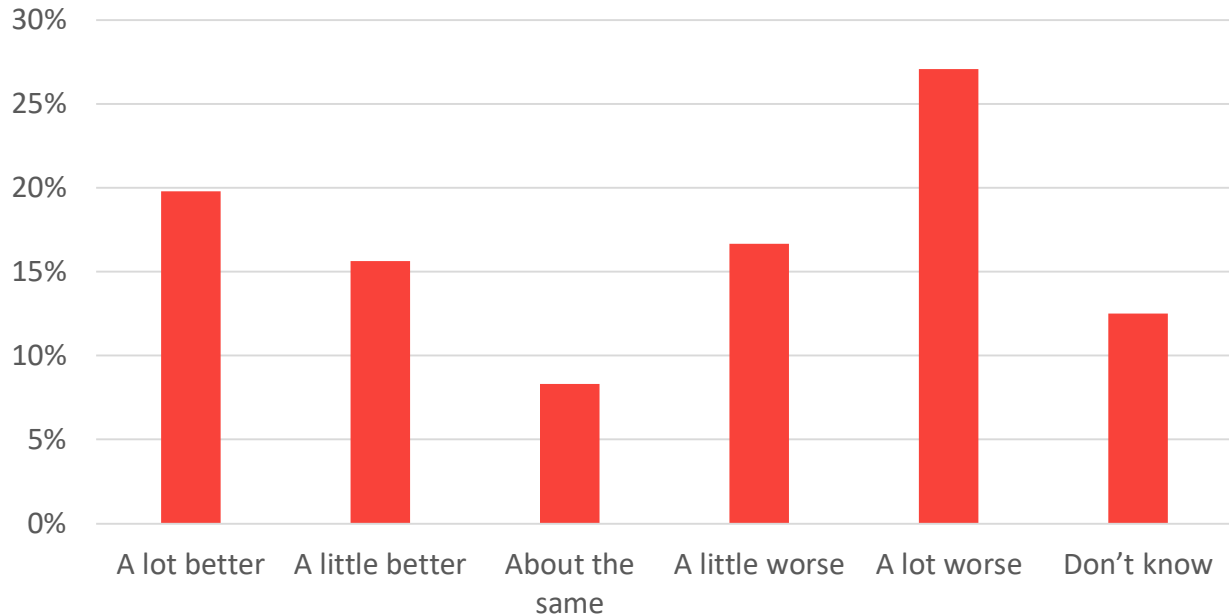


#### Modes of travel

- Q9: By road
- Q9: By rail
- Q9: By water
- Q9: By air
- Q9: It's multi-modal

## Q22: Thinking about the transport network in the TfSE area, do you expect its performance in 2050 to be...?

Answered: 96 Skipped: 39

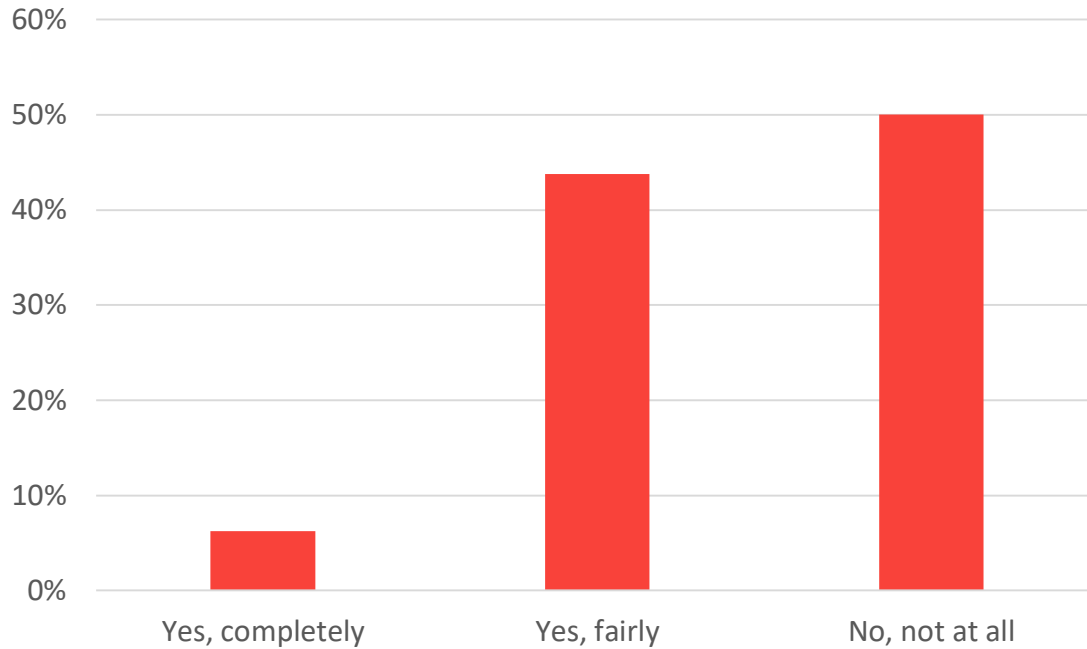


*When asked 'Why do you say that?' 57 responded. Key themes included: congestion, Isle of Wight crossing, advances in technology, rail capacity, TfSE's strategy and role, investment, and growing population / increased housing.*



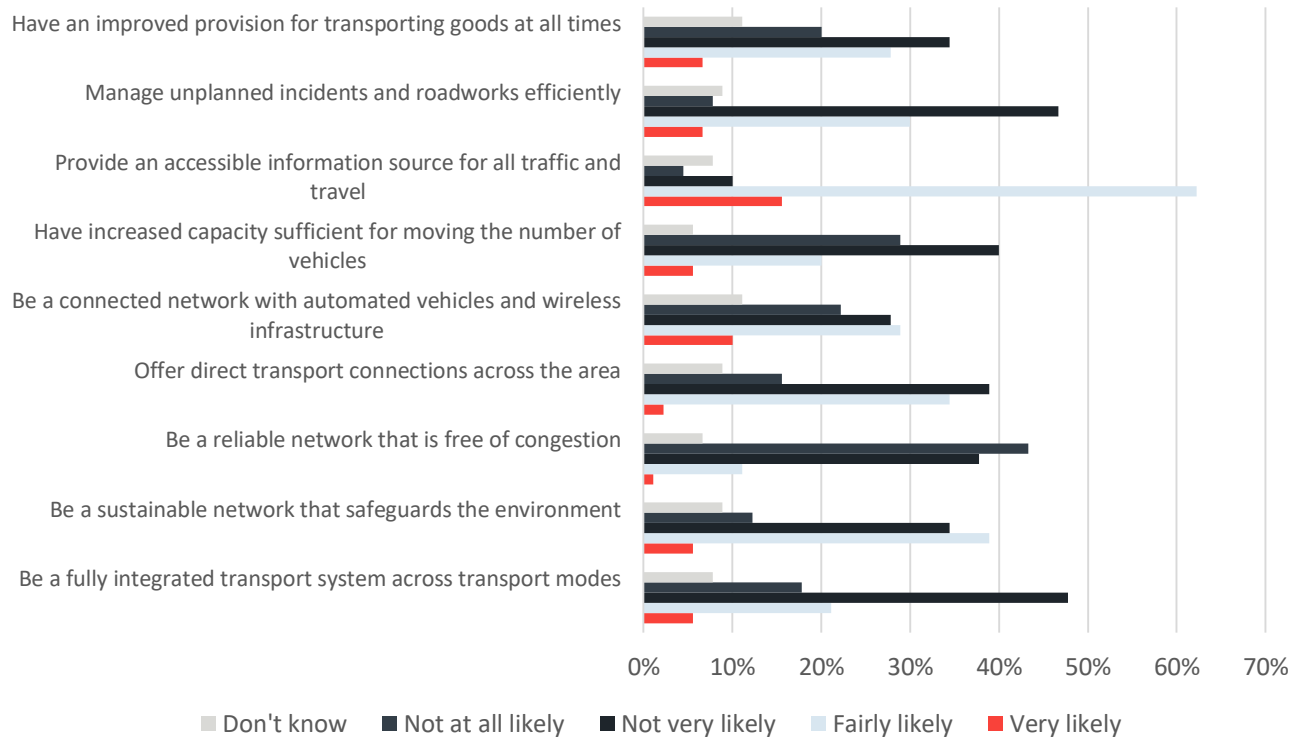
## Q23: As a business, are you optimistic about the future of transport in the TfSE area?

Answered: 96 Skipped: 39



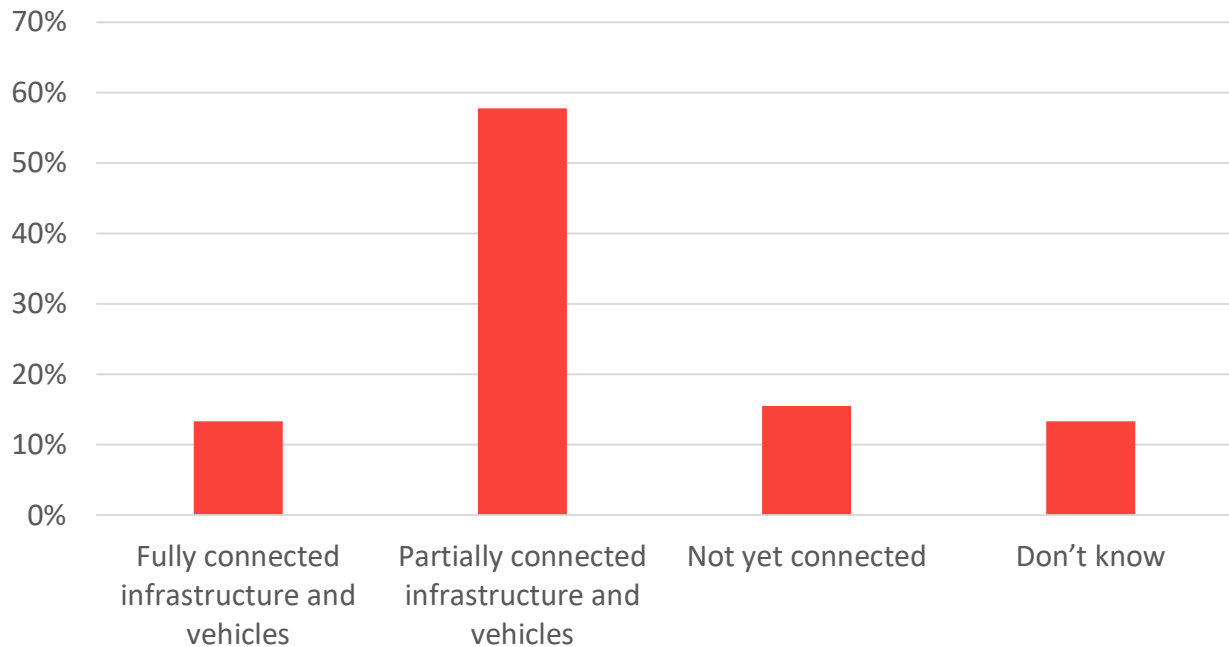
## Q24: Still thinking about the performance of the transport network in the area, how likely is it that it will change in the following ways? By 2050, the network will:

Answered: 90 Skipped: 45



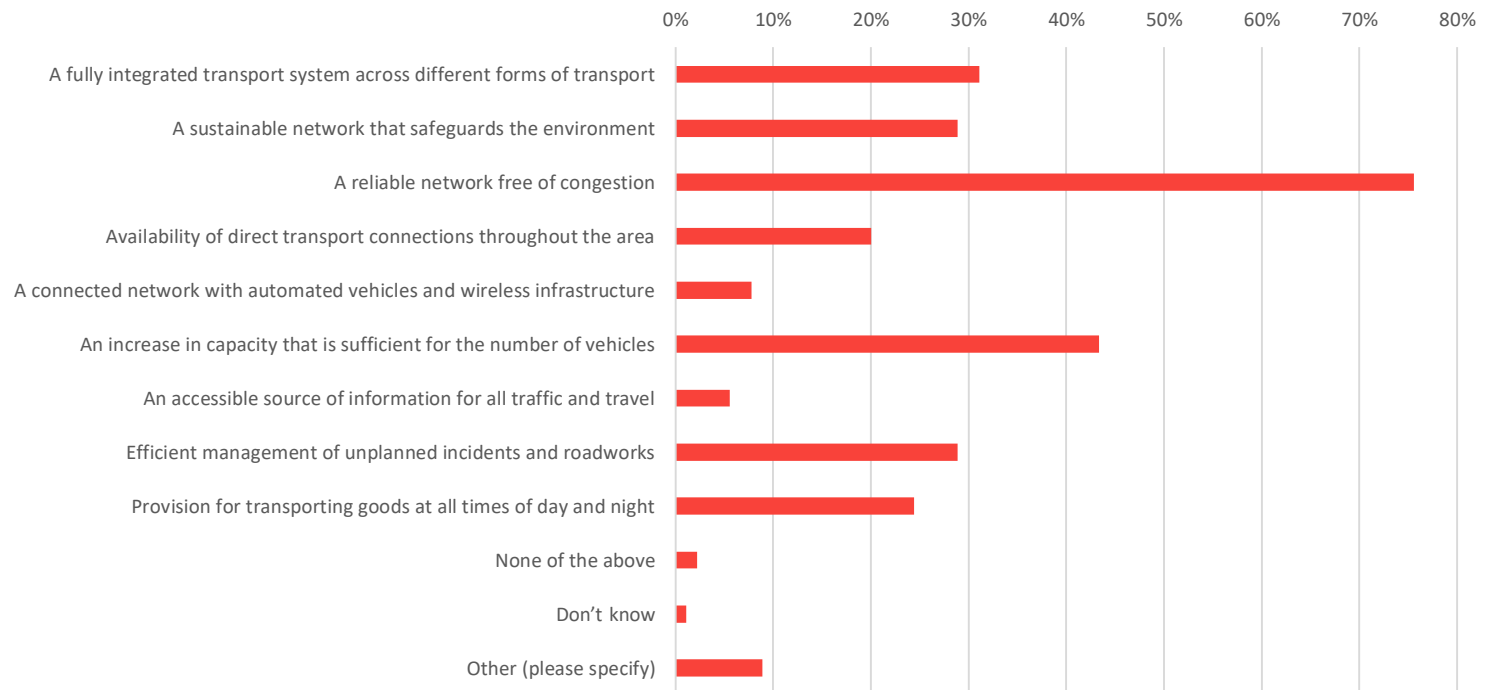
## Q25: In 2050, how connected do you expect the TfSE network to be?

Answered: 90 Skipped: 45



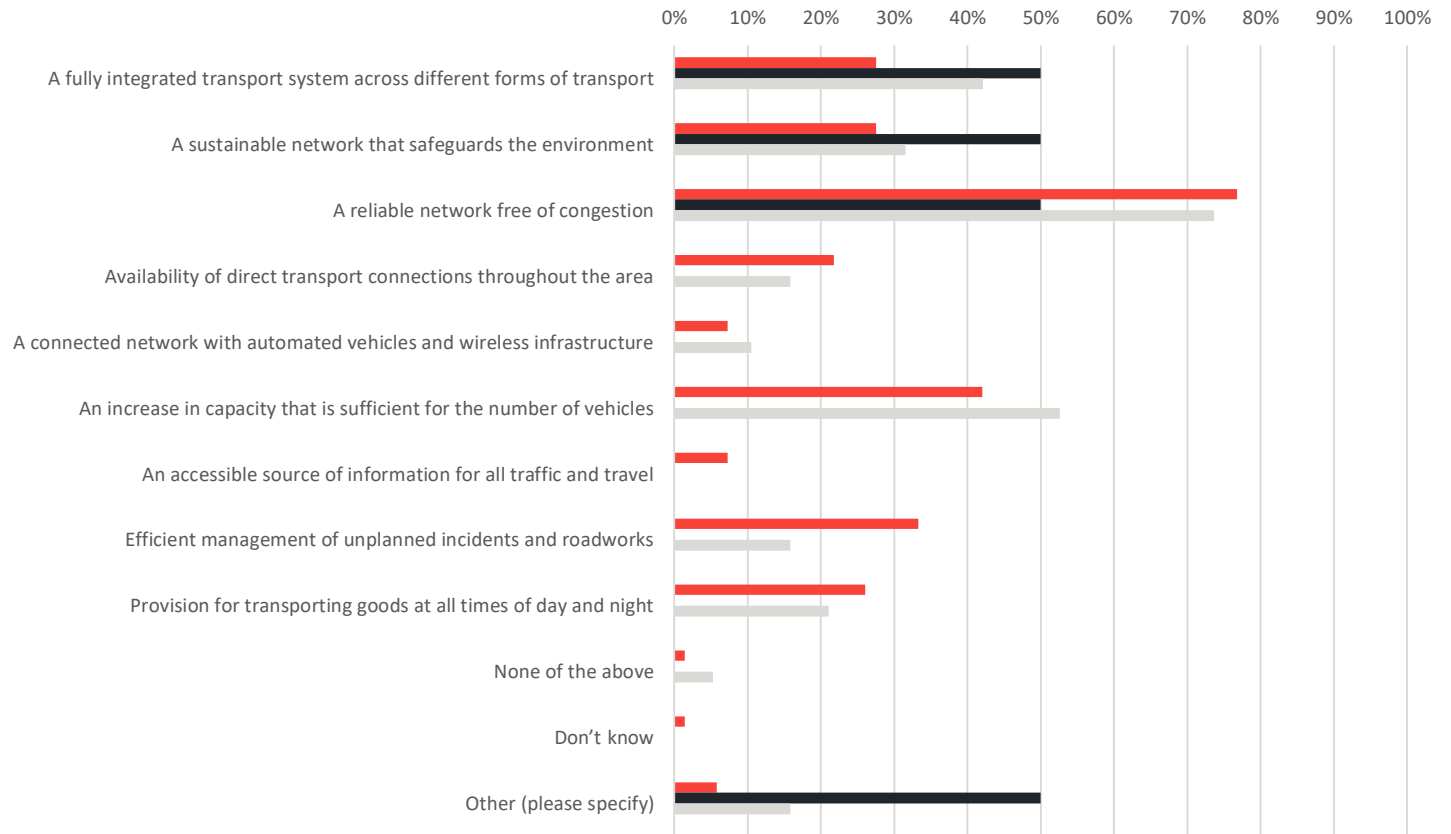
## Q26: As a business, what are your top three priorities for improving the movement of goods in the area?

Answered: 90 Skipped: 45



## Q26: Insights

- The following charts show the response to Q26 based on factors such as business type, size of business, location and modes of travel
- A reliable network free of congestion was the top priority across all groups
- Reduced congestion and increased capacity were most prominent as priorities amongst businesses that transport goods either for themselves or on behalf of customers and businesses that use road or rail
- Over 50 per cent of businesses that use rail or water chose a fully integrated transport system as a priority. 40 per cent of these businesses also selected provision for transporting goods at all times
- There were 8 responses to 'Other (please specify)'
  - 4 stated that their priority was a fixed link between the Isle of Wight and the mainland
  - 1 person each stated that their priority was: increased capability on the rail network; rail and water to be supported by government; east-west links; and long term planning for the road network to accommodate HGVs



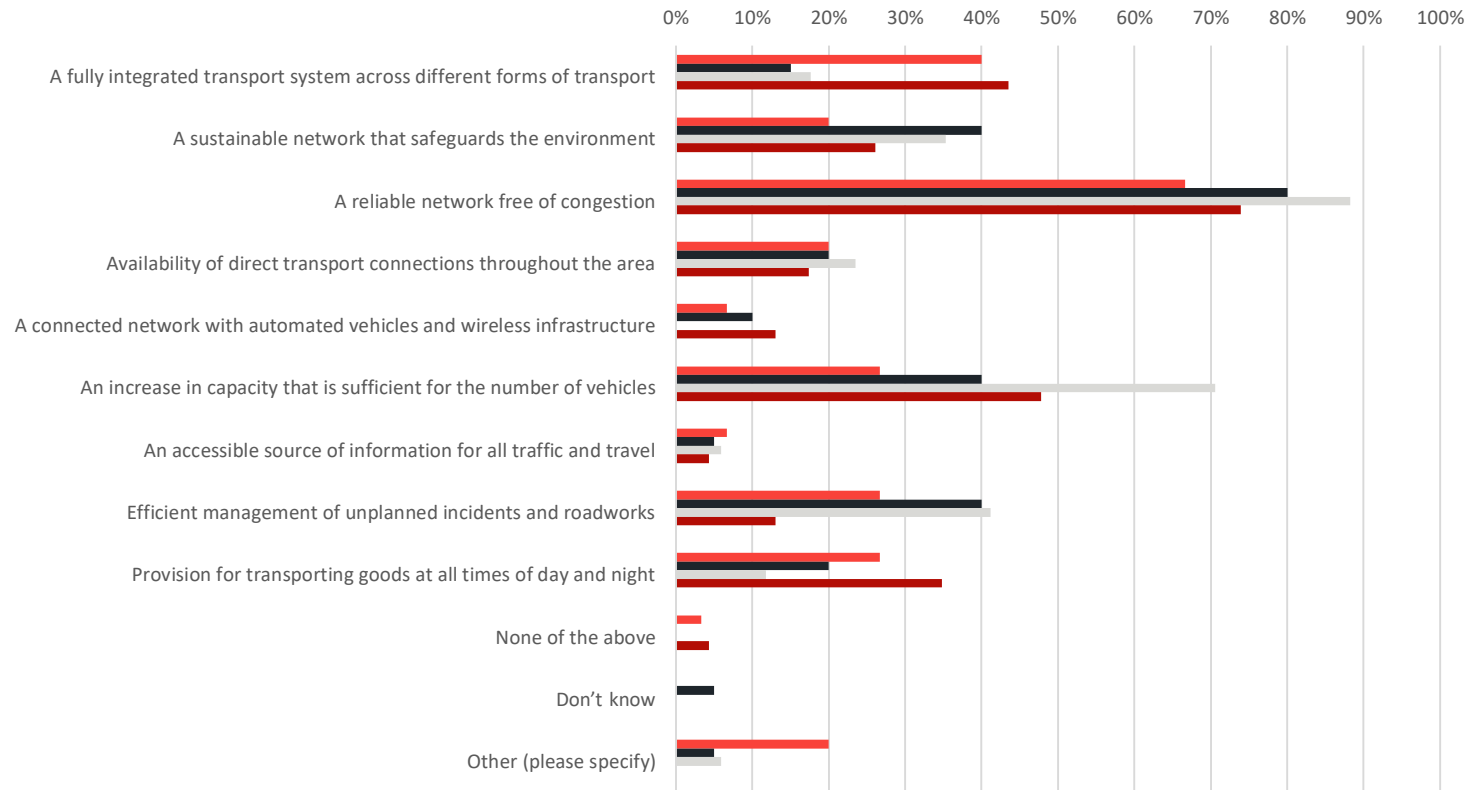
### Business location

■ Q2: Within the TfSE area

■ Q2: Outside the TfSE area, but not across the UK

■ Q2: Across various locations in the UK

■ Q2: Internationally



### Business size

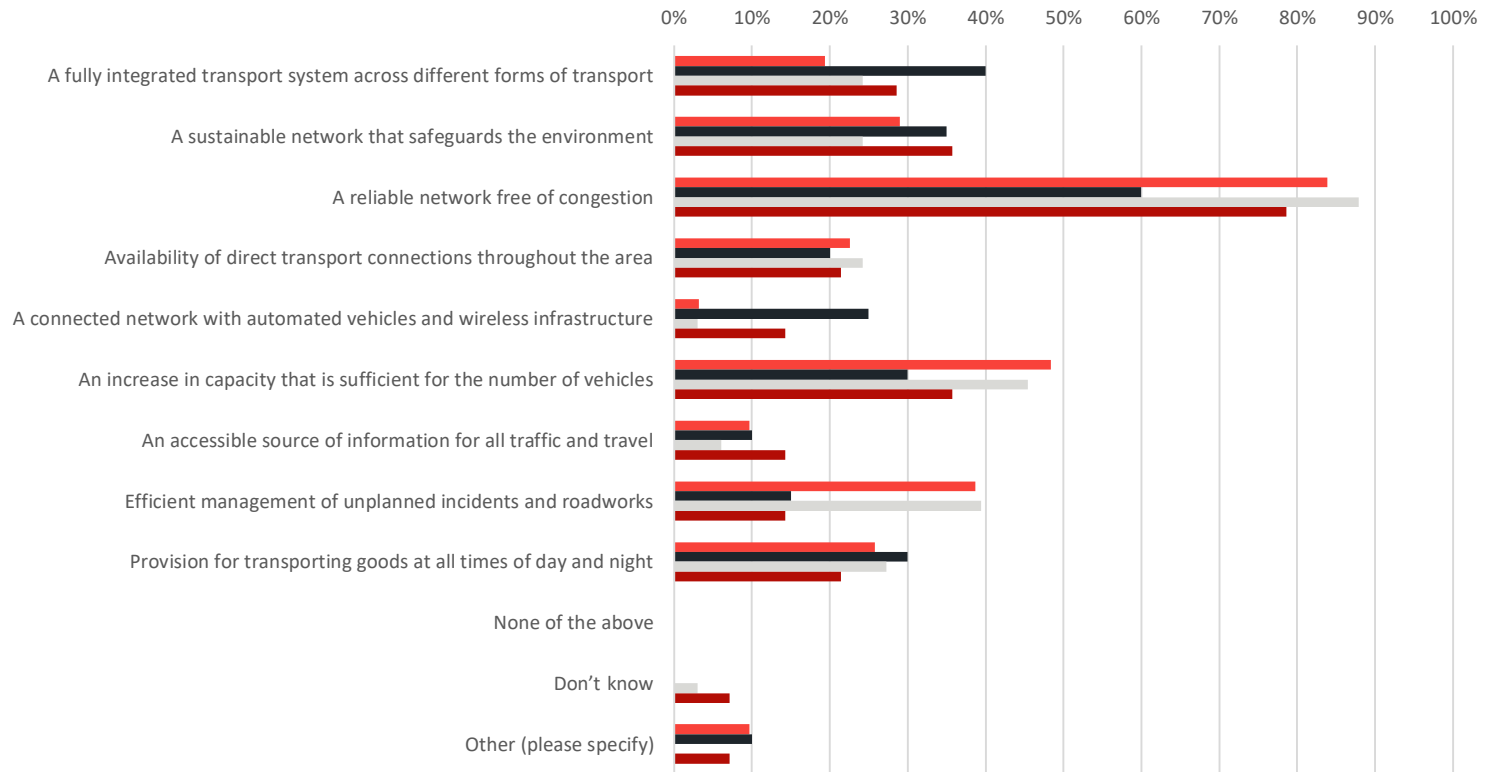
■ Q3: 1-9 employees

■ Q3: 10-49 employees

■ Q3: 50-249 employees

■ Q3: 250 or more employees

■ Q3: Don't know



### Business type

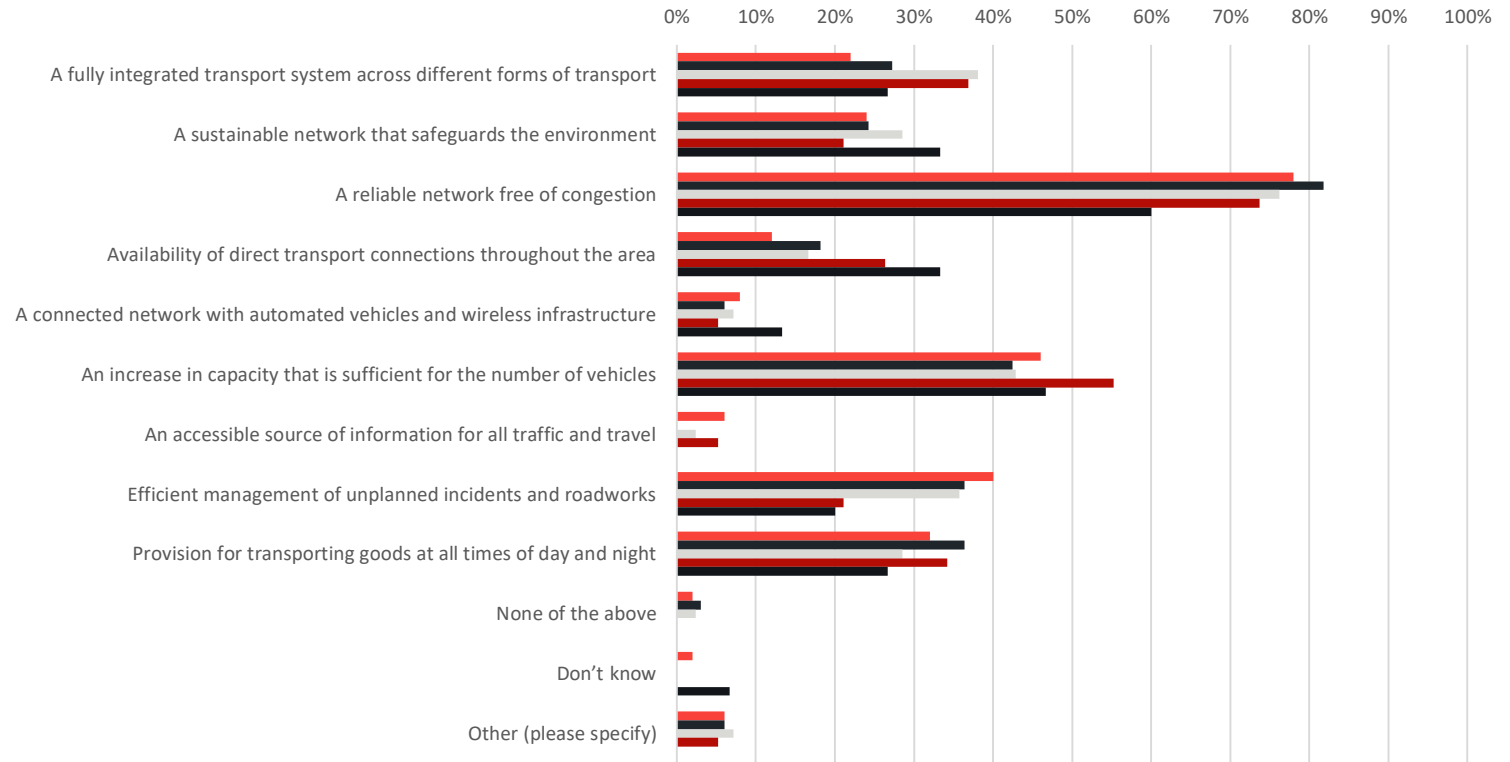
■ Q5: We transport our own goods

■ Q5: We transport goods on behalf of our customers

■ Q5: We use freight operator/s to transport goods on our behalf

■ Q5: We are a receiver of freight





## Routes of travel

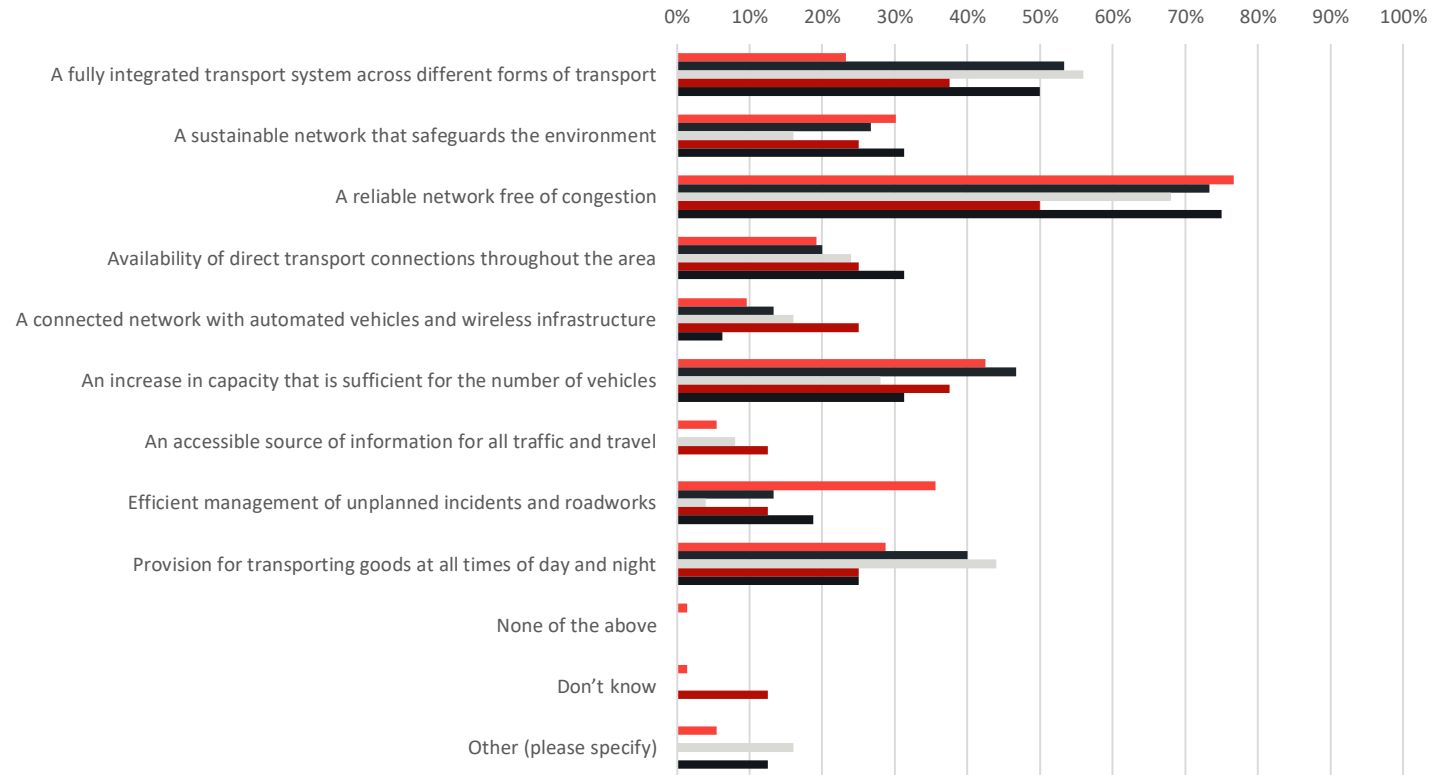
■ Q8: Cross-country routes within the area

■ Q8: Key routes to or from London

■ Q8: Routes to main UK cities or towns

■ Q8: Key routes to and from sea ports / Channel Tunnel

■ Q8: Key routes to and from airports



### Modes of travel

■ Q9: By road

■ Q9: By rail

■ Q9: By water

■ Q9: By air

■ Q9: It's multi-modal

## Q27: Are there any particular pinch points on the network in the area that as a business you want Transport for the South East to be aware of?

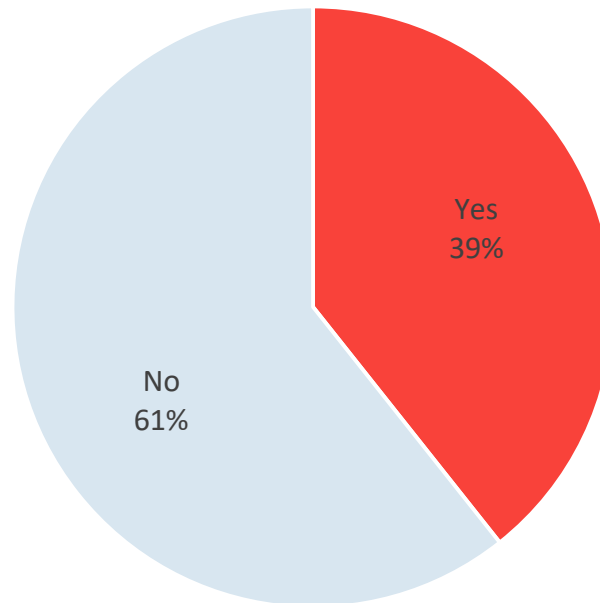
Answered: 52   Skipped: 83

- Central London
- Motorways: M25 (J1A, J1B, J9, J12, J25, J28); M27 (J3 and J4); M271 (Redbridge Roundabout); M3 (J9), M4, M26
- Roads: A27, A34, A281, A3 (Guildford town centre), A2 (Brenley Corner)
- South of M20 towards Hastings
- Dover TAP
- Gatwick triangle
- Coastal access between Chichester - Brighton - Folkestone
- Dartford Crossing
- Isle of Wight ferries
- Reliability / capacity of rail network

# **Relationship with Transport for the South East**

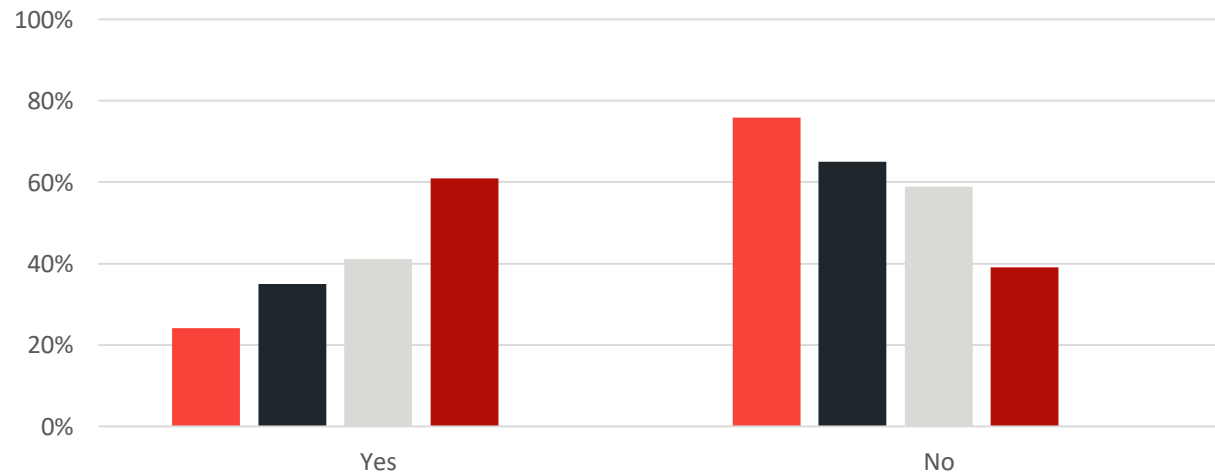
## Q28: Were you aware of Transport for the South East before today?

Answered: 89 Skipped: 46



## Q28: Insights

- 69 per cent of businesses located in the TfSE area were not aware of TfSE before completing the survey
- Large businesses with 250 employees or more are more likely to have heard of TfSE



### Business size

■ Q3: 1-9 employees

■ Q3: 10-49 employees

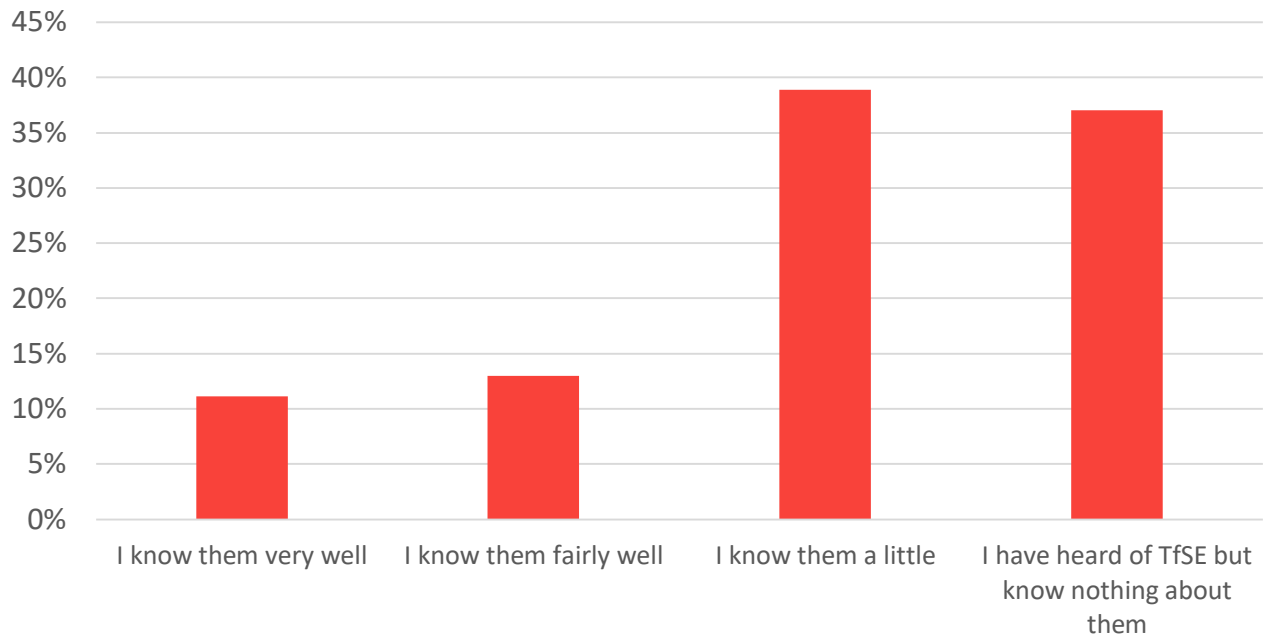
■ Q3: 50-249 employees

■ Q3: 250 or more employees

■ Q3: Don't know

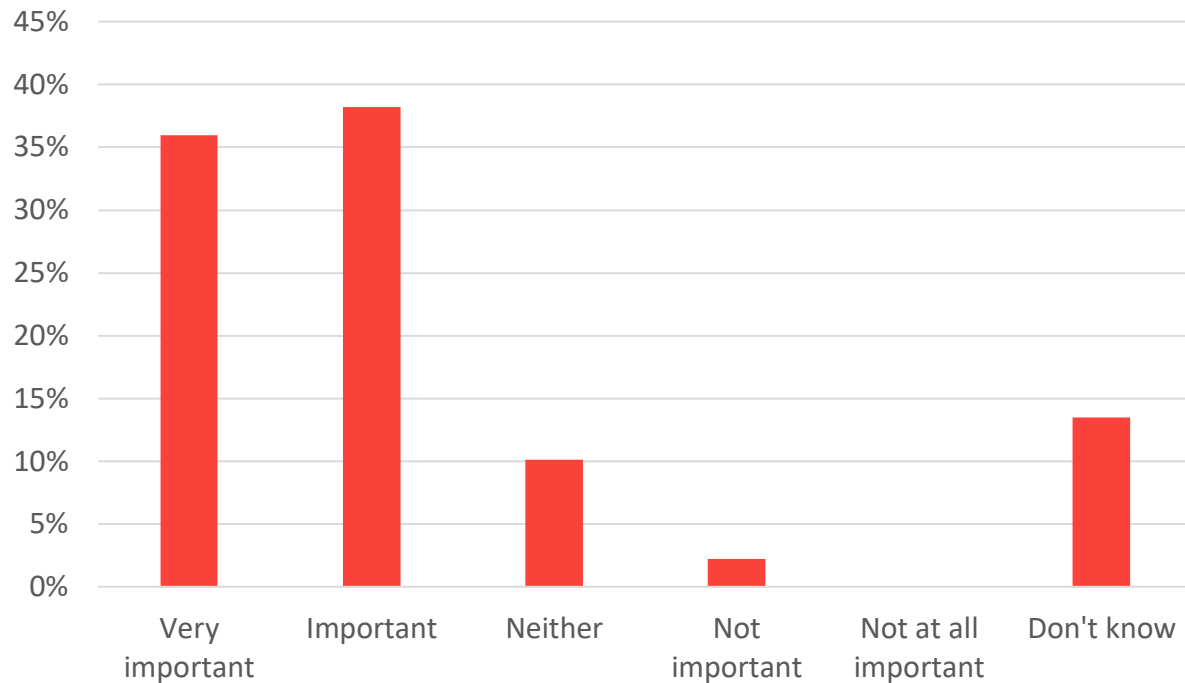
## Q29: How well would you say you currently know Transport for the South East?

Answered: 54 Skipped: 81



## Q30: Moving forward, how important do you think TfSE's role is in shaping transport for the area?

Answered: 89 Skipped: 46





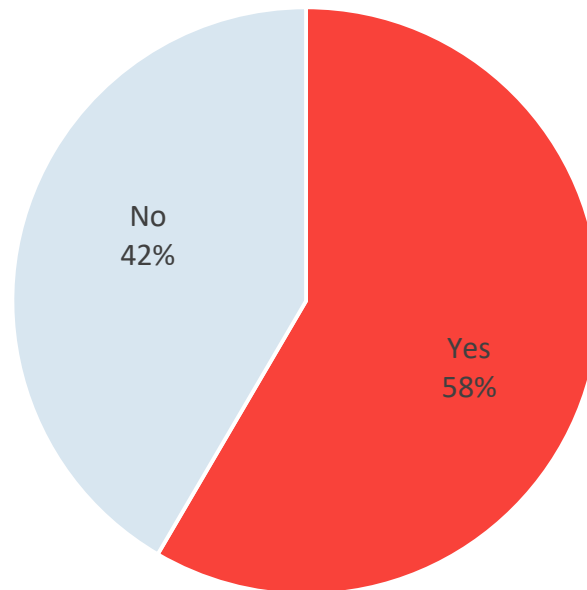
**Q31: Do you have any further comments to make with regards to how Transport for the South East should develop the transport network for businesses that move goods in the area?**

Answered: 32   Skipped: 103

- Rail opportunities
- Integrated strategy
- Public transport
- Fixed link to the Isle of Wight
- Electricity supply
- Heathrow expansion
- Congestion

## Q32: Do you want to receive general updates on the TfSE project?

Answered: 89 Skipped: 46



# Appendix C

## GATEWAY ANALYSIS



## 2 SOUTHAMPTON

### Overview

- 2.1.1. Southampton is the UK's largest export port. Crucially, 90% of which are destined for outside of the EU. Southampton is also the UK's leading vehicle handling port. Around 840,000-900,000 vehicles move across its quayside every year. It is the UK's biggest cruise hub with limited competition.
- 2.1.2. Southampton dominates the south and south west of the UK container market and handles almost 25% of the total UK container traffic. The majority of the containers move is conducted by road although the port is seeking to utilise rail facilities more. DP World own and operate the facility.
- 2.1.3. Liquid bulk at Southampton is channelled through Esso's Fawley refinery, around 10km south of the main port facilities. Fawley processes nearly one-fifth of the UK's daily crude oil requirement.
- 2.1.4. The Port of Southampton supports over 15,00 jobs indirectly and contributes £1bn in GVA (ABP, 2016).
- 2.1.5. ABP which owns the remainder of Southampton port, had an annual profit of £212m (2017). ABP operates 21 ports in total, totalling 87km of quay. ABP handles 100m tonnes of cargo, over 2 million containers and over 1.5 million vehicles per year. ABP also operates one major freight rail terminal near Birmingham which handles around 200,000 TEU per year.

**Table 2-1 – Southampton total volumes, 2010 vs 2017 snapshot comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
Containers	1,564	1,995	3.5%	Thousand TEU
General cargo	39	57	5.6%	Thousand tonnes
Dry bulk	2,237	2,108	-0.8%	Thousand tonnes
Liquid bulk	27,760	21,433	-3.6%	Thousand tonnes
Import/Export motor vehicles	471	875	9.3%	Thousand units
International ferry	1,160	1,648	5.1%	Thousand passengers

### Current/recent major investments

- 2012 – £9m terminal enrichment scheme and £6m Network rail gauge enhancement scheme.
  - 2014 – £150m DP World new quay; £50m in new vehicle export facilities; £5m Mayflower cruise terminal refurbishment; £1.7m road and dock gate improvements.
  - 2016 – £3m efficiency improvement at Herbert Walker Avenue Terminal – serving bulk, vehicle, cruise and container trades.
  - 2018 – Port of Southampton acquires Eling Wharf (41-acre).
- 2.1.6. Southampton has an ongoing investment policy to increase utilisation of the premises it already operates, thus, increasing efficiencies. For example, the Vehicle Booking System (VBS) has been implemented by the container terminal and minimises HGV turnaround time and congestion in the city and port.

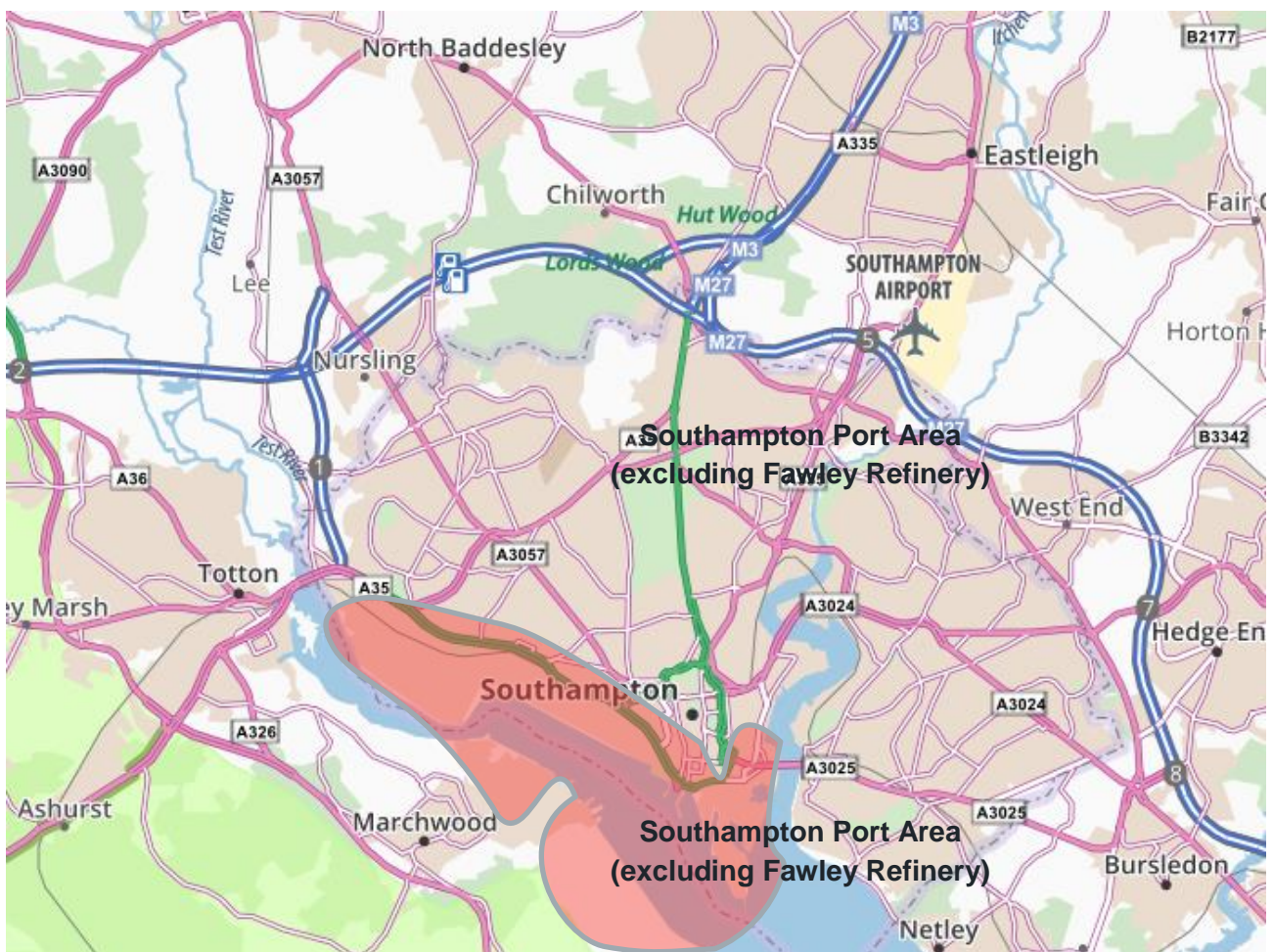
## Network access

- 2.1.7. The port is less than two miles from the M27 and has direct rail links to the main railway network for both freight and passenger trains. The Port of Southampton is served by Southampton International Airport, while Gatwick and Heathrow airports are also relatively close.

**Table 2-1 – Southampton network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 11km LHR: 111km LGW: 136km	A35 M27 M271 M3	130-140km	Midlands, “Golden Triangle”	Containers General cargo Dry bulk Liquid bulk Import/Export auto International ferry

**Figure 2-1 – Southampton Port map (Michelin, 2019)**



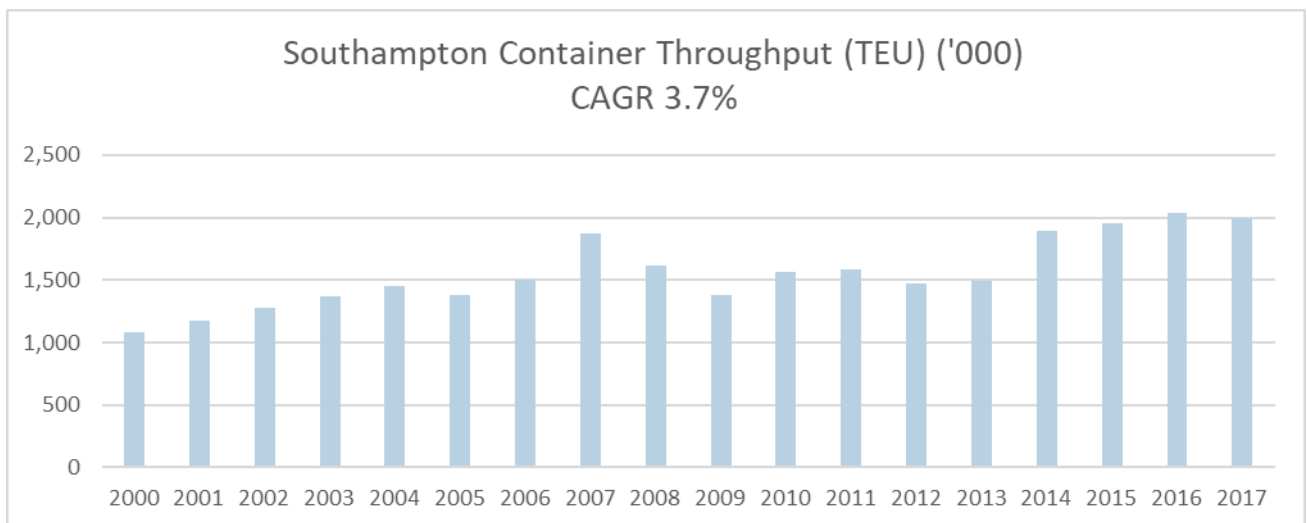
Southampton, as a top three volume UK container terminal has a dependence on strategic road network given the volume of HGV traffic it generates. The port’s ability to continue to attract trade through its terminals depends on having reliable connectivity to the SRN.

## Commodities

**Table 2-2 – Container details**

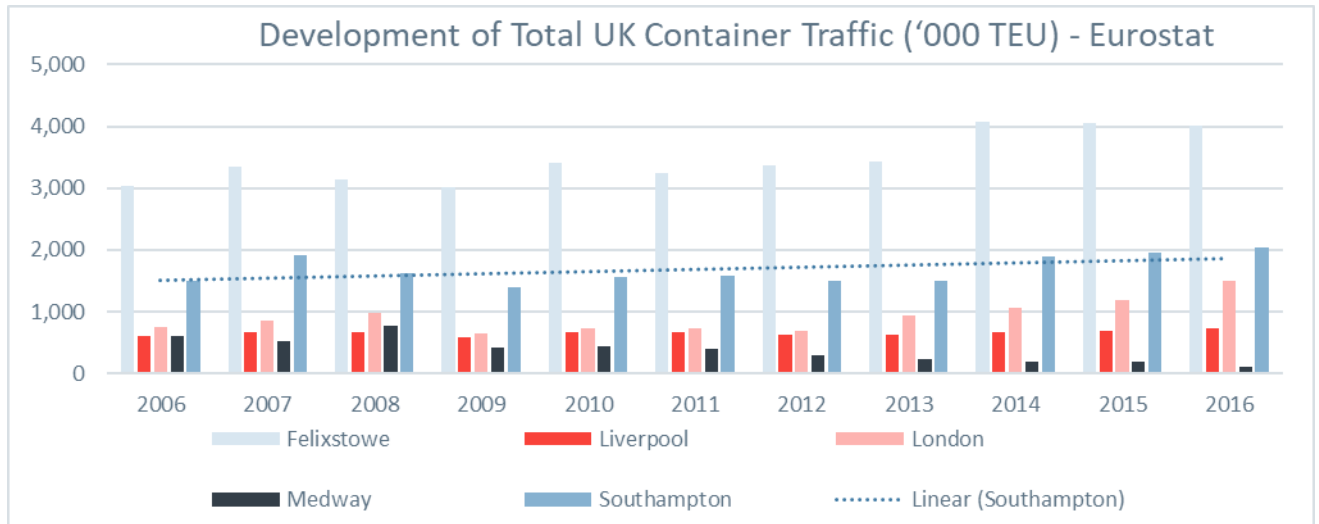
Containers	
Terminal(s)	1 - ULCS ready (Ultra Large Container ships of over 10,000 TEU)
Owner	DP World (Dubai Ports World – also owner of London Gateway)
Operator	Southampton Container Terminals Limited
Capacity	Capacity – 2,500,000 TEU/600 refrigerated containers Cranes – 15 quaysides
Road/ Rail links	Of 2016's 2,040,000 containers handled, 60% of containers are transported by road (down from 70% in 2009)
Description/	UK's most productive container terminal. Southampton handles around 24.3% of UK container traffic (2016)
Trend	2000 to 2017 compound annual growth rate 3.7%

**Figure 2-2 – Southampton container throughput (DfT, 2017)**



Note – Compound Annual Growth Rate (CAGR) provides an indication of the average annual growth rate over a time period. It is the constant annual growth rate that would deliver the total growth in the specified period. CAGR is especially beneficial as it is not hampered by individual volatilities as with standard % growth rates. When used as a standard across this port review, it provides a clear indicator of performance.

**Figure 2-3 – Development of total UK container traffic (EuroStat, 2019)**



**Table 2-3 – Southampton general cargo (EuroStat, 2019)**

Terminal(s)	1 Fruit
Owner	Southampton Fruit Terminal
Capacity/Description	Fruit imports into Southampton arrives predominantly from the Canary Islands and equates to around 100,000 pallets p.a.
Trend	2010 to 2017 compound annual growth rate 5.6%

**Table 2-4 – Southampton dry bulk (EuroStat, 2019)**

Terminal(s)	4 Grain, Iron Ore, and General non-utilised, and Scrap metal
Owner	ABP and private enterprise
Capacity/Description	Grain, Ore, Iron, general non-utilised are all catered for at Southampton. Scrap metal exporting facility
Trend	2010 to 2017 compound annual growth rate -0.8%

**Table 2-5 – Southampton liquid bulk (EuroStat, 2019)**

Terminal(s)	2
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Owner	Esso
Capacity/ Description	Oil refinery at Fawley and the marine fed fuel terminal at Hamble form one of the UK's leading hubs for the import and export of liquid bulk oil and fuel cargoes
Trend	2010 to 2017 compound annual growth rate -3.6%

**Table 2-6 – Southampton passenger ferry and cruise (EuroStat, 2019)**

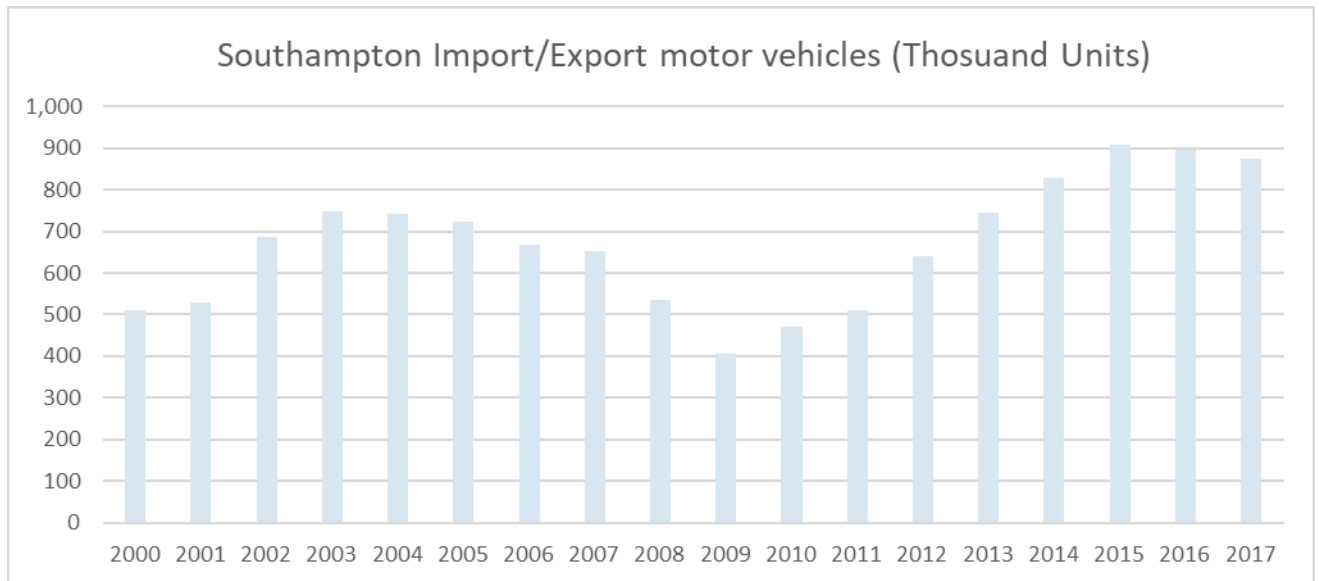
<b>Terminal(s)</b>	<b>4 (1 ferry &amp; 3 cruise)</b>
Owner	ABP and private enterprise (Pacific RoRo, Eastern RoRo)
Operator	4 cruise operators; Mayflower Cruise Terminal, City Cruise Terminal, Ocean Cruise Terminal, and QEII Cruise Terminal
Capacity/ Description	Ferry service to the Isle of Wight Investment and renovations in cruise terminals anticipated to increase demand for leisure passengers
Trend	2010 to 2017 compound annual growth rate 5.1%

**Table 2-7 – Southampton RoRo – import/export auto (EuroStat, 2019)**

<b>Terminal(s)</b>	<b>3</b>
Owner	ABP and private enterprise (Pacific RoRo, Eastern RoRo)
Capacity/ Description	Southampton Port is the UK's number one vehicle handling port with around 840,000 vehicles moving over the quay every year.
Trend	Import / export car market from 2010 to 2017 compound annual growth rate 9.3%. Volumes peaked in 2015 and have been declining since.

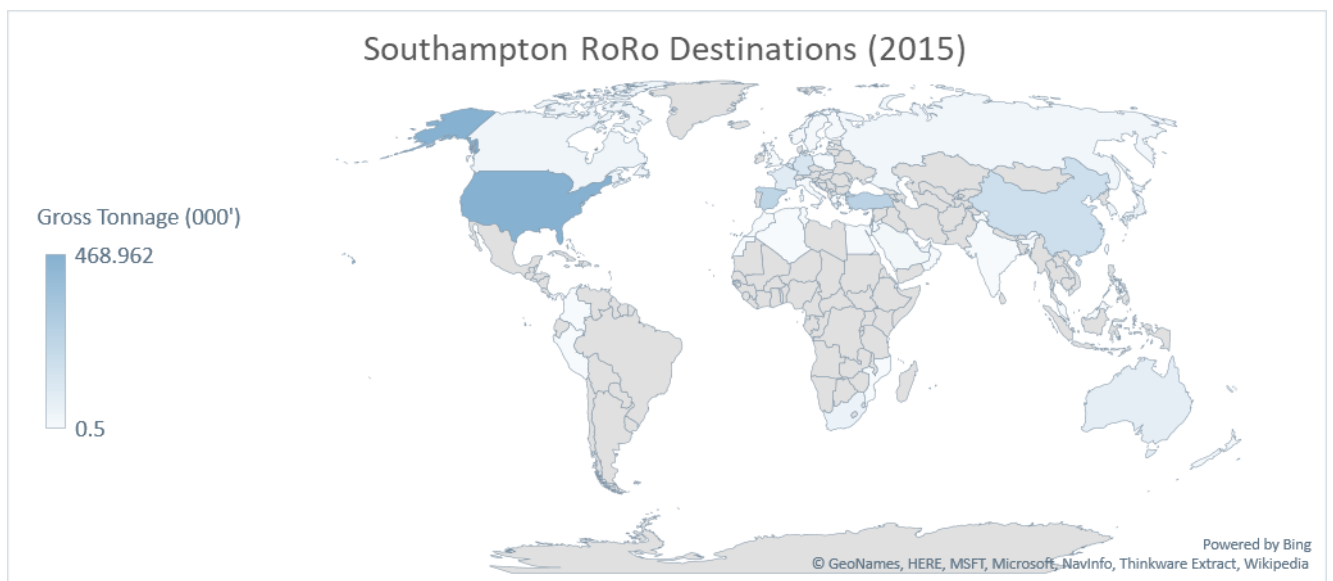


**Figure 2-4 – Southampton export/export auto (EuroStat, 2019)**



There are 11 shipping lines servicing 3 terminals which make 150 calls to 54 ports in 41 countries.

**Figure 2-5 – Southampton destinations (Wikipedia, 2019)**



## Port of Southampton SWOT Analysis

**Table 2-8 – Southampton SWOT analysis**

SWOT			
Strengths	<b>Exports not reliant on EU market</b> Trade risks featured in Brexit are less likely to disrupt Southampton's trade movements to non-EU countries	<b>Deepwater berth for Ultra Large container ships</b> Containerships continue to increase in size and efficiencies. Having capacity for the largest ships is an attractive selling point	<b>UK cruise hub</b> Established cruise hub with limited competition throughout the UK

Weaknesses	<b>Bulk forecasts high</b> With a bulk market slowdown, the Port's indication that more bulk is expected can be a sign of over optimistic projection	<b>Container quayside capacity limited</b> Container yard capacity growth is limited by road and land space. Growth of land area will be highly expensive	<b>Liquid bulk facilities</b> Demand for liquid bulk set to decline (excluding Liquid Natural Gas), requirement for facilities and labour likely to decline
Opportunities	<b>Strategic land available</b> Southampton owns land on the adjacent side of the river which could be utilised for greenfield investments including port centric logistics opportunities	<b>Further utilisation of rail</b> More use of rail could reduce road congestion and provide better relations with city of Southampton	<b>Linkages with Southampton Airport</b> Air freight capacity available at Southampton airport
Threats	<b>Sensitive to automotive manufacture sector</b> Import/Export vehicle demand uncertainty as global electrification of vehicles advances and supply chains adapt	<b>City road network fragile</b> Road use highly sensitive to congestion not resilient to an increase with cargo capacity growth	<b>Threat of Portsmouth</b> Facilities available to provide an alternative to Southampton if congestion impacts service

### Summary of growth to maximise potential

- 2.1.8. Continued expansion or efficiency upgrades in the road network could give Southampton further /quicker access to the hinterland markets of the South West and Midlands. Bristol port has no feasible development plans to compete with Southampton and Liverpool a competitor albeit only for a limited hinterland in the West Midlands. Liverpool has however recently developed a container terminal and attracted one Chinese Shipping call – albeit due to issues at Felixstowe. As a result Southampton's hinterland transport costs need to be price competitive to ensure the market remains and deters further Far-East calls to Liverpool.

### Opportunity to develop the port further

- 2.1.9. An export and import dynamic shift could be expected as the UK may rely more heavily on shipping from non-European nations. Southampton already has strong links with the Far East and the possibility of an increase in demand could be expected to substitute drop in activity with the UK's neighbours. APB have a reserved land holding on the opposite side of the river which could be utilised for greenfield investment if demand surpasses current capacity.
- 2.1.10. The RoRo industry poses a limited risk in Southampton case as many car manufacturers have the EU mainland as their primary destination. Japanese car manufacturer Nissan have already indicated a plant shutdown.
- 2.1.11. The opportunity for Southampton to become a transit hub, i.e. create short sea shipping around the UK Isles would require further study outside this scope. Generally, if congestion is an issue, and hinterland links are ineffective, then short sea shipping could be considered as an option to alleviate these pressures and to redistribute port traffic throughout the UK. As these factors are not the case, there is not a significant benefit of doing so.

### Conclusion

- 2.1.12. Southampton Port has good market positioning in the container sphere and has shown continued growth across most commodity groups. The undeveloped land owned by Southampton port is an important asset that could be expanded with any future demand developments, subject to planning and environmental approvals. It should be noted that Felixstowe and London Gateway, as the two other major UK container terminals, with significantly less congested road networks surroundings and modern facilities, pose the biggest competitive threat in serving the UK from eastern markets – specifically Asia.

### 3 PORT OF DOVER

#### Overview

- 3.1.1. Dover is the busiest international RoRo port in Europe based on volume. Annually 2,600,000 freight vehicles are handled at the port and around 50% of the traffic goes beyond the South-East region in the UK.
- 3.1.2. Dover is currently served by ad-hoc refrigerated freight calls as well as scheduled liner refrigerated freight services. The port's established trade routes are; the Peru - Ecuador - Europe refrigerated service of Seatrade, and the Geest Lines' Caribbean - Europe refrigerated service. These services are handled at the Eastern Docks.
- 3.1.3. The Port of Dover handles 17% of the UK's total trade in goods and recorded an operating profit of £10.2m (2017).

**Table 3-1 – Dover total volumes, 2010 vs 2017 snapshot comparison**

	2010	2017	CAGR	Units/description
RoRo	23,029	25,355	1.4%	Road goods vehicles with or without accompanying trailers (thousand tonnes)
Containers	0	7	n/a	Thousand TEU
General cargo	272	267	-0.3%	Thousand tonnes
Dry bulk	161	22	-24.7%	Thousand tonnes
Passengers	2,813	1,959	-5.0%	Thousand units
Import/Export motor vehicles	0	1	n/a.	Thousand units

#### Current/recent major investments

- 2017 – £115m Marine civil engineering contract for Dover Western Docks Revival (DWDR).
- Part of DWDR;
  - 2019 – Two Konecranes Gottwald Model 5 mobile harbour cranes - port's new multipurpose terminal as part of Dover's Western Docks redevelopment program.
  - 2019 – £15m temperature-controlled warehouse that will form the core of the Refrigerated Cargo Terminal (RCT) - part of Dover's Western Docks Revival (DWDR) project. The new refrigerated RCT and multipurpose terminal will replace the last remaining cargo berth in Dover's Eastern Docks – this will allow construction of additional finger piers for RoRo passenger ferries.
- 3.1.4. Investments from Dover through the DWDR project will diversify the commodity capabilities of the Port. With Dover's strong market presence, they are investing to attract additional freight from non-RoRo shipping.

## Network access

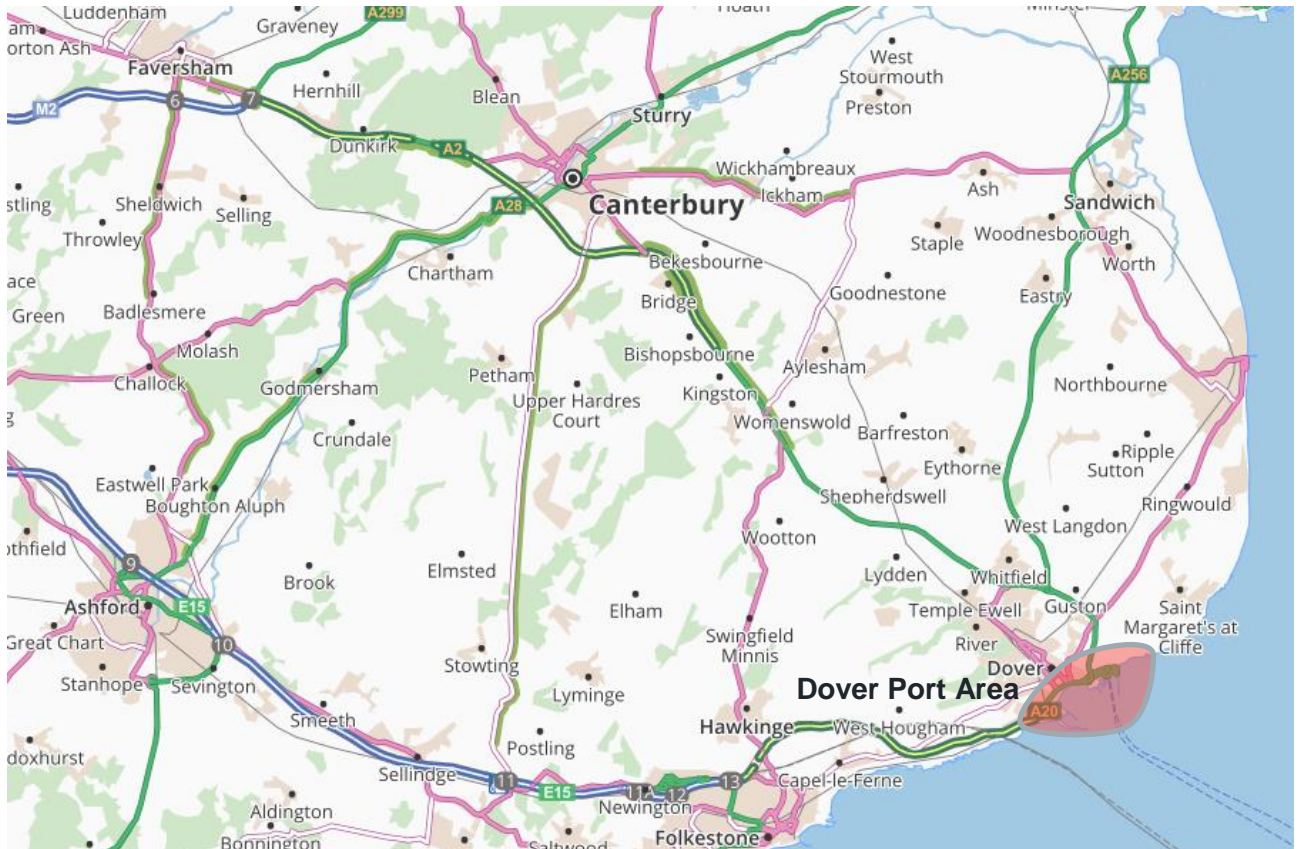
- 3.1.5. Dover is well connected from a road perspective, however, is prone to issues when there are blockages at the port and there are procedures in place to combat this with Operation Stack and subsequently Operation Brock. There is currently no rail freight operation.

**Table 3-2 – Dover network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 240km LHR: 127 km LGW: 168 km	M20 direct to A20 link M2 to A2 link M20 M2 A20 A2	133 km	Half of the vehicles going beyond the South East, typically to the Midlands and the North	General cargo Dry bulk Passengers Import/Export auto Project Cargo Grain Timber

- 3.1.6. Since April 2015, new traffic restrictions have been in place to help Dover's residents go about their business without disruption from traffic using the Port, and to improve air quality in the town. This scheme is known as Dover TAP. This means:
- A 40mph speed restriction which applies to all vehicles approaching Dover from the west via the A20. This operates all day, every day.
  - Lorry drivers heading for the Port should remain in the left lane of the A20, from the Roundhill Tunnel all the way to the Port.
  - At peak times, lorries queuing in the left lane will be held by traffic lights at the entry to Dover until space at the Port becomes available.
- 3.1.7. In addition, lay-bys in the area will be closed, as will the coast-bound on-slip at the Courtwood junction on occasion.
- 3.1.8. Operation Brock is a set of measures to keep the M20 open in both directions between junctions 8 and 9 in the event of disruption to services across the English Channel, by using different holding areas. The queuing system only applies to lorries heading to mainland Europe from Kent. All other drivers should check conditions before setting out and, if they're crossing the channel, check with their service operator for updates.
- Phase 1 – In the event of excessive disruption to services across the English Channel, improved holding capacity in the Port of Dover and Eurotunnel, as well as on the A20 approach to the port (Dover TAP), would be used.
  - Phase 2 – If phase 1 capacity is reached, we will start queuing Europe bound lorries that are 7.5 tonnes and over on the coast bound section of the M20 between junction 8 and 9 with cars and other vehicles using a contraflow on the London-bound carriageway.
  - Phase 3 – If phase 2 becomes full, lorries heading for Port of Dover will be directed to Manston Airfield, while the M20 is used to hold traffic for Eurotunnel. Traffic lights on the A256 after Manston Airfield will help to manage traffic arriving at the port.
  - Phase 4 – If the M20 holding area and Manston becomes full, the M26 could be used to hold additional lorries heading for Eurotunnel.

**Figure 3-1 – Dover Port map (Michelin, 2019)**



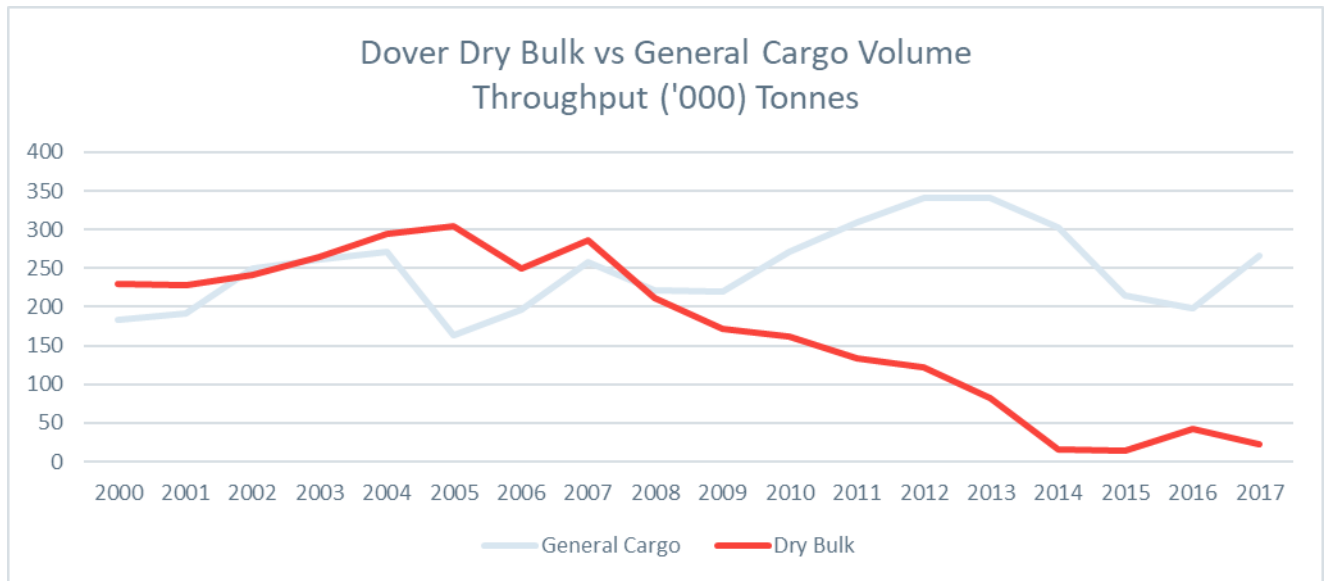
## Commodities

**Table 3-3 – Bulk / general cargo & refrigerated containers**

<b>Terminal(s)</b>	<b>1 (2 once completed)</b>
<b>Owner</b>	Port of Dover Harbour Board, Dover Eastern Docks Refrigerated Berth New terminal Western Dock to be completed
<b>Capacity</b>	300,000 tonnes and 9,000 containers moved per year
<b>Description</b>	Upgrade of facilities and growth potential to be realised upon DWDR completion.
<b>Trends</b>	2010 to 2017 compound annual growth rate for dry bulk -12.9%; general cargo 2.2%



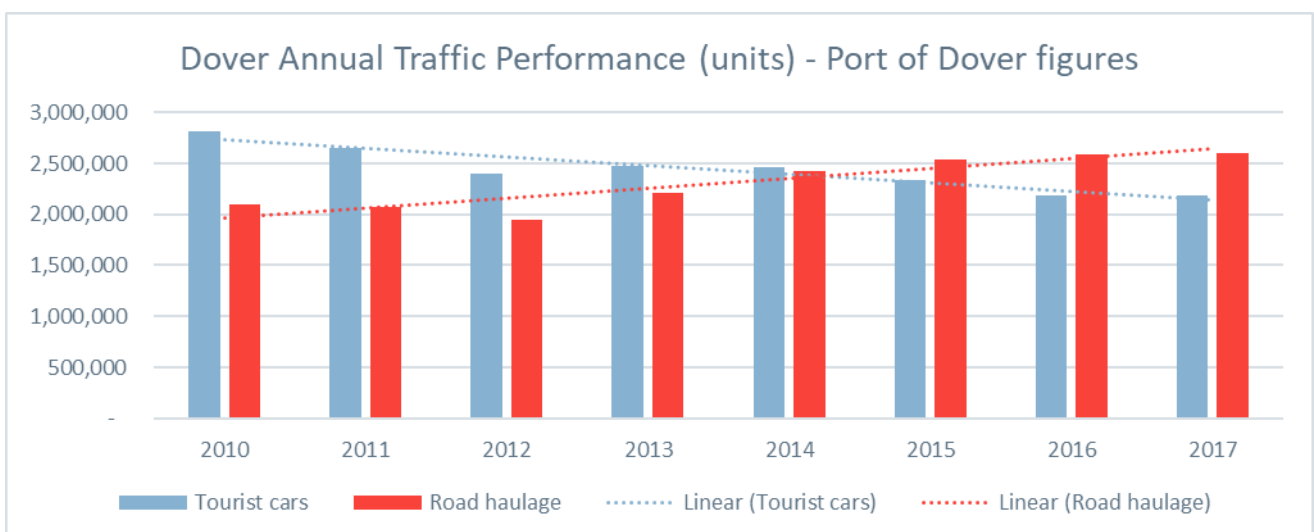
**Figure 3-2 – Dover throughput (DfT, 2017)**



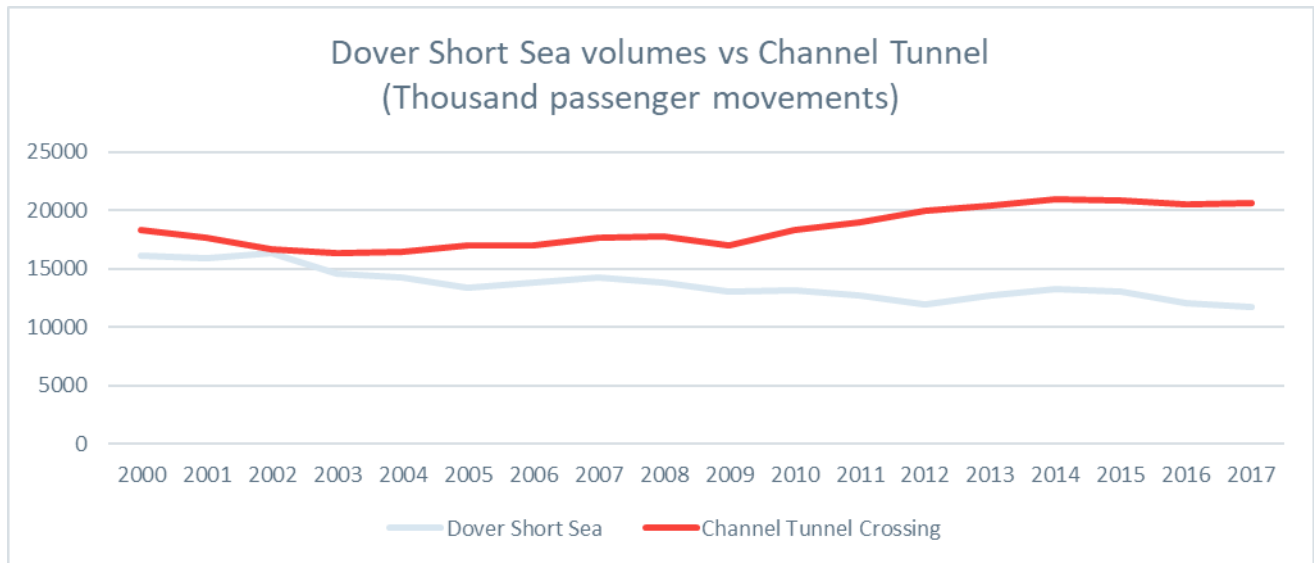
**Table 3-4 – RoRo**

Terminal(s)	3
Owner	Port of Dover Harbour Board
Capacity	Passenger numbers have declined since 2016, however road haulage maintains a steady growth
Description	Predominately accompanied freight and passenger vehicles. Major gateway to UK, Dover has good customs facilities
Trends	Dover passenger numbers dropping and freight RoRo increasing. Channel Tunnel continues to take passenger market share from Dover

**Figure 3-3 – Dover annual traffic (Port of Dover, 2019)**



**Figure 3-4 – Dover passenger movements (DfT, 2017)**



### Port of Dover SWOT analysis

**Table 3-5 – Dover SWOT analysis**

SWOT			
Strengths	<b>New redevelopment</b> Large renovation set to diversify revenue stream	<b>Focal point of France – UK</b> Strong reputation and history of UK-France connection	<b>Geographical location</b> Shortest crossing point between UK-France
Weaknesses	<b>Reliance on UK – France/EU relations</b> Highly vulnerable to border/political relations issues E.g. additional border checks can stifle the port.	<b>Reliance on road network</b> Limited road network access to port and problematic Dover town layout	<b>75% of revenue from RoRo/ferries</b> Highly proportion of revenue from one source, high risk if sector stalls
Opportunities	<b>Strategic expansion</b> DWDR or similar initiatives can build on strong location and reputation base	<b>New routes</b> Option to expand route selection and increase market share	<b>Collaboration with Channel Tunnel</b> Potential for business synergies
Threats	<b>Congestion/strike action</b> Vulnerable target - strike and congestion often cripple Dover for short term	<b>Human migration issue unresolved</b> Continued risk of further issues regarding unsettled migrants attempting to reach UK from Calais	<b>Channel Tunnel to secure passenger and freight business</b> Proportion of business vulnerable to Channel Tunnel competition

### Summary of growth potential

- 3.1.9. Infrastructure expansion is well underway with the DWDR project and, upon completion, should shift Dover's revenue stream away from 75% of revenue originating from RoRo/ferry to alternative



commodities such as general bulk or dry bulk. New routes to Belgium or further, if explored, could lead to a new market of growth, provided comprehensive market studies conducted.

#### **Opportunity to develop the port further**

- 3.1.10. Demand shifts are not expected to change drastically due to Brexit outcomes as Dover will always be the closest point between the UK and France. Resolutions between the UK and Europe may provide opportunities for Dover to capitalise. The DWDR investments underway should prepare for a capture of any such changes.

#### **Conclusion**

- 3.1.11. Dover port will remain a key player in the continental Europe to UK market. With the DWDR development, Dover will be able to diversify, which should mean less reliance on RoRo traffic. Opportunities to attract cargo from further afield may also be possible if efficient truck loading facilities are developed appropriately. Further collaboration with Ramsgate port, for example, could be developed.

## 4 MEDWAY

### Overview

- 4.1.1. The Port of Medway cluster consists of multiple small-to-medium ports including, Sheerness, Chatham, Thamesport, Rochester, Ridham Dock, and Queenborough. The Peel Group owns and operates Sheerness port and Chatham port. Volumes through the Medway area has fallen across each sector except general cargo and import/export motor vehicles, which have experienced minor growth.
- 4.1.2. The port which attracts the most volumes in the area is the import/export motor terminal at the Port of Sheerness, which has 11m of water depth with no tidal restrictions or lock system, allowing for unrestricted 24-hour berthing.
- 4.1.3. Peel Group also owns and operates; Clydeport, Dublin, Great Yarmouth, Heysham, Liverpool, and the Manchester Ship canal. Annually, Peel handles 70,000,000 tonnes of cargo and an estimated 13% of the total UK major ports traffic flows through ports operated by the Group. Peel Ports employs around 1,640 staff and had revenues of £644m with an EBITDA of £226m for the year ending 31 March 2017.

### Current/recent major investments;

- 2015-19 – Peel Ports Group: £27m investment in vehicle storage and warehouse capacity. Warehousing increasing by 30,000 square meters at Sheerness. Grain facilities improved £5.4m (included in the £27m).
- 4.1.4. Investments in the Medway area have been minor. The appetite to expand is likely discouraged by the presence of Tilbury docks and London Gateway, which dominate the growth sectors of containers and RoRo with superior facilities, and which have a similar distance to the London market but without the barrier of the M25 / Dartford Crossing to the rest of the UK.

**Table 4-1 – Medway total volumes, 2010 vs 2017 snapshot comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
RoRo	0	0	n/a	Road goods vehicles with or without accompanying trailers (thousand tonnes)
Containers	440	104	-18.7%	Thousand TEU
General cargo	2,026	2,116	0.6%	Thousand tonnes
Dry bulk	3,165	2,947	-1.0%	Thousand tonnes
Liquid bulk	5,007	2,630	-8.8%	Thousand tonnes
Passengers	0	0	n/a.	Thousand units
Import/Export motor vehicles	278	328	2.4%	Thousand units

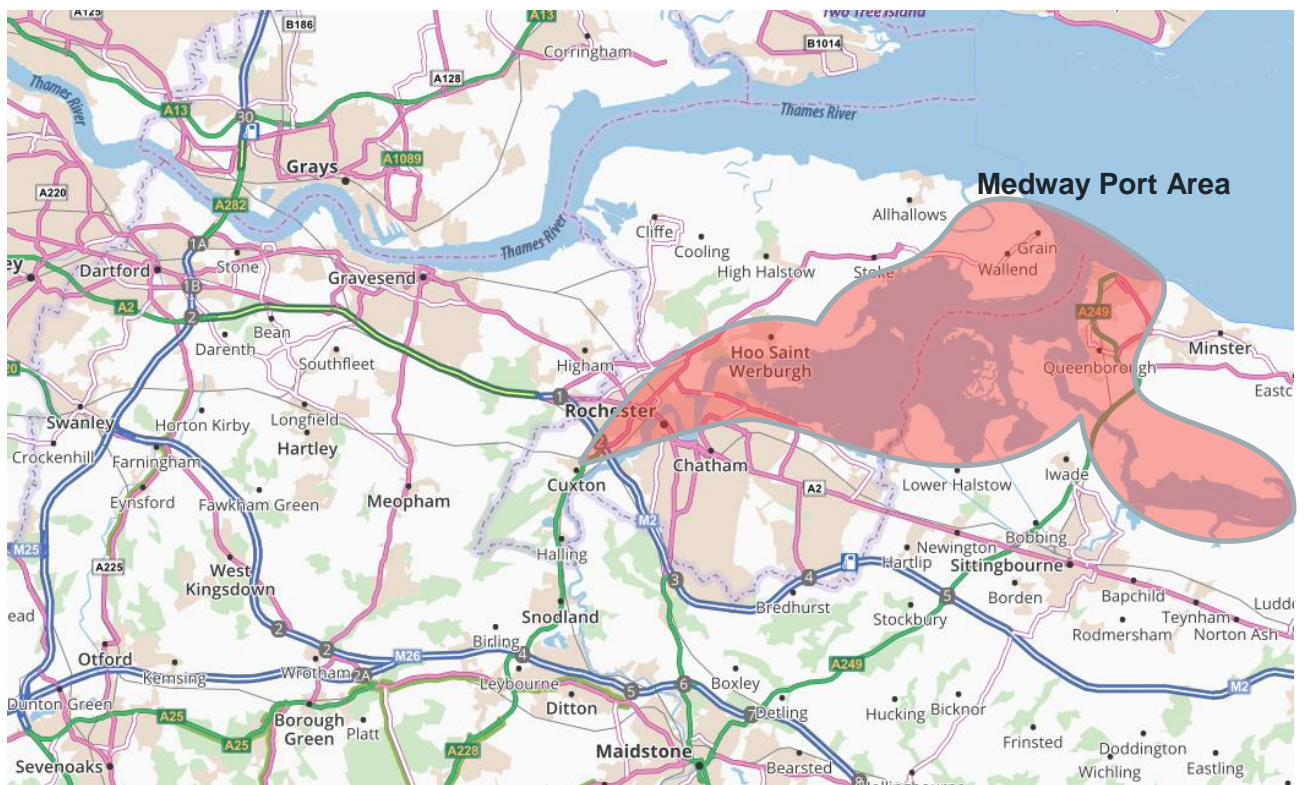
## Network access

- 4.1.5. With road, rail and water connectivity, coupled with a significant land footprint available for development, London Medway is positioned to connect London, the South East of England, and the Midlands to international trade. Road access is via M2 and M20. There is some limited rail connections at Thamesport and unused facility at Sheerness.

**Table 4-2 – Medway network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 208 km LHR: 128 km LGW: 94 km	A249 M2 A2	90 km	Forest products, steel, automotive (Midlands)	Agribulks Containers Dry bulk Energy products Forestry Steel Automotive

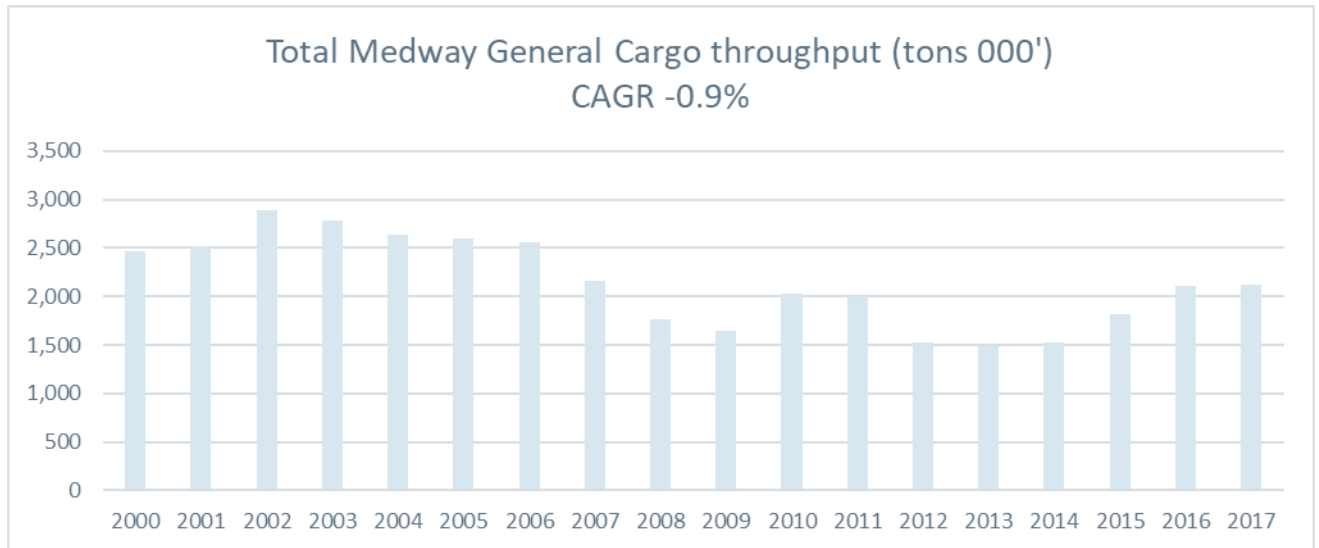
**Figure 4-1 – Medway Port map (Michelin, 2019)**



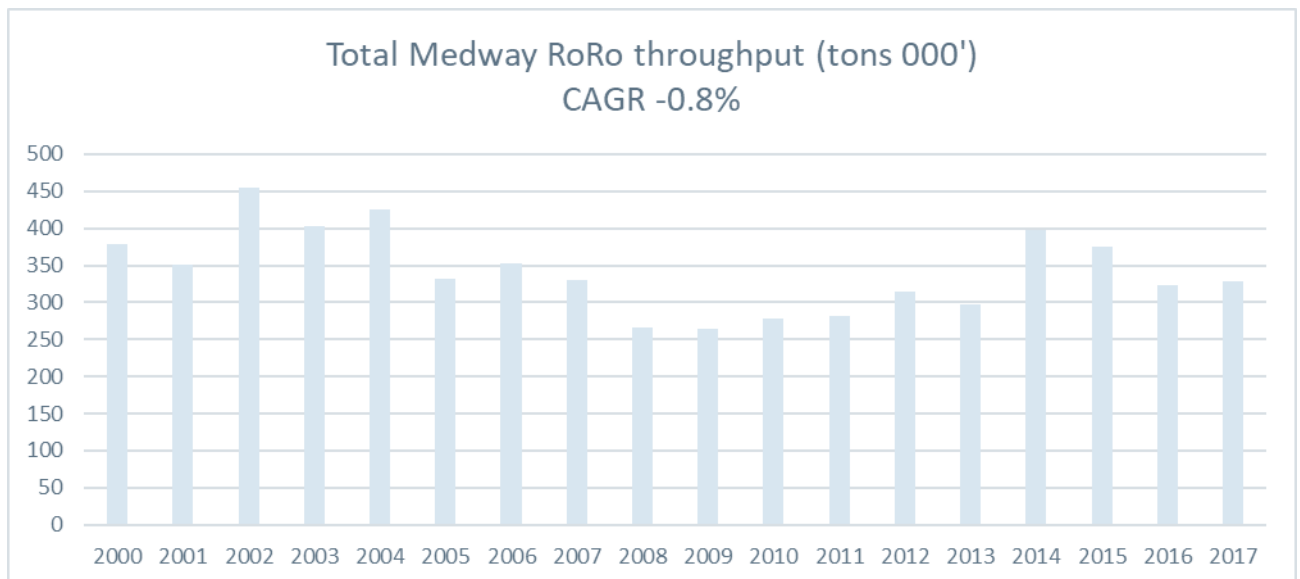
## Commodities

### General cargo

**Figure 4-2 – General cargo (DfT, 2017)**



**Figure 4-3 – RoRo (DfT, 2017)**



## Port of Medway SWOT analysis

**Table 4-3 – Medway SWOT analysis**

SWOT		
Strengths	<b>Liquid Natural Gas (LNG) ingress point</b> Main Liquid Natural Gas ingress point to the UK, with little competition	<b>Distance to London</b> Less haulage time by road compared to Dover
Weaknesses	<b>Competition</b> Multiple small terminals competing within the Medway area	<b>Demand</b> Smaller ports seeing demand taken shifting to larger, more efficient ports
Opportunities	<b>Collaboration</b> Combine skills of smaller ports in Medway area to offer full variety of services	<b>Further develop import/export vehicle hub</b> Develop in specific areas

Threats	<b>Tilbury 2 expansion</b> Potential to take traffic from Medway due to superior facilities	<b>Container volume loss</b> Continued loss of container volumes as London Gateway continues to dominate market
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### Summary of growth to maximise potential

- 4.1.6. Cargo volumes are significant and facilities should be maintained and developed to maintain market share against faster growing competitors. Liquid Natural Gas imports, expected to rise in the UK, should be capitalised on as location on Isle of Grain already attracts significant volumes.

### Opportunity to develop the port

- 4.1.7. With numerous small ports in the Medway region, there is potential scope for collaboration to increase efficiencies and offer a wider number of services. To maximise potential in this area, the development of facilities to compete with major Thames river ports is required.

### Conclusion

- 4.1.8. London Medway port cluster has lost significant container traffic to the recently developed and continually growing London Gateway – which is focussed on containers and has a good location next to the M25. Total volumes have decreased across most areas and the Medway ports could benefit from working together to improve competitiveness and continually advertise their strategic position of being quick to access London. Further developments in the Liquid Natural Gas market specifically should be considered to capitalise on forecasted volume growth. With most other commodities, the competition from Tilbury will continue to be threatening - even if increased competitiveness is achieved by London Medway.

## 5 PORTSMOUTH

### Overview

- 5.1.1. Portsmouth offers the highest number of routes for ferries of all UK ports. Annually, the Port serves 2 million passengers, 700,000 vehicles, and handles 250,000 freight units. A significant proportion of cargo is via refrigerated services from Africa. It is the UK's 2nd busiest UK port for Ro-Ro after Dover and is home to the 2nd busiest cross-channel ferry service.
- 5.1.2. Portsmouth's Navy presence requires up-to-date infrastructure and high-level services. The Navy's commitment to Portsmouth will ensure that common maritime infrastructure is invested in, thus providing a stable source of activity and investment in the port area.
- 5.1.3. In 2017 Portsmouth had an annual turnover of over £33m (£4.9m net profit in 2017/18). Representing an increase of £1.6m profit from 2016. The port indirectly supports 1,595 jobs.

**Table 5-1 – Portsmouth total volumes, 2010 vs 2017 snapshot comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
RoRo	1,847	1,790	-0.4%	Thousand tonnes
Containers	52.0	79.1	6.2%	Thousand TEU
General cargo	548	520	-0.7%	Thousand tonnes
Dry bulk	217.0	427	10.2%	Thousand tonnes
Passengers	692	685	-0.1%	Thousand units
Import/Export motor vehicles	17	11	-6.0%	Thousand units

### Current/recent major investments

- 2011 – New Cruise terminal - part of investment in new passenger facilities £16.5m.
  - 2012 – New cranes and new warehouses. 2 shipping berths being upgraded.
  - 2019 – £100m refit for the dry dock and dredging improvements by the Royal Navy.
  - 2019 – £18.7m to improve ferry operations and cruise market.
- 5.1.4. Investment policy of Portsmouth is following the trend of the cruise sector growth, although its numbers have not been convincingly positive.

### Network access

Portsmouth is close to the SRN, but suffers like Southampton from being in positioned a city environment and the associated challenges that presents. There is no significant rail freight operation, although facilities are available at Fratton.

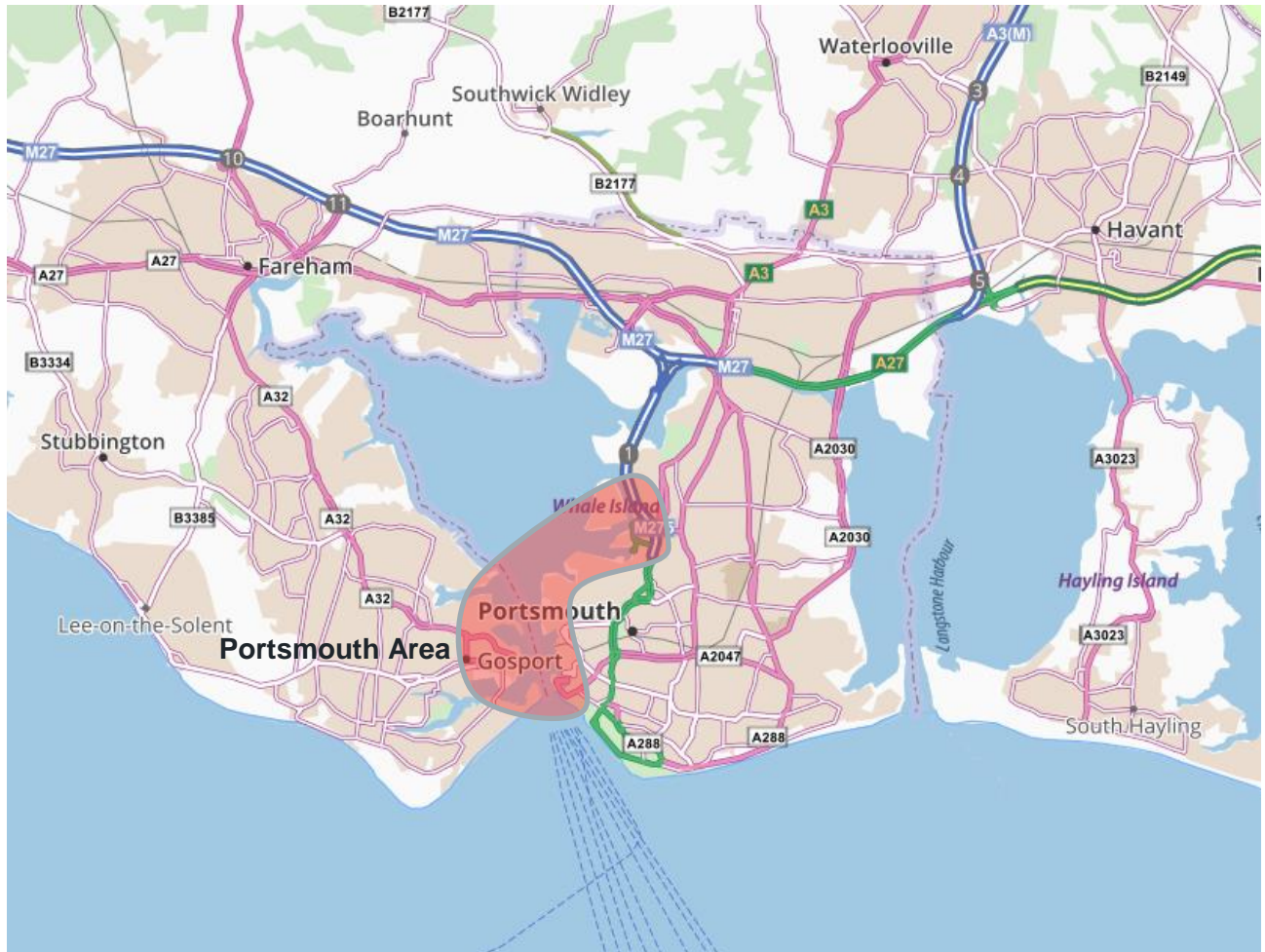
**Table 5-2 – Portsmouth network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
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Southampton: 30 km LHR: 100 km LGW 143 km	M275 A3(M) / A3 M27 / A27	125 km	Unknown	Fruit Ballast General cargo
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**Figure 5-1 – Portsmouth Port map (Michelin, 2019)**



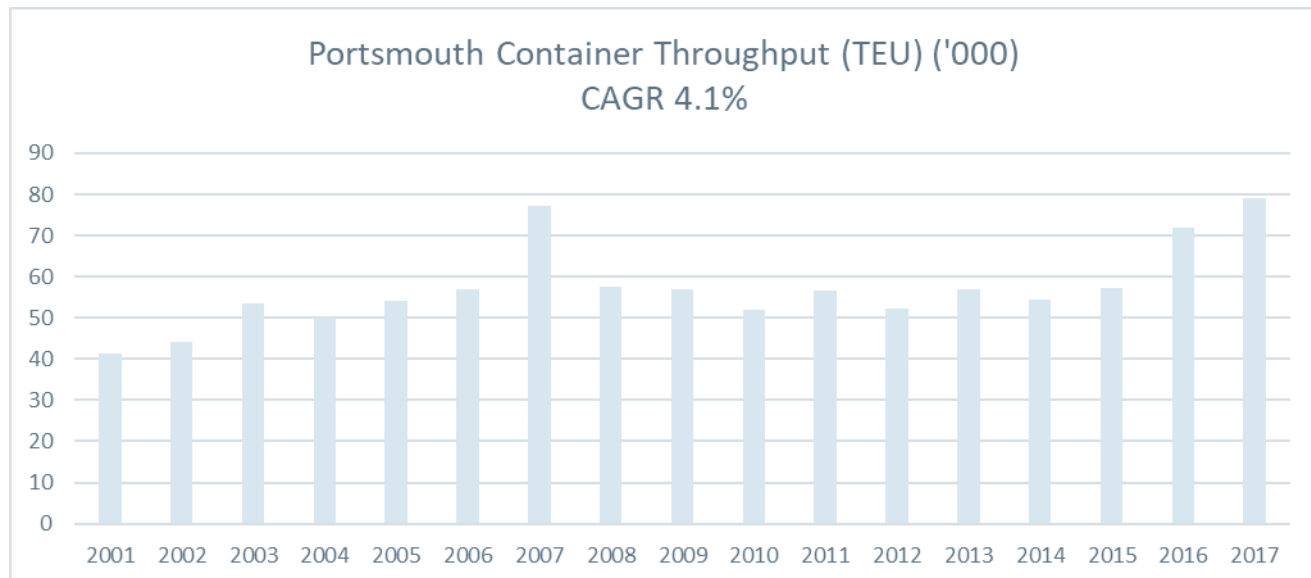
## Commodities

**Table 5-3 – Bulk/refrigerated (not containerised) services**

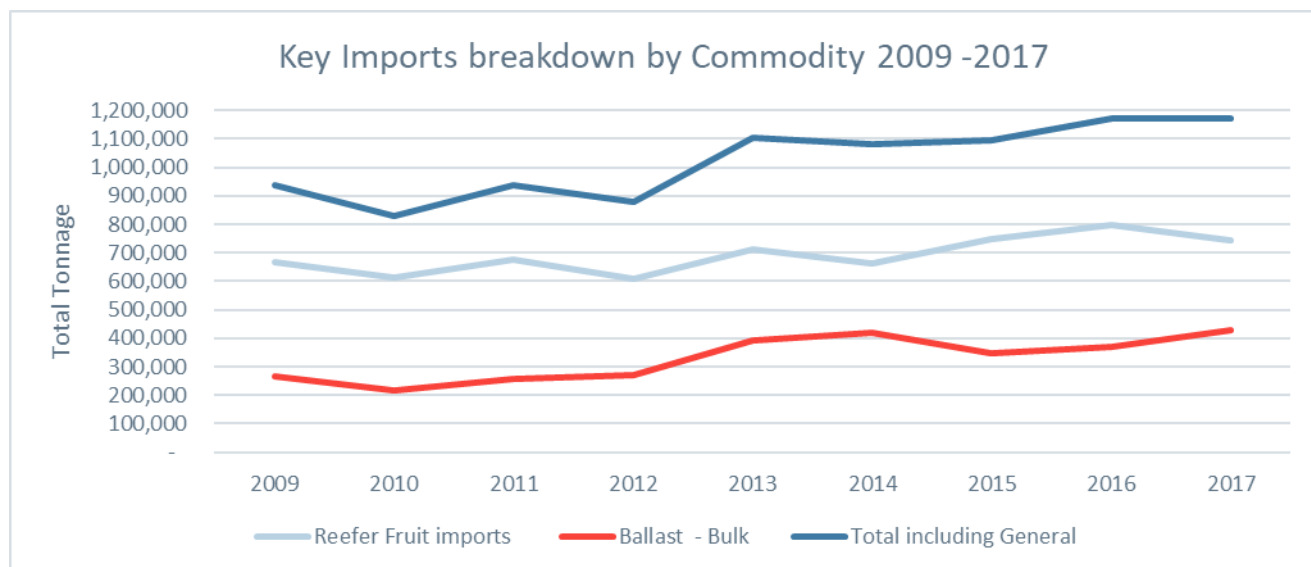
<b>Terminal(s)</b>	<b>2</b>
Owner	Commercially run at Albert Johnson & Flathouse Quay
Capacity	The largest container ships that regularly serve the pier are the geared 2,500 TEU units of Maersk Line's Europe-USEC-Colombia service
Description	Portsmouth is one of the UK's largest fruit-handling ports, with commodities arriving from the Caribbean, Central and South America, Morocco, South Africa, New Zealand and the eastern Mediterranean

Trend	2010 to 2017 compound annual growth rate 6.2%
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**Figure 5-2 – Portsmouth container throughput (DfT, 2017)**



**Figure 5-3 – Key import breakdown by commodity (DfT, 2017)**



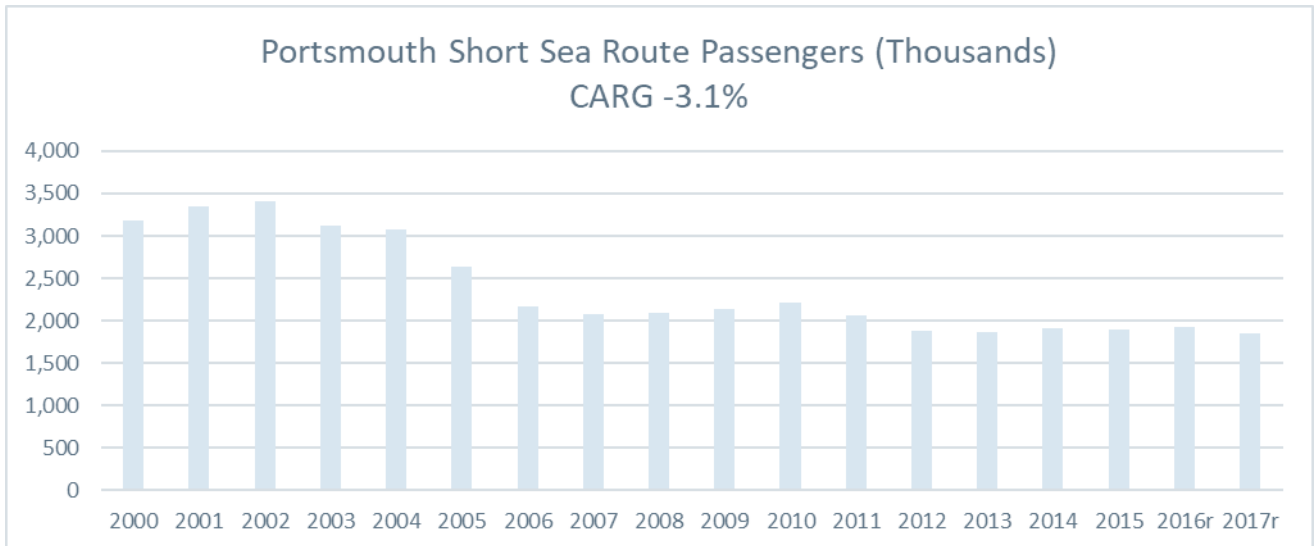
**Table 5-4 – RoRo**

Terminal(s)	2
Owner	Portsmouth Continental Ferry Port; Portsmouth Wight Link Ferry Terminal
Capacity	Spare capacity exists as volumes reportedly drop. Portsmouth could see drops in both Spanish and French volumes following Brexit

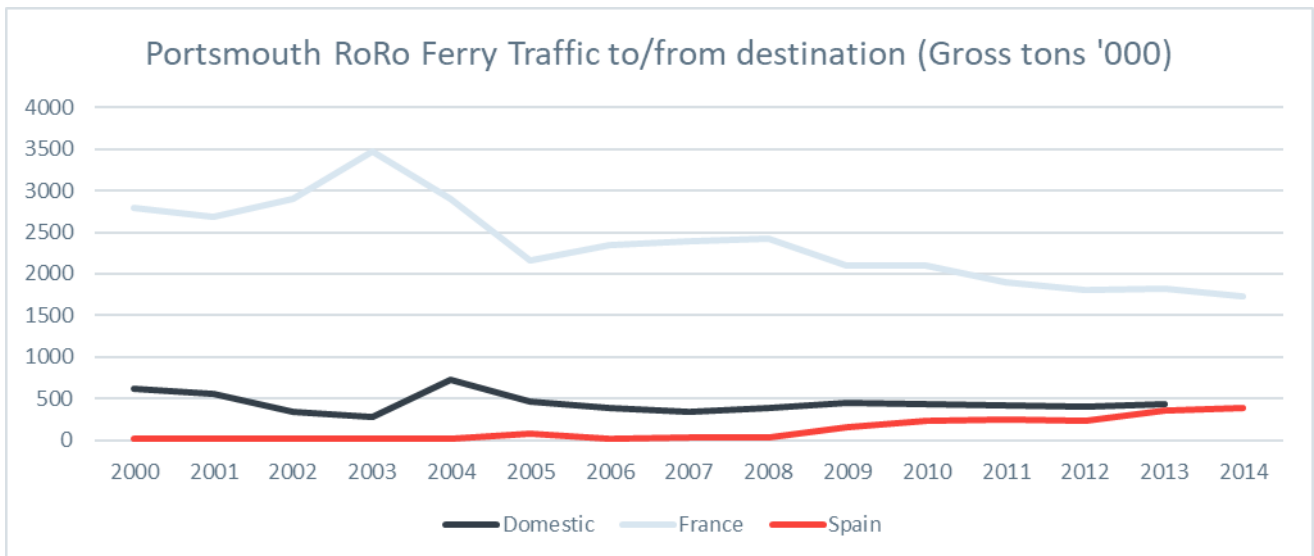


Description	Total ferry services and RoRo volumes have been declining in annual volumes since 2009-2017. Market share has stayed constant and increased in 2015/16
Trend	2010 to 2017 compound annual growth for passengers and RoRo traffic -0.3%. Short term cruise from the same period has -2.5% compound annual growth rate

**Figure 5-4 – Short sea passenger volumes (DfT, 2017)**



**Figure 5-5 – RoRo traffic (DfT, 2017)**



## Portsmouth SWOT analysis

**Table 5-5 – Portsmouth SWOT analysis**

SWOT		
Strengths	<b>Established and varied cruise routes</b> Well diversified routes help spread the degree of commercial risk	<b>Non-EU re Fridgerated routes</b> Links not reliant on smooth Brexit transition agreements
Weaknesses	<b>Flat ferry/RoRo market volumes</b> Market share loss reduces profitability of terminals	<b>Southampton competition</b> Greater efficiencies of Southampton pose a threat to Portsmouth price point

Opportunities	<b>Distribution to midlands and south east</b> Hinterland area population is large, opportunities to compete	<b>Cooperation with military funding</b> Dredging and expansion projects could have positive effects for the port's commercial activity
Threats	<b>Over-congestion</b> City congestion and lack of freight rail	<b>Reduction in market share</b> No sign of growth in total export markets, stagnation a threat to business

### Summary of growth to maximise potential

- 5.1.5. Ferry volumes have stabilised for Portsmouth with no sign of resurgence. With capacity available there is scope to attract passenger traffic to/from Dover - if it experiences congestion. Close collaboration with the Navy presence should be maintained as opportunities for dredging and other infrastructure developments could be best tackled with support from military funds.

### Opportunity to develop the port

- 5.1.6. Development of the refrigerated market or collaboration with military infrastructure are possibilities to help demand increase. The distance between Portsmouth and Southampton, and Southampton's existing role as a major container port is a disincentive to container development at Portsmouth. However, opportunities could arise out of the declining performance at Dover. A rail link from the freight quays to the nearby Portsmouth Harbour rail line could provide a growth opportunity – given an adequate market for freight rail exists.

### Conclusion

- 5.1.7. Portsmouth has seen declines in throughput in most commodity groups. General bulk and refrigerated freight are likely to be the most stable import/export group in the near future as demand in the local hinterland appears stable. The outlook for upscaling at the port is unlikely due to the well-established large and diverse port of Southampton. Partnership with the Navy can be mutually beneficial in providing for modern infrastructure and facilities utilisation.

## 6 SHOREHAM

### Overview

- 6.1.1. Shoreham is a small UK trust port which operates primarily in short sea shipping. It offers a stevedoring service (handling and loading/offloading from ships) and a modern tracking stock control system. The port's primary cargoes are associated with construction (timber/aggregates/steel) agricultural products (grain) and fish. Shoreham is seeking to diversify its cargo base to support the renewable energy sector. The port is actively involved in commercial and residential property services and indirectly supports over 1,600 jobs.
- 6.1.2. In 2017 the port of Shoreham had a turnover of £13.3m and an EBITDA of £2.3m, an increase of 0.7% and 9.7% respectively.

**Table 6-1 – Shoreham total volumes, 2010 vs 2017 snapshot comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
RoRo	0	0	n/a	Road goods vehicles with or without accompanying trailers (thousand tonnes)
Containers	0	0	n/a.	Thousand TEU
General cargo	230	381	7.5%	Thousand tonnes
Dry bulk	1455	1614	1.5%	Thousand tonnes
Liquid bulk	167	68	-12.1%	Thousand tonnes
Passengers	0	0	n/a.	Thousand units
Import/Export motor vehicles	0	0	n/a.	Thousand units

### Current/recent major investments

- 6.1.2.1 Investments primarily aimed at; Marine/ operations streams; expansion of property base through strategic acquisition of key sites; and the development of new units in the East Arm. Investments required in the maintenance of quays, breakwaters and coastal defence - £6m spent from 2014 to 2017 on up-keep. In 2017 the port spent £579k on capital investment projects.
- 6.1.3. Shoreham's investment policy is limited in shipping and more focussed in realising opportunities in property and commercial real estate. Investment required for maintenance is expected to continue however no significant growth in volumes are catered for if they were to arise.

### Network access

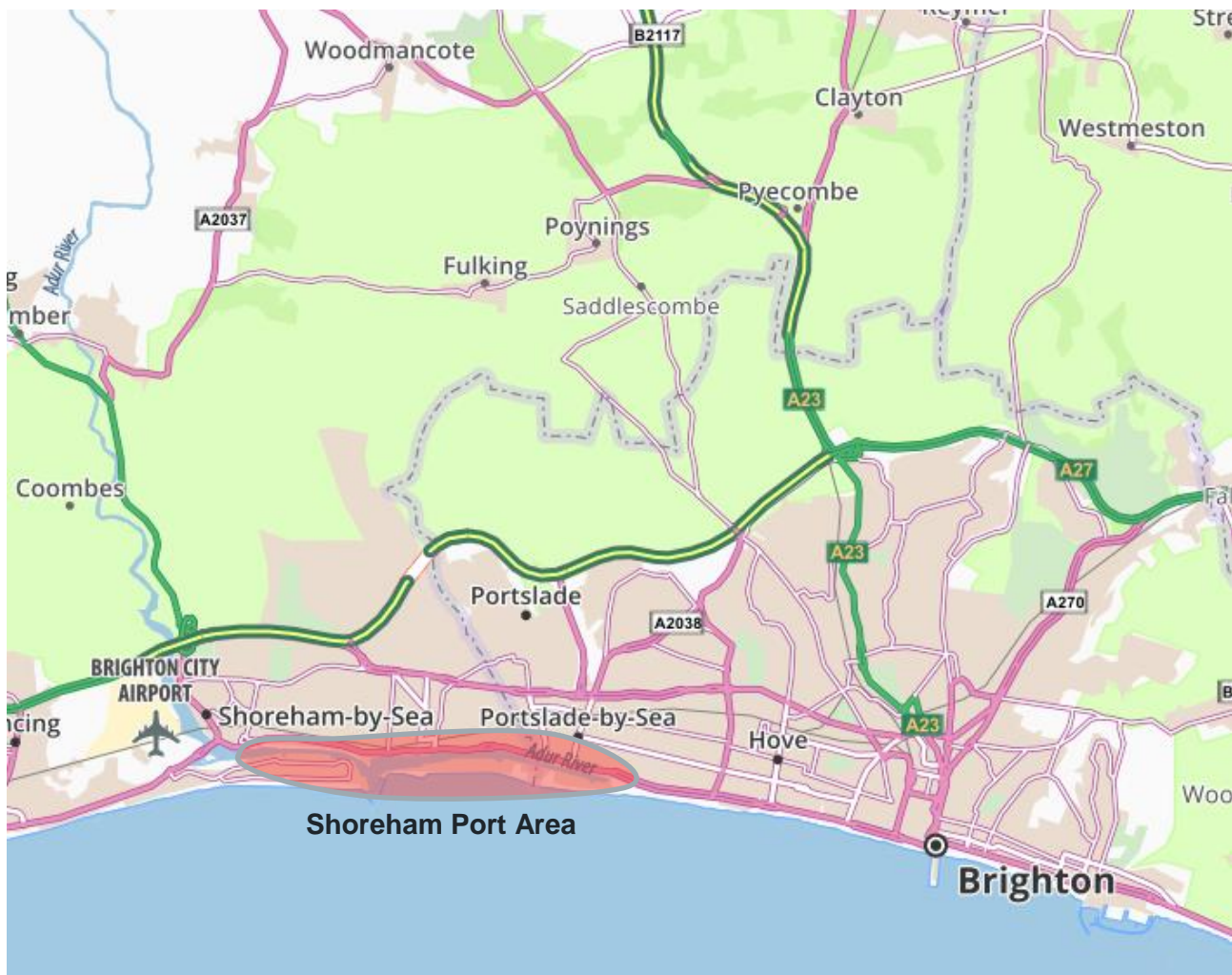
Shoreham is reasonably well connected to the SRN via the A27 and A23. There is an unused rail freight connection.

**Table 6-2 – Shoreham network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
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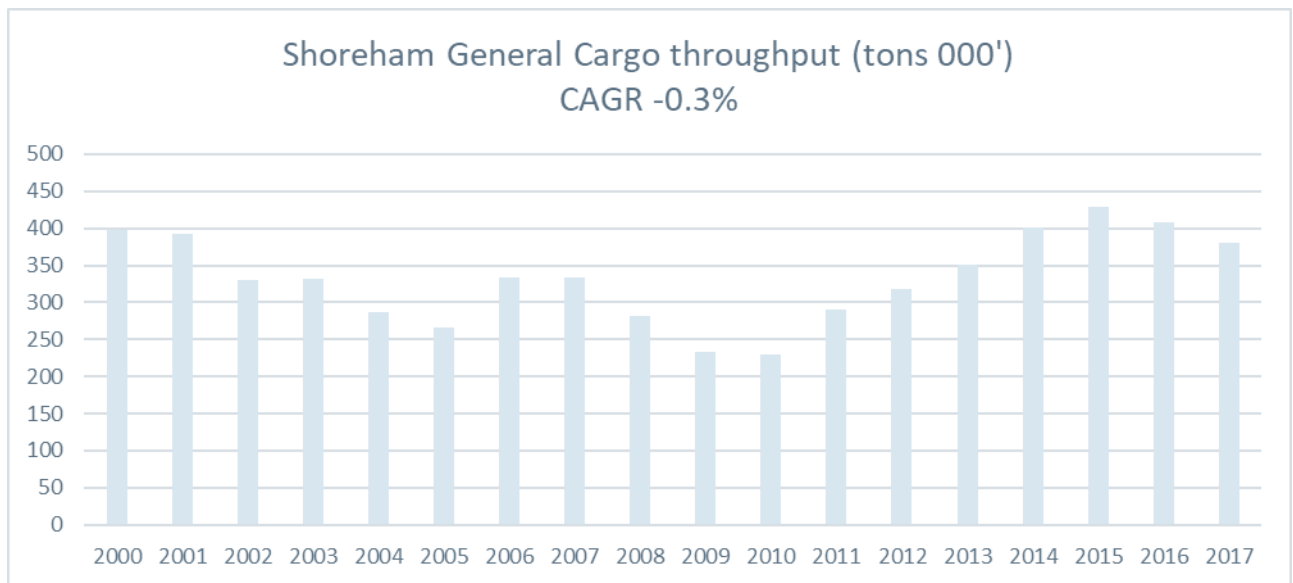
Southampton: 96 km LHR: 110 km LGW 50 km	A27 A23	94 km	Unknown although likely to mainly serve South East construction and energy.	Timber Steel Woodchip Grain Oil Fish
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**Figure 6-1 – Shoreham Port map (Michelin, 2019)**



## Commodities

**Figure 6-2 – Shoreham general cargo (DfT, 2017)**



### Port of Shoreham SWOT analysis

**Table 6-3 – Shoreham SWOT analysis**

SWOT		
Strengths	<b>Established</b> Established links to Brighton market	<b>English Channel</b> Quick geographic access to English Channel and to continental Europe
Weaknesses	<b>Expansion limited</b> Real estate and Brighton	<b>Road access</b> Limited due to Brighton city congestion
Opportunities	<b>Diversification</b> Land used in real estate and plans to expand to renewable energy markets	<b>Collaboration</b> Increase collaboration with Brighton business as primary hinterland
Threats	<b>Limited quay-side infrastructure</b> Expensive CAPEX required for improvements	<b>Inability to compete</b> Without scaling up operations - competitiveness may decrease against rivals

### Summary of growth to maximise potential

- 6.1.4. Overall growth possible if the port continues with pursuing a wide range of initiatives. Renewable energy market aspirations remain and a sustainability effort to be an 'Eco-Port' is beneficial in building a good reputation

### Opportunity to develop the port

- 6.1.5. Further market port as efficient, diversify, and a high level of customer service with proximity to Brighton hinterland. Further opportunity to develop commercial activities for Brighton market remain possible

### Conclusion

- 6.1.6. Shoreham is limited in upscaling operations, however, as an alternative to the typical infrastructure expansion growth model, the port is seeking to diversify its operations and maintain its levels of service.

## 7 NEWHAVEN

### Overview

- 7.1.1. The direct ferry to Dieppe in France is a stable element of the port's operations. The Ferry operator receives 26 million euros of funding from the Normandy region. This is set to be reviewed in 2021/22. The volumes through Newhaven have been on a steady decline and are limited by the opening times of a swing bridge its narrow channel. Newhaven holds the operational base for the Rampion windfarm.

**Table 7-1 – Newhaven total volumes, 2010 vs 2017 snapshot comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
Ro-ro	486	482	-0.1%	Road goods vehicles with or without accompanying trailers (thousand tonnes)
Containers	0	0	n/a	Thousand TEU
General cargo	0	0	n/a.	Thousand tonnes
Dry bulk	294	154	-8.8%	Thousand tonnes
Liquid bulk	0	0	n/a.	Thousand tonnes
Passengers	79	113	5.2%	Thousand passengers
Import/Export motor vehicles	0	0	n/a.	Thousand units

### Current/recent major investments;

- 2012 - £3m in improvements;  
Marine leisure boating facilities - £0.4 million; Fishing industry investments - £1.3 million; Maintenance and improvement of waterways/seabed levelling - £1m New Ferry Terminal Refurbishment.
- 2019 - access road improvements £23.2 m

- 7.1.2. Newhaven maintenance policy is essential for the ferry terminal and fishing industry, which drive revenue.

### Network access

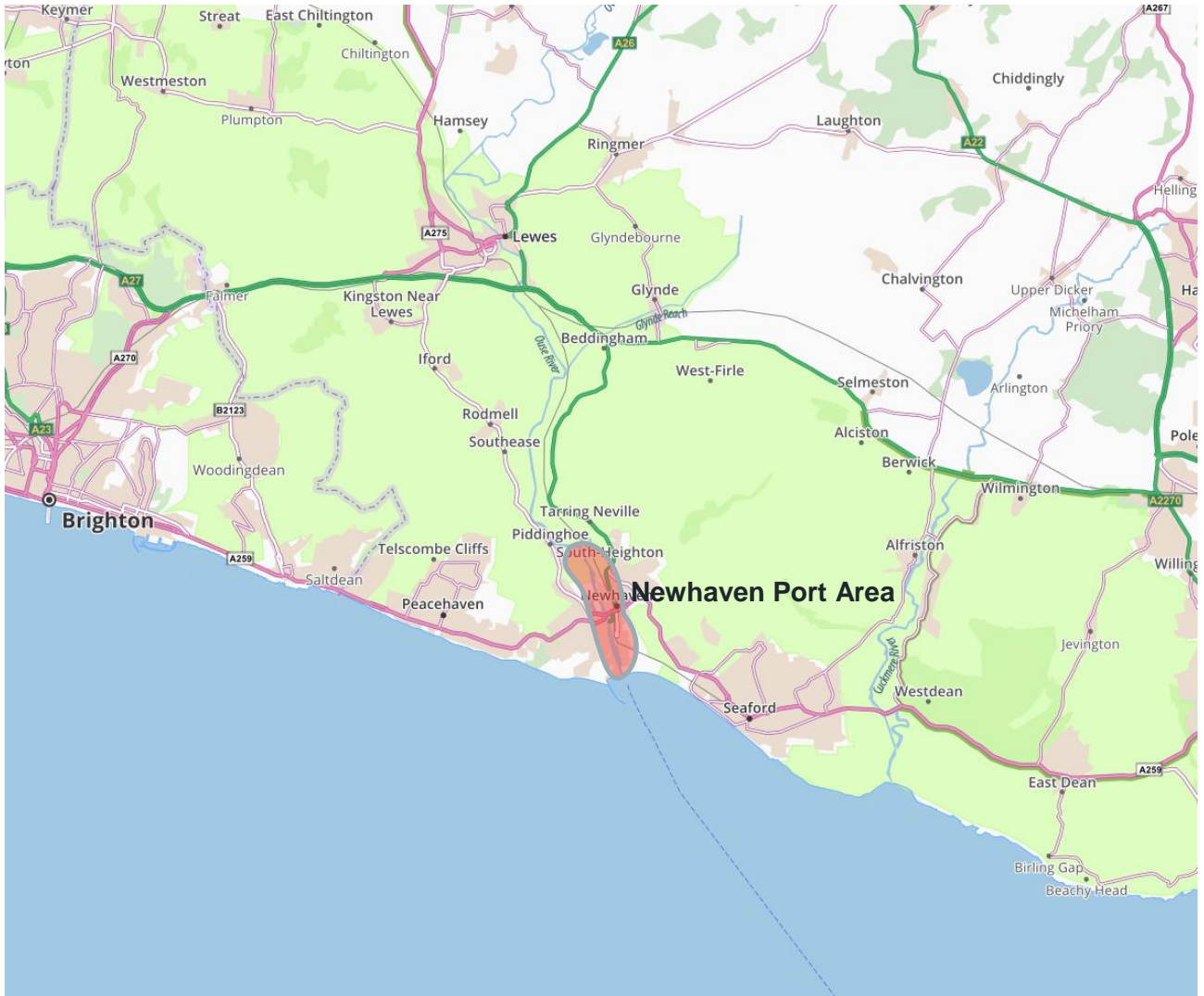
- 7.1.3. At present the port is accessed along the residential roads and as a result a new access road is being constructed and due to be completed in 2020. Rail freight facilities suitable for bulk.

**Table 7-2 – Newhaven network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 128 km LHR: 128 km LGW 66 km	A26 A27	108 km	Likely to be short distance within the South East	Dry bulk RoRo

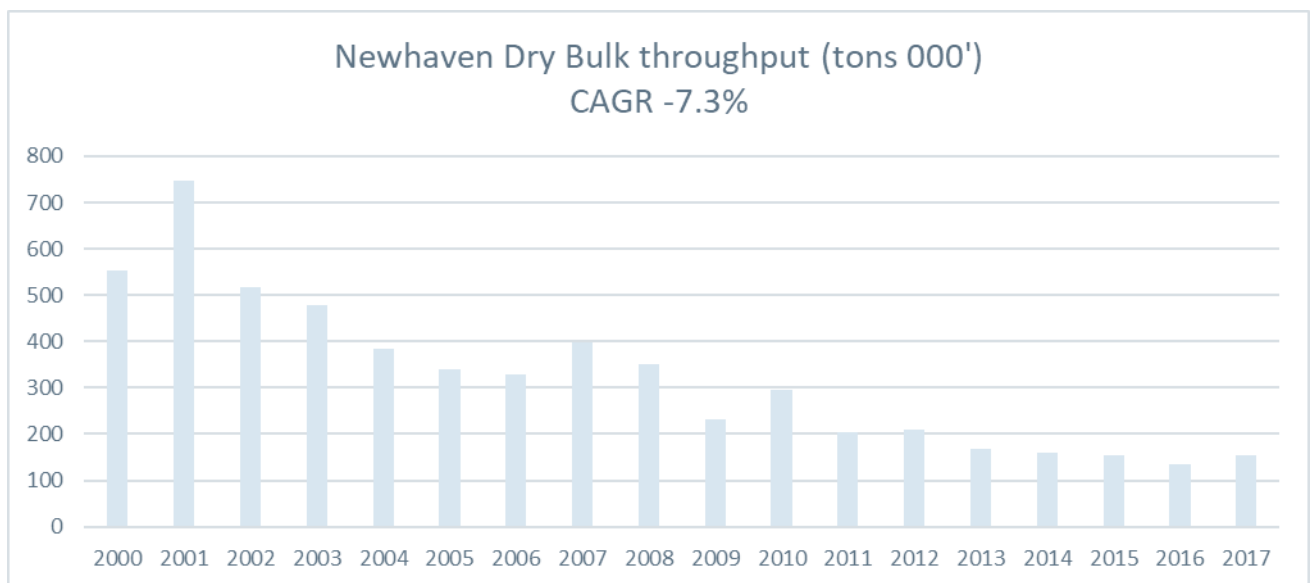
**Figure 7-1 – Newhaven Port map (Michelin, 2019)**





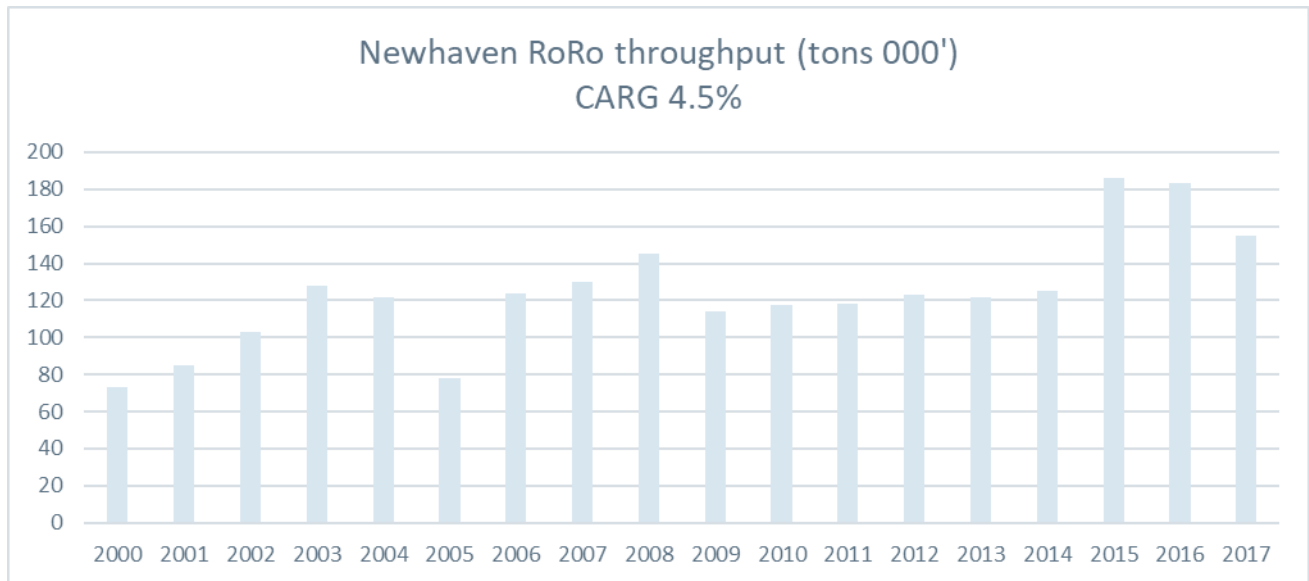
Commodities

**Figure 7-2 – Dry bulk /general cargo (Michelin, 2019)**





**Figure 7-3 – RoRo (Michelin, 2019)**



### Port of Newhaven SWOT analysis

**Table 7-3 – Newhaven SWOT analysis**

SWOT		
Strengths	Established Ferry Route Traffic to France showing signs of minor growth, niche route	Geographical location Distance to France shorter than Portsmouth
Weaknesses	Access to cargo berths Dredging and seabed levelling maintenance required for continued access to dry bulk and general cargo handling facilities	Expansion costly Town and river will require costly infrastructure work to allow access to facilities for larger vessels
Opportunities	Ferry route Existing infrastructure could be used to provide another niche route	Dover – Calais route Take small percentage of market from Calais
Threats	Reliant on ferry line Rate or political changes from French port can significantly impair the ferry route	Limited captive market Small population in local town, other ports competing for Brighton market likely to be more competitive than Newhaven / offer more options

### Summary of growth to maximise potential

- 7.1.4. Newhaven being small in nature should investigate the opportunities to expand on services offered, not limited to the maritime realm, as Shoreham has done with property and renewable energy. If a fraction of the Dover to Calais market could be taken by Newhaven to Dieppe, it would greatly impact Newhaven revenue.

### Opportunity to develop the port

- 7.1.5. If market exists, the establishment of multiple ferry crossings could lead for increase business opportunity for the single route port. There is opportunity to develop infrastructure in the small town to establish itself as a key crossing point.

## Conclusion

- 7.1.6.** Newhaven has specialised its service offering to its ferry link to France. The French subsidy which ensures the ferry operations prove a lifeline to the continuation of the service, and consequently, continuation of the port. Increasing business viability of the ferry to run without subsidies should be of paramount importance. If achieved, this could encourage investment and expansion. There is a case for Newhaven to realise its past potential as a viable alternative route from London to Paris.

## 8 RAMSGATE

### Overview

- 8.1.1. Ramsgate was a commercial port and, until recently, operated a ferry services to both Dunkirk and Ostend. It is now primarily a construction/operation/maintenance base for three nearby offshore wind farms. Financial reporting from Thanet Council indicates Ramsgate port generating a deficit of £1.8m in 2017-2018.

**Table 8-1 – Ramsgate total volumes, 2010 vs 2017 snapshot Comparison (DfT, 2017)**

	2010	2017	CAGR	Units/description
RoRo	1403	1	-64.5%	Road goods vehicles with or without accompanying trailers (thousand tonnes)
Containers	0	0	n/a	Thousand TEU
General cargo	0	1	n/a	Thousand tonnes
Dry bulk	35	57	7.2%	Thousand tonnes
Liquid bulk	0	0	n/a.	Thousand tonnes
Passengers	3	0	n/a.	Thousand units
Import/Export motor vehicles	0	0	n/a	Thousand units

### Current/recent major investments

- 8.1.2. Recent plans to dredge and re-open a short sea ferry service to Belgium have been cancelled.
- 8.1.3. Proposal ongoing for an extension to the existing and operational Thanet Offshore Wind Farm in Kent. The project will involve the addition of up to 34 turbines on the edges of the existing wind farm and require continued use of Ramsgate for the construction process and ongoing operations.

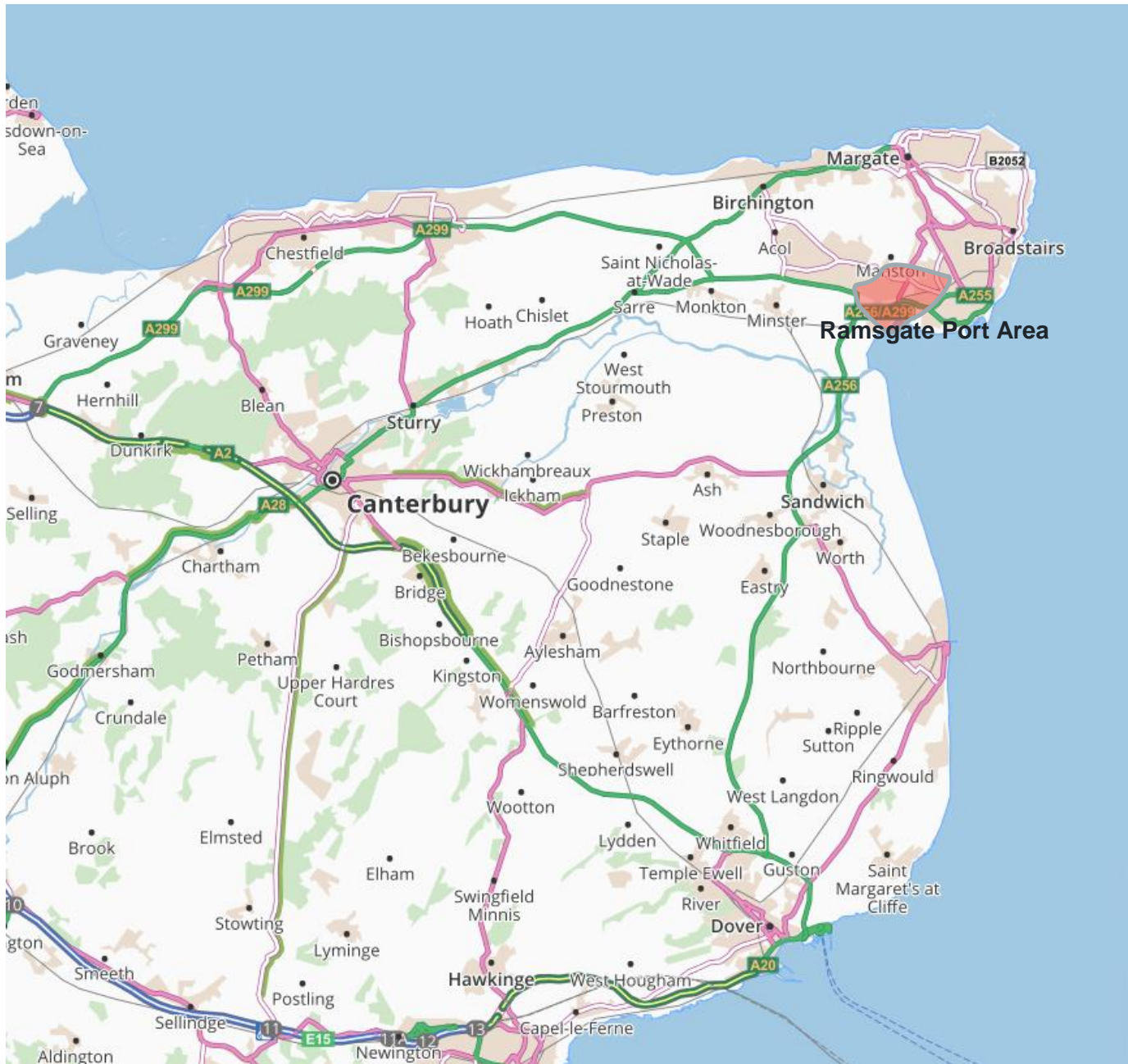
### Network access

- 8.1.4. Road access is via the A229 and it is located 40 kms from the M2, it is well road connected. There are no rail freight facilities.

**Table 8-2 – Ramsgate network access**

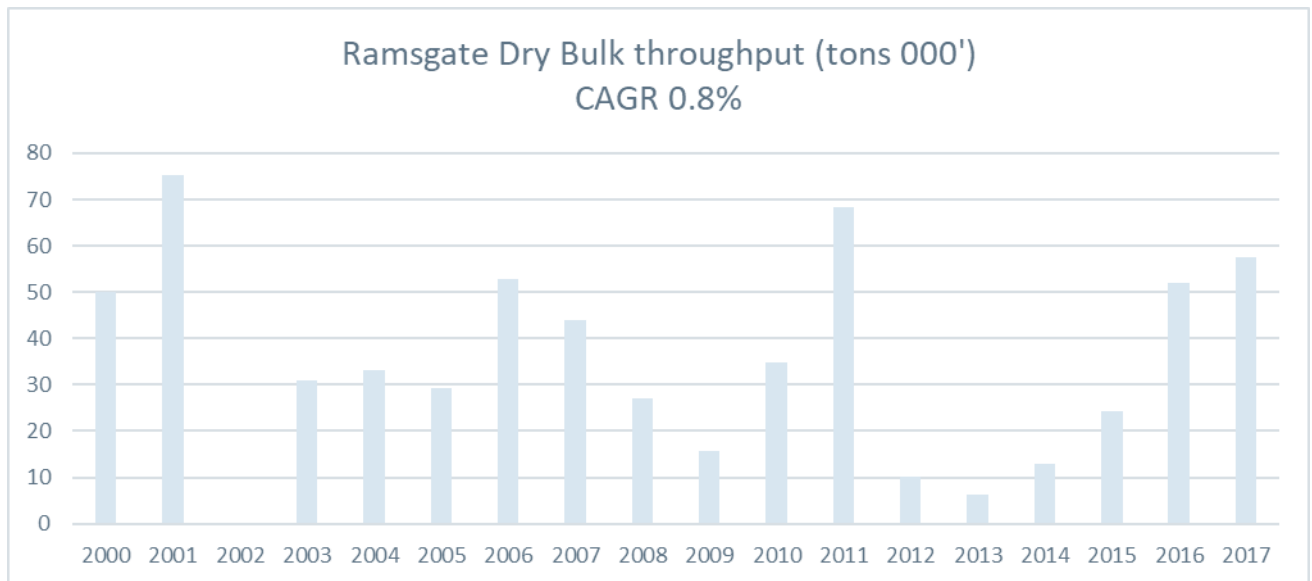
Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 252 km LHR: 175 km LGW 136 km	A229 M2	133 km	Unknown	Dry bulk RoRo

**Figure 8-1 – Ramsgate Port map (Michelin, 2019)**

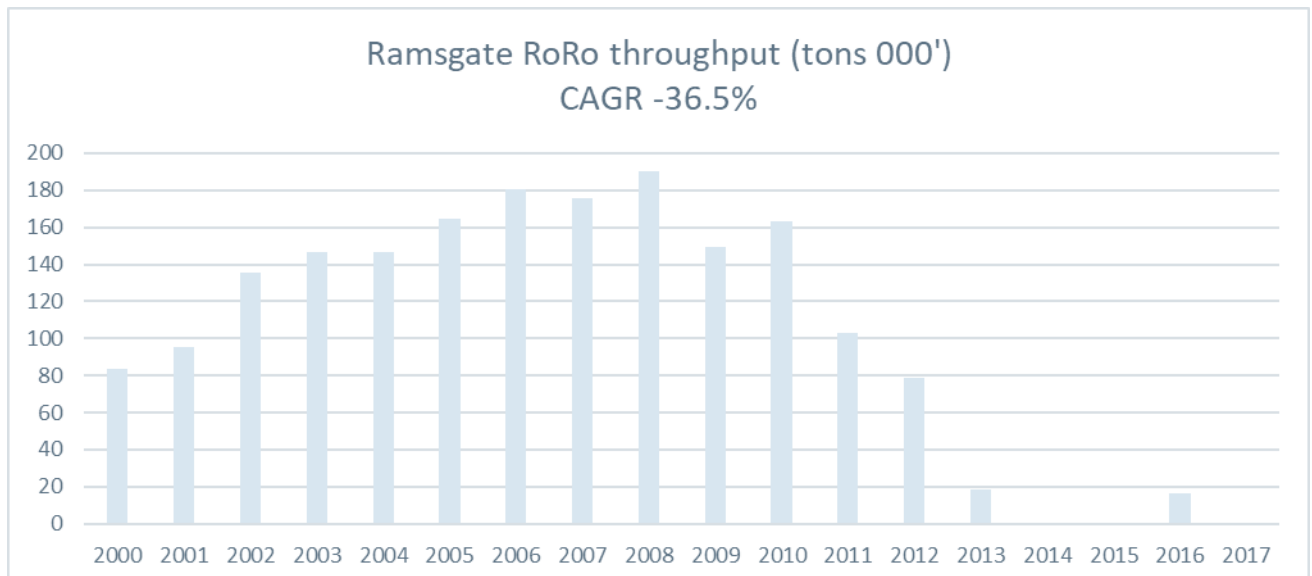


## Commodities

Table 8-3 – Dry bulk/general cargo (DfT, 2017)



**Table 8-4 – RoRo throughput (DfT, 2017)**



## Port of Ramsgate SWOT analysis

**Table 8-5 – Ramsgate SWOT analysis**

SWOT		
Strengths	<b>Established Port</b> Historically has handled considerable throughputs	<b>Geographical location</b> Short distances to continental Europe and London
Weaknesses	<b>Political/Council leadership</b> Lack of ability to maintain business and ensure funding for developments	<b>Infrastructure</b> Ageing infrastructure less attractive to potential clients
Opportunities	<b>Collaboration with Dover</b> Working with Dover to provide a base for re-establishing more consistent port volumes	<b>Capacity</b> Available to handle more volumes

Threats	<b>Failure to maintain business</b> Further demise of port business if changes are not made	<b>Reputation damage</b> Recent failed ferry line contract
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### Summary of growth to maximise potential

- 8.1.5. Ramsgate dry bulk has seen some minor growth improvement. In Q3 2018 demand was stable with 26,000 tons of cargo, however, a stable demand outlook is not reliable.

### Opportunity to develop the port

- 8.1.6. Infrastructure upgrades could help to increase presence of the port and allow it to compete with, or indeed work with, neighbouring ports – specifically Dover.

### Conclusion

- 8.1.7. Ramsgate is a well-established port with a good location and a history of handling volumes. It appears to be in decline based on recent throughput and requires stimulus. Interactions between the council, government, and local lobby groups have not reached agreement on the future of the port.

## 9 HEATHROW AIRPORT

### Overview

- 9.1.1. Heathrow airport is the largest UK airport market in both annual passenger numbers and freight volume. Branded as the UK's hub airport, Heathrow ranks highly against other European hub airports. For freight, Heathrow greatly leads UK total freight tonnage; 1,698,461 per year (2017) followed by East Midlands airport at 324,216 per year (2017) and Stanstead airport at 236,892 tonnes per year (2017).
- 9.1.2. Heathrow is owned by FGP Topco Limited, a consortium owned and co-ordinated by the infrastructure specialist Ferrovial S.A. (25.0%), Qatar Investment Authority (20.0%), Caisse de dépôt et placement du Québec (CDPQ) (12.6%), GIC (11.2%), Alinda Capital Partners of the United States (11.2%), China Investment Corporation (10.0%) and Universities Superannuation Scheme (USS) (10.0%).
- 9.1.3. The airport supports over 77,000 jobs and contributes over £3.6bn in Gross Value Added to the UK Government.
- 9.1.4. Heathrow has had a third runway project approved by the UK Government in June 2018. The estimated cost of the project will be £14bn. Construction is anticipated to begin in 2021/2022. Heathrow has stated that debt will be raised to [part] fund the project and landing charges to airlines to be maintained at existing levels.

### Network access

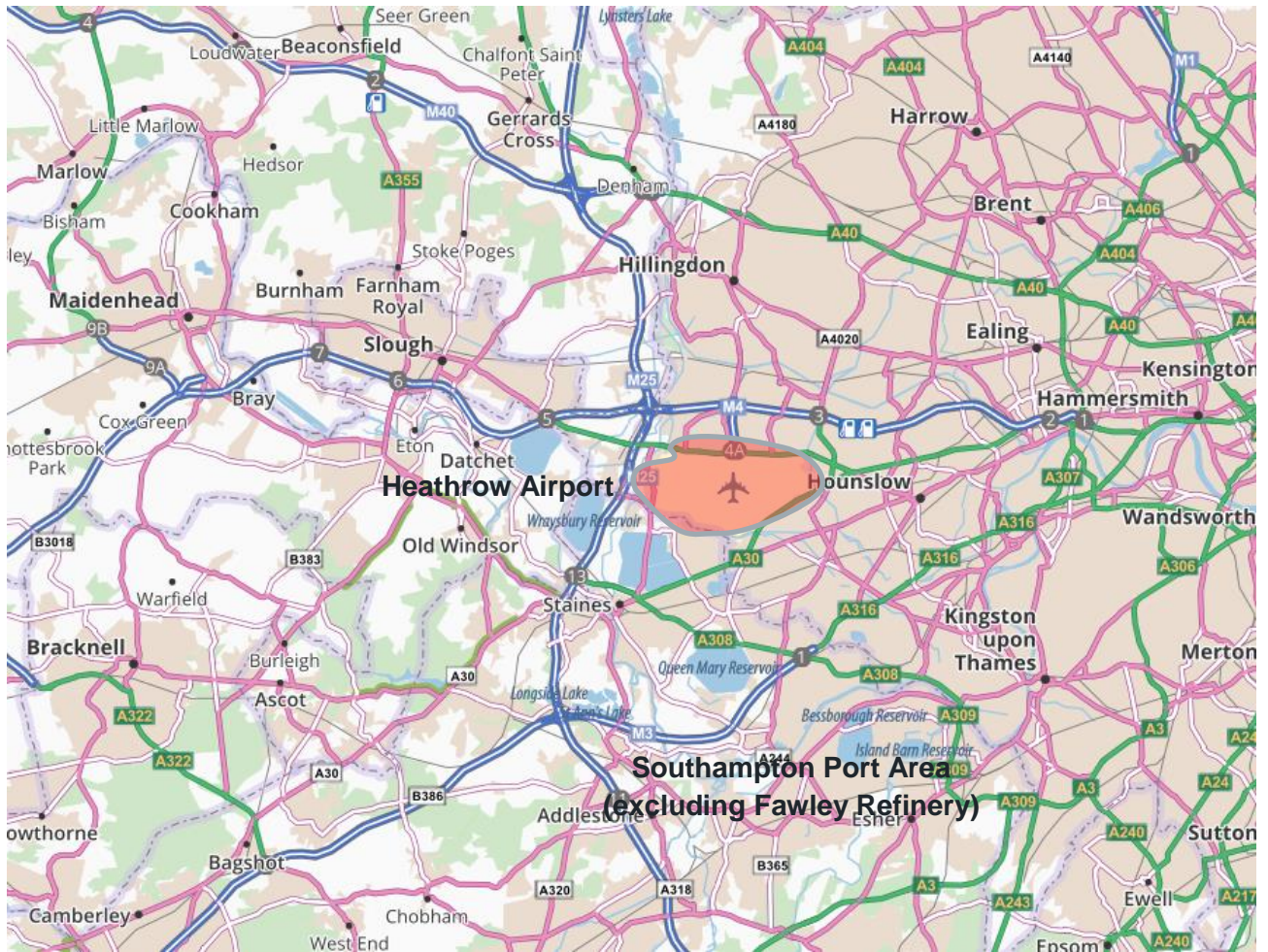
- 9.1.5. Strategic road network connects to two significant motorways (M4 – West England- London and M25 – London circular) and within 10km of the M40 (North West and M3 South West). The area is very congested and the airport is currently not rail connected for freight. For passengers Heathrow is well connected by both overland and underground.

**Table 9-1 – Heathrow network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 100 km LGW 63 km	M4 M25 M40 North Circular M3	33 km	Unknown, but much freight is moved to consolidation centres within a 5-mile radius of the airport	Airline Servicing Airport Servicing Retail Waste Cargo and Mail



**Figure 9-1 – Heathrow map (Michelin, 2019)**



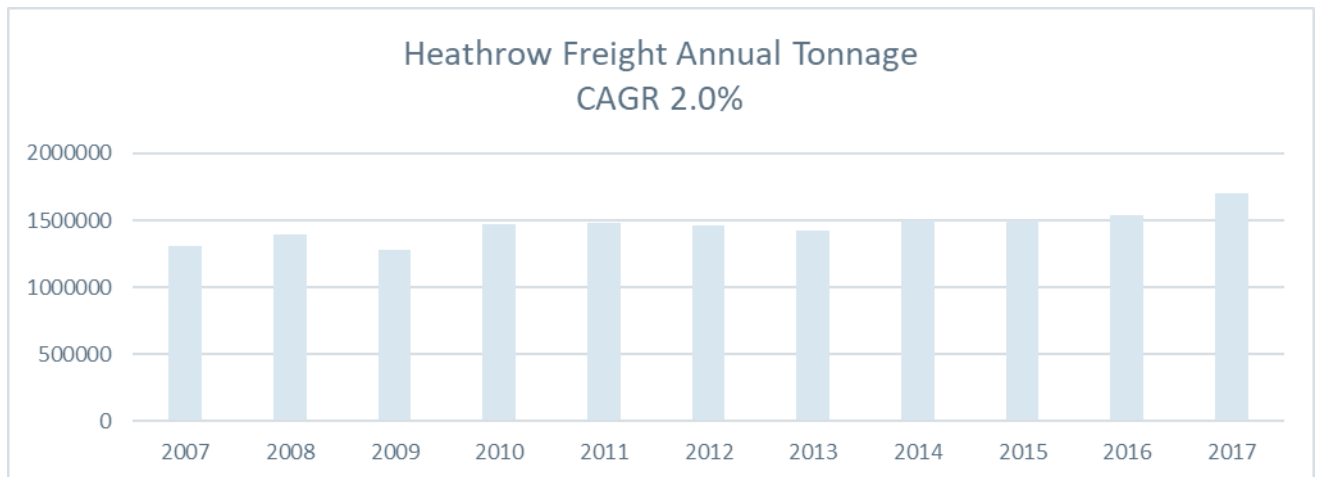
**Table 9-2 – HGV movements at Heathrow (Heathrow, 2018)**

HGV movements	%
Airline Servicing	15.7%
Airport Servicing	7.8%
Retail	1.8%
Waste	0.7%
Cargo and Mail	74.0%

- 9.1.6. Heathrow freight will face a challenge by the implementation of the Ultra-Low Emission Zone. This will require 75% of existing fleets accessing Heathrow to upgrade to euro 6 emission category.
- 9.1.7. Heathrow Airport is pursuing reductions in freight movements by a mix of policy led infrastructure and network intervention concepts - this includes changes and investment to physical infrastructure.

**Figure 9-2 – Freight annual tonnage (Civil Aviation Authority, 2017)**

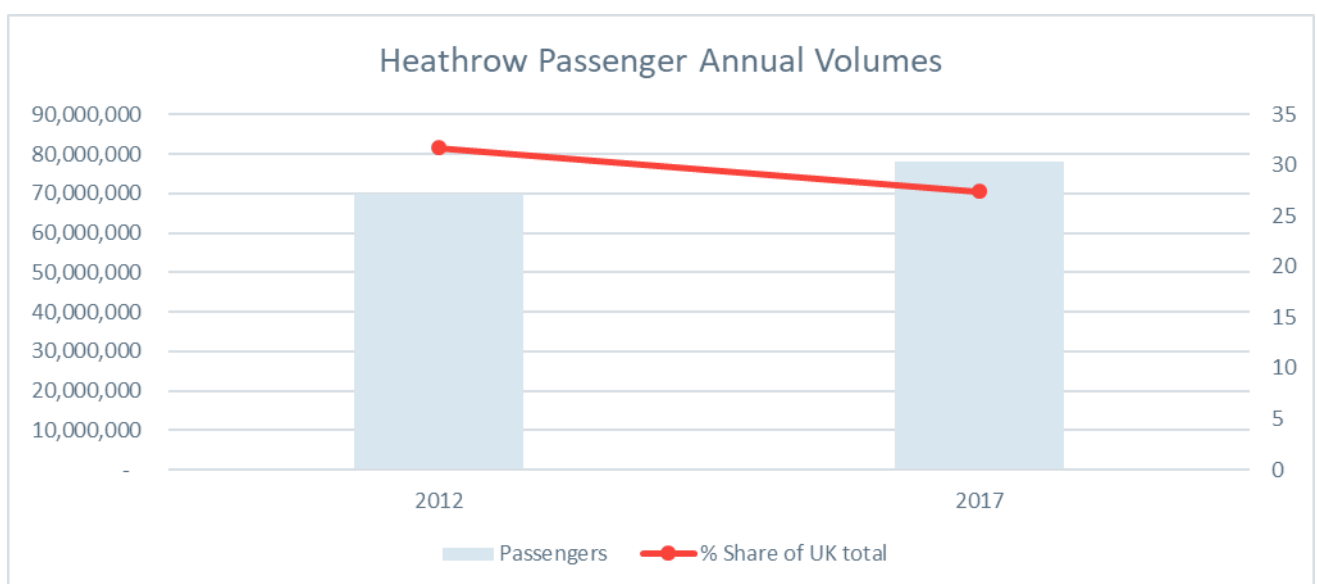




**Passengers;** (2012 against 2017);

**Figure 9-3 – Passenger volumes (Civil Aviation Authority, 2017)**

<b>Passenger volume growth</b>	<b>11.44%</b>
<b>Market share change as share of UK total</b>	<b>-4.30%</b>



## Heathrow Airport SWOT analysis

**Table 9-3 – Heathrow SWOT analysis**

<b>SWOT</b>			
<b>Strengths</b>	<b>UK and international hub</b> Global reputation as UK hub gives leading market position	<b>Proximity to London</b> Infrastructure well established to capture London market	<b>Proven demand</b> Demand reaching capacity – terminals being renovated to improve efficiencies

Weaknesses	<b>Expansion costly</b> High price of residential and commercial land in vicinity	<b>Lack of rail access</b> Road congestion high, rail doesn't provide adequate alternative to most travellers/employees of the airport	<b>Drop in market share as capacity reached</b> Reduction of share of total UK market since 2012 could be interpreted as losing attractiveness to rivals or reaching capacity
Opportunities	<b>Continued passenger volumes</b> Grow passenger and freight traffic from continuing London and Southern population	<b>Expansion/improvement of rail</b> Improvement of rail connectivity to ease road congestion. Crossrail to ease congestion	<b>Freight tonnage continued growth</b> Close vicinity to London means Heathrow can highlight and maximise throughput potential - as long as infrastructure grows to accommodate
Threats	<b>Opposition to expansion plans</b> Environment groups against airport air and noise pollution as well local resident concerns	<b>Land owners</b> Neighbouring land/homeowners being subject to moving has potential to cause legal and financial consequences	<b>Delays in realising expansion plans</b> Delays could lead to connectivity delays affecting local and international business.

### Summary of growth potential

- 9.1.8. Growth in volumes expected to continue as Heathrow's role as the largest UK hub airport relatively unchallenged. The third runway having been given Government approval, will support continued volume growth although surrounding infrastructure will need to be suitable to allow for the increases in activity anticipated.

### Opportunity to develop airport further

- 9.1.9. Large opportunity, excluding new runway, is to expand Heathrow's Rail connectivity. Currently 13M of the 48M people arriving at or leaving Heathrow by surface access currently use the train. Less than 1% of airline employees arrive by surface rail (New Civil Engineer).
- 9.1.10. Great Western Main Line has proposed a route and achieved public consultation approval, from the West of Heathrow, linking up Reading, Twyford, Maidenhead and Slough without requiring a change of train at London Paddington.
- 9.1.11. London Cross Rail to serve Heathrow has potential to ease passenger road use.

### Conclusion

- 9.1.12. With any expansion plans implemented there will be a need review the supporting infrastructure to ensure that access and network development can help realise any expansion that comes forward.

## 10 GATWICK AIRPORT

### Overview

- 10.1.1. Gatwick Airport is the world's busiest single runway airport and the 2nd largest airport in the UK for passenger volumes. Gatwick contributes £5.3bn to the UK economy and supports over 85,000 jobs. Gatwick strives to be an environmentally leading airport. It is first London airport to hold the Airport Carbon Accreditation at "Neutral" level (level 3+) for its ground operations as well as the Carbon Trust's Zero Waste to Landfill standard.
- 10.1.2. Vinci Airports, a French construction and infrastructure operating company, recently acquired a 50.1% stake of Gatwick airport (to be completed mid 2019) for £2.9bn.
- 10.1.3. The current ownership consists of: Vinci Airports - 50.1%; Global Infrastructure Partners (GIP) - 21%; Abu Dhabi Investment Authority - 7.9%; The California Public Employees' Retirement System - 6.4%; National Pension Service of Korea – 6%; Future Fund Board of Guardians (Australia's sovereign wealth fund) - 8.6%
- 10.1.4. The airport supports 12,000 jobs and contributes over £1.6bn in Gross Value Added to the UK Government.

### Investments

- Provisional: Utilising shorter taxiway into a runway for domestic flights (previously refused by local council in 1979) – estimated at £500m
- £1.11 committed spending by Gatwick Leadership; expansion of airplane handling/docking facilities
- A new second runway has been proposed, Gatwick state at this stage they are simply safeguarding the land for a run way rather than actively developing it at this stage.

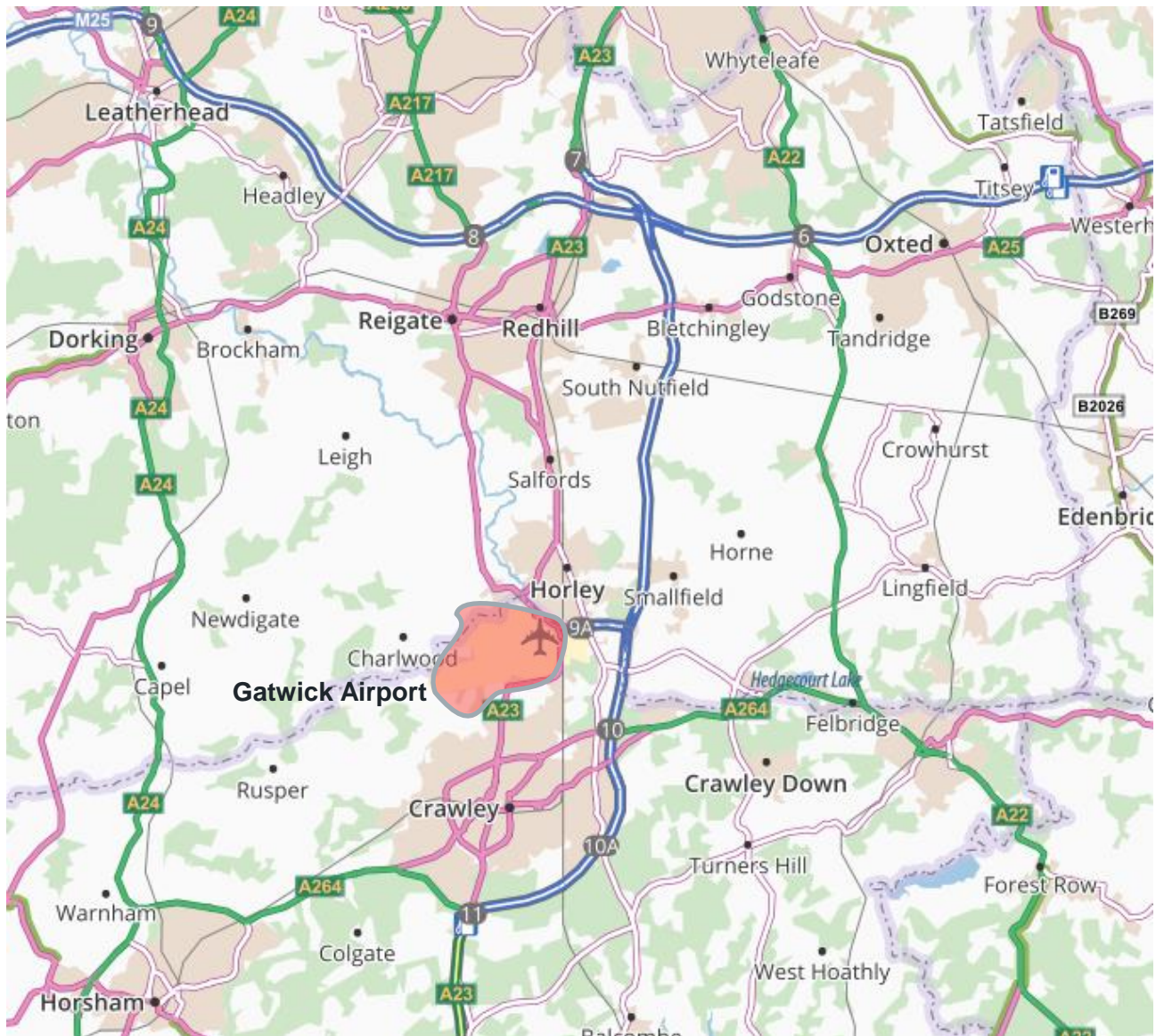
### Network access

Well connected to road network via M23/M25, however this is often congestion. Rail access is good for passengers via overland, however for freight the airport is not connected directly

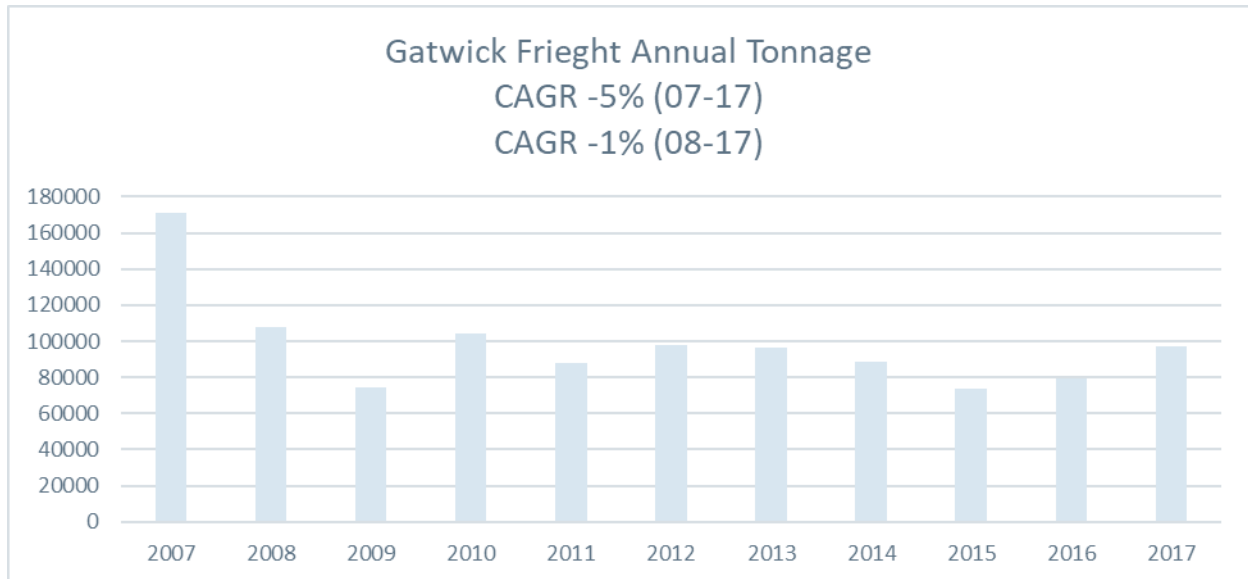
**Table 10-1 – Gatwick network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 143 km LHR: 63 km	M23 M25	46 km	Unknown, but like Heathrow most freight is likely to come to and from a 5-mile radius of the airport.	Unknown

**Figure 10-1 – Gatwick map (Michelin, 2019)**



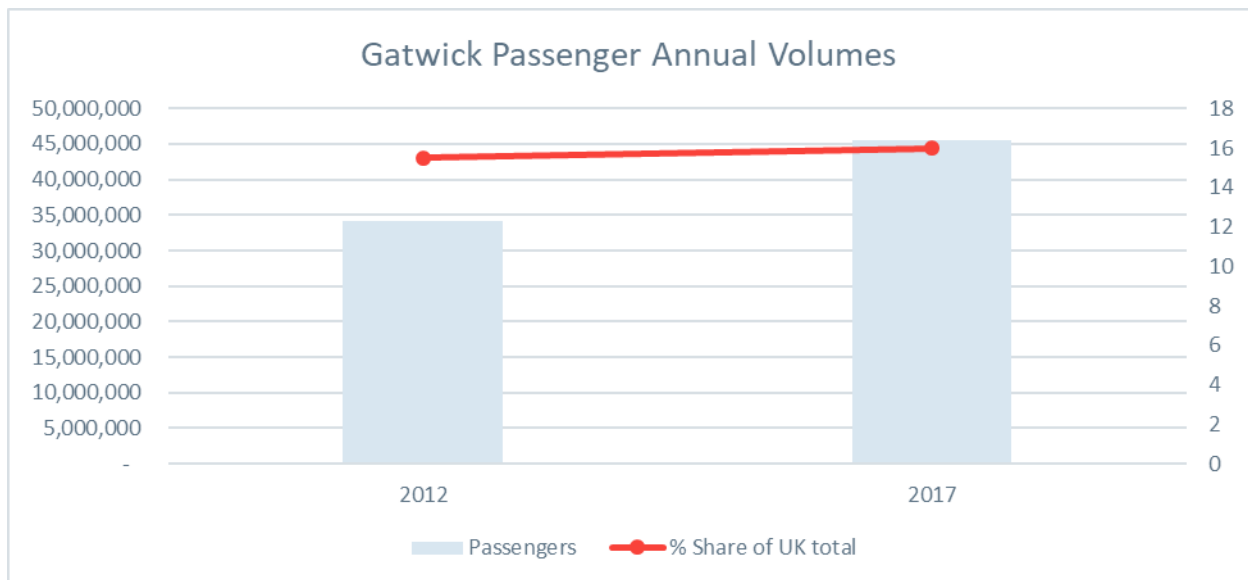
**Figure 10-2 – Gatwick freight volume (Civil Aviation Authority, 2017)**



**Figure 10-3 – Gatwick passenger volume (Civil Aviation Authority, 2017)**

**Passengers** (2012 against 2017);

<b>Passenger volume growth</b>	<b>33.13%</b>
<b>Market share change as share of UK total</b>	<b>0.5%</b>



### Gatwick Airport SWOT analysis

**Table 10-2 – Gatwick SWOT analysis**

<b>SWOT</b>			
<b>Strengths</b>	<b>Location</b> Positioning between	<b>Carbon neutral</b> Positive news for	<b>Rail infrastructure</b> Major Brighton to London train



	London (South) and Brighton are two large markets	shareholders and investors with environmental substantially requirements	line station present at airport. Quick travel from London and Brighton
Weaknesses	<b>Motorway connectivity</b> One single motorway connection to airport often congested	<b>Freight market</b> Distance to London means competitors are better located	<b>Expansion</b> Motorway expansion highly unlikely – Gatwick only major reason for expansion in area
Opportunities	<b>Improve facilities / greater efficiencies</b> Increase efficiency of facilities to improve operations and competitiveness	<b>Rail opportunities</b> Rail station/line on site leading straight to London poses an opportunity for future developments	<b>Increase market share</b> Capitalise on likely short-term disruptive runway expansion plans from Heathrow to increase market share
Threats	<b>Expansion permission</b> Government favour Heathrow expansion as a core interest. Opposition from local Gatwick area provides resistance to upgrades	<b>Heathrow third runway</b> Increased capacity at Heathrow and fixed airline landing fees may attract some airlines to consider shift from Gatwick	<b>Southampton competition</b> Southampton, if it expands to attract more airlines and destinations, could be an alternative for airport for local populations

### Summary of growth potential

- 10.1.5. As Gatwick steadily increases market share of the UK passenger volumes, it is also able to increase its capacity. Gatwick already performs as the busiest single runway in the world (in peak times) and has delivered high returns for its shareholders, demonstrating its value as a UK airport. However, the political opposition to airport expansion is significant and represents challenges to its growth potential.

### Opportunity to develop further

- 10.1.6. Opportunities in freight traffic expansion are present at Gatwick, however the distance to London, the primary market for high end goods, loses out to the established Heathrow and, to Stanstead, which can also cater for the cities north of London.
- 10.1.7. The environmental credentials Gatwick has gained will add to its credibility and reputation, although unlikely to appease environmentalists. Nevertheless, sustainability investors will see this as a great initiative and the airport should emphasise it.

### Conclusion

- 10.1.8. Gatwick has strong operational credentials and shows a desire to grow through continued investment and improvement of efficiency. A lack of variety of destinations though for bellyhold puts Gatwick in a less competitive position for freight. Passenger traffic through Gatwick is likely to remain strong and there may be some uplift with potential disruption at Heathrow during any construction at the airport. Gatwick foresees freight becoming more prevalent at the airport and they will be developing a Freight Strategy which will look at opportunities for freight growth and the associated implications of this on the airport and surrounding network / environment.

## 11 SOUTHAMPTON AIRPORT

### Overview

- 11.1.1. Southampton airport predominately serves domestic and European destinations with low freight volumes handled. Passenger volumes continue to grow; however, the airport has lost a small percentage of UK total market. The freight market fluctuates from 350 to 115 tonnes per year between 2007 to 2017.
- 11.1.2. AGS Airports Limited, which owns Southampton, Glasgow, and Aberdeen airports, is owned by Ferrovial Group 50% and Macquarie Group 50% (through AGS Airports International). AGS Airports Limited bought the group in 2014 for £1.05bn (including debt).
- 11.1.3. Southampton supports 950 jobs and contributes £161m in Gross Value Added to the UK Government.

### Investments

- Current proposal for an elongation of runway (within owned land) - allowing it to more than double passenger numbers from two million to five million a year by 2037. Costs are not yet estimated.

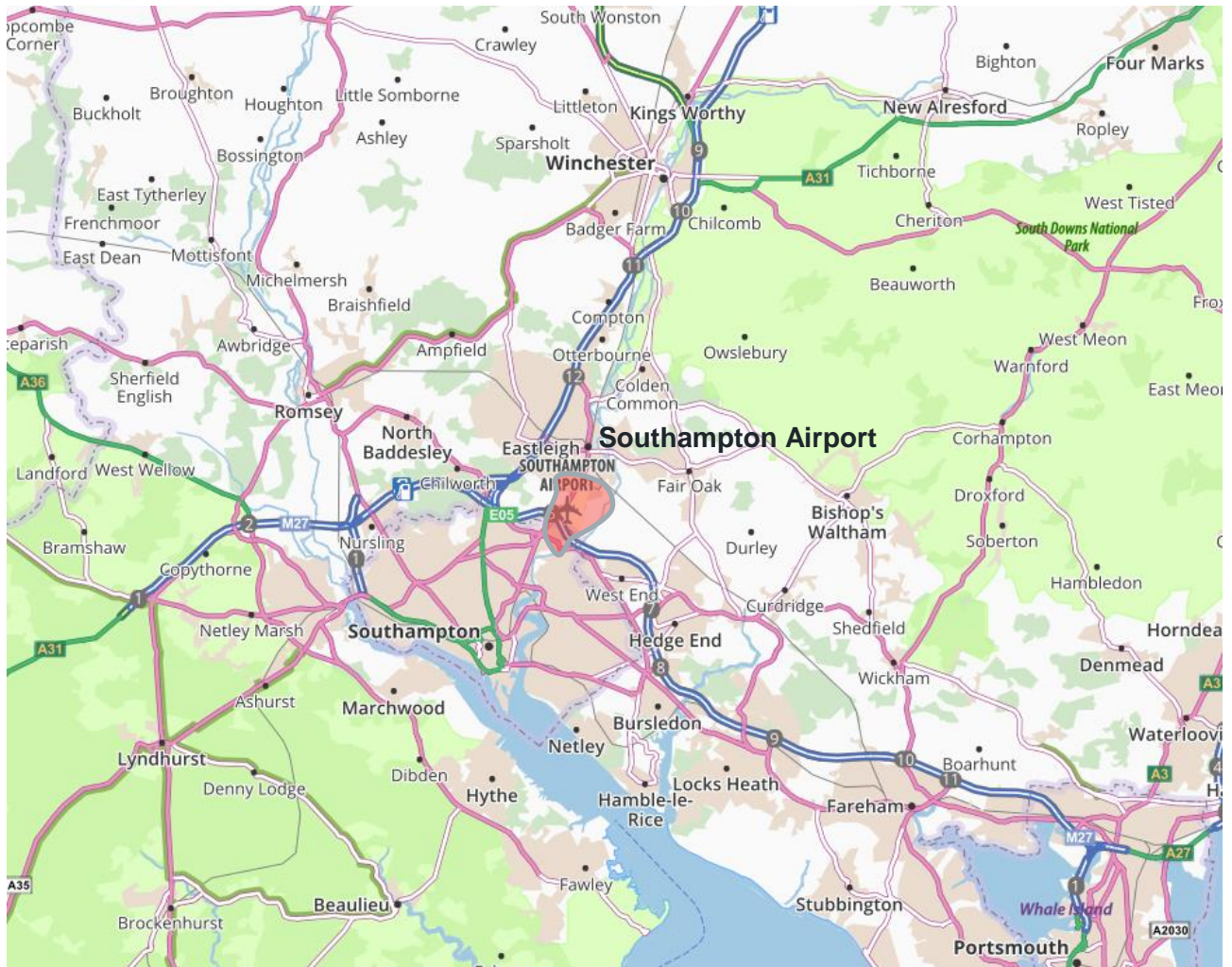
### Network access

- 11.1.4. The airport is well connected to M27 (Southampton to Portsmouth) and M3 (Southampton to London). It is rail connected from a passenger perspective but not for freight.

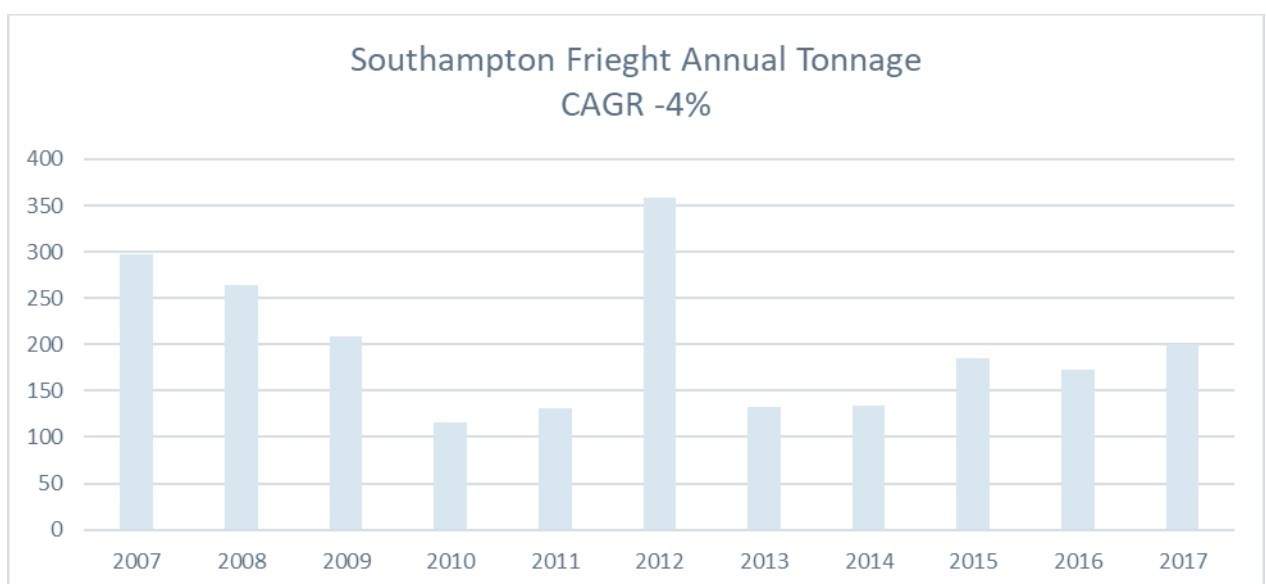
**Table 11-1 – Southampton airport network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
LHR: 100 km LGW 143 km	M27 M3	130 km	Unknown, but as with other airports is likely to be consolidated near to the airport.	Small, high value

**Figure 11-1 – Southampton airport map (Michelin, 2019)**



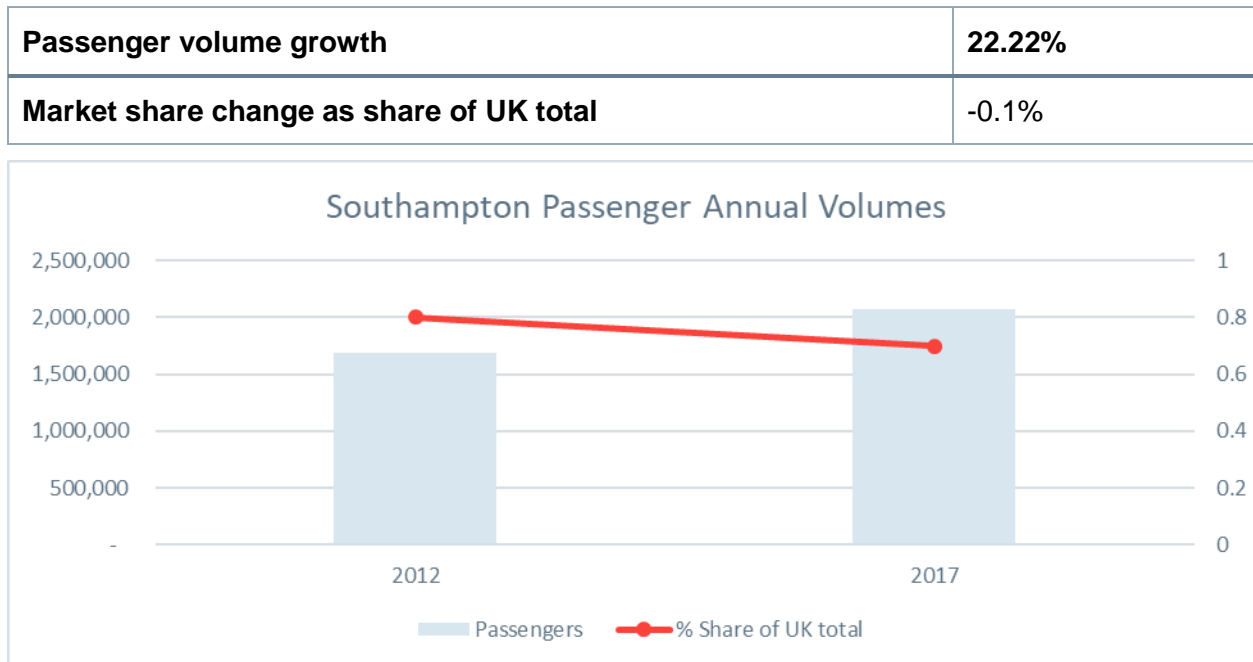
**Figure 11-2 – Southampton freight volumes (Civil Aviation Authority, 2017)**



**Passengers (2012 against 2017);**



**Figure 11-3 – Southampton passenger volumes (Civil Aviation Authority, 2017)**



### Southampton Airport SWOT analysis

**Table 11-2 – Southampton SWOT analysis**

SWOT		
Strengths	<b>Quick expansion possible</b> Elongation of runway to increase passenger numbers requires no new land purchase	<b>Motorway connectivity</b> Well situated at the end of the M3 and along the M27
Weaknesses	<b>Airline routes</b> Southampton cannot offer the larger array of international routes that Gatwick and Heathrow provide	<b>Single runway</b> Adjacent taxiway investment required to improve capacity – currently no adjacent taxi way
Opportunities	<b>Gatwick becoming oversized</b> Target local market from a growing Gatwick	<b>Cruise connectivity</b> Partnerships with the port's growing cruise sector
Threats	<b>Few airlines</b> A single client airline accounts for a large share of revenue income for airport. Losing a single client is significantly more damaging for Southampton than larger competitors	<b>Dependency on Flybe</b> Flybe current financial position is reportedly weak. Southampton dependency on airline is high with 15 out of 21 destinations (winter timetable) exclusively called upon by Flybe

### Summary of growth potential

- 11.1.5. Southampton's local population is set to grow and demand for flights should mirror this. The opportunity to increase flights beyond the EU to compete with Gatwick, given the demand, would benefit local market not only through convenience, but through inbound tourism. A diversification of airline carrier should be sought as a matter of priority.

### **Opportunity to develop the port further**

- 11.1.6. An increase in runway length to attract larger airplanes, not necessarily more planes, should bring cost benefits to passengers, which in turn could increase volumes through the airport.

### **Conclusion**

- 11.1.7. As Southampton's airport operates few different airline carriers, it is vulnerable to revenue shock of its airlines collapsing. Plans for increasing runway length would hopefully bring larger (and more profitable) planes in, and allow for further improvements of infrastructure. The captive market of Southampton does not appear to need increased supporting infrastructure as the passenger throughput remains manageable by pre-existing rail and road networks.

## 12 THE CHANNEL TUNNEL

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### Overview

- 12.1.1. The Channel Tunnel is a 50km rail link between Folkestone and Calais. The concession of the tunnel is operated by Getlink, formerly named Group Eurotunnel. The Channel Tunnel began operation for freight and passenger movements in 1994. In terms of passengers, the Channel Tunnel carries about 60% of the total cross-Channel demand. 26% of the trade of goods between the UK and continental Europe passes through the Channel Tunnel (Getlink group, 2018). It operates 2,077 freight trains per year.
- 12.1.2. Of the total export freight value, the South East contributes just 4% of the UK total (2014 data, EY Report). In part, this consisted of £530m worth of computer and electronics, as well as £365m of transport equipment.
- 12.1.3. The Channel Tunnel is operated via a concession by Getlink, the current concession will expire in 2086.
- 12.1.4. Getlink is a publicly traded company, listed on Euronext Paris and London Stock exchange. Getlink operates four companies; Eurotunnel Le Shuttle (Roll on Roll off (RoRo) commercial and freight train shuttle service), Europorte (rail freight operation), ElecLink (future electric interconnector between the UK and France), and CIFFCO (private railway training centre).
- 12.1.5. As owner of the concession, Getlink earns revenue from allowing other services use of the tunnel;
  - Commercial passenger rail (non-RoRo) is dominated by Eurostar (a subsidy of SNCF), which have a monopoly on the passenger only traffic.
  - Freight rail access, additional to Europorte's own rail freight operations, is granted to Deutsche Bahn Cargo UK (UK's largest freight rail services provider).
- 12.1.6. The Channel Tunnel operates well within sustainability groups and achieved its 5th Carbon Trust Standard certificate in 2017.

### Current/recent major investments

- 2015: Order for 3 new Truck Shuttles to enable Eurotunnel to increase freight RoRo capacity by 20%.
- 2016: Completion of the new freight terminal to allow faster and more efficient truck flows and check in controls.
- 2017 onwards: Silk road connectivity – The Channel Tunnel gave access to a train that travelled the 12,000km journey from the Shanghai. Proving that trade flows along the new Silk Road to the UK are feasible and welcomed.
- 2019/2020: UK France Electrical interconnector is due to be commissioned in Q4 2019 and begin full commercial operations from Q1 2020.

## Network access

Folkestone is well connected from a road perspective, however, is prone to issues when there are blockages at the port.

**Table 12-1 – Channel Tunnel network access**

Airport Connections	Road Connections	Distance to central London	Key destinations for goods	Goods type
Southampton: 225 km LHR: 148 km LGW: 113 km	M20 A20	113 km	Unknown	RoRo

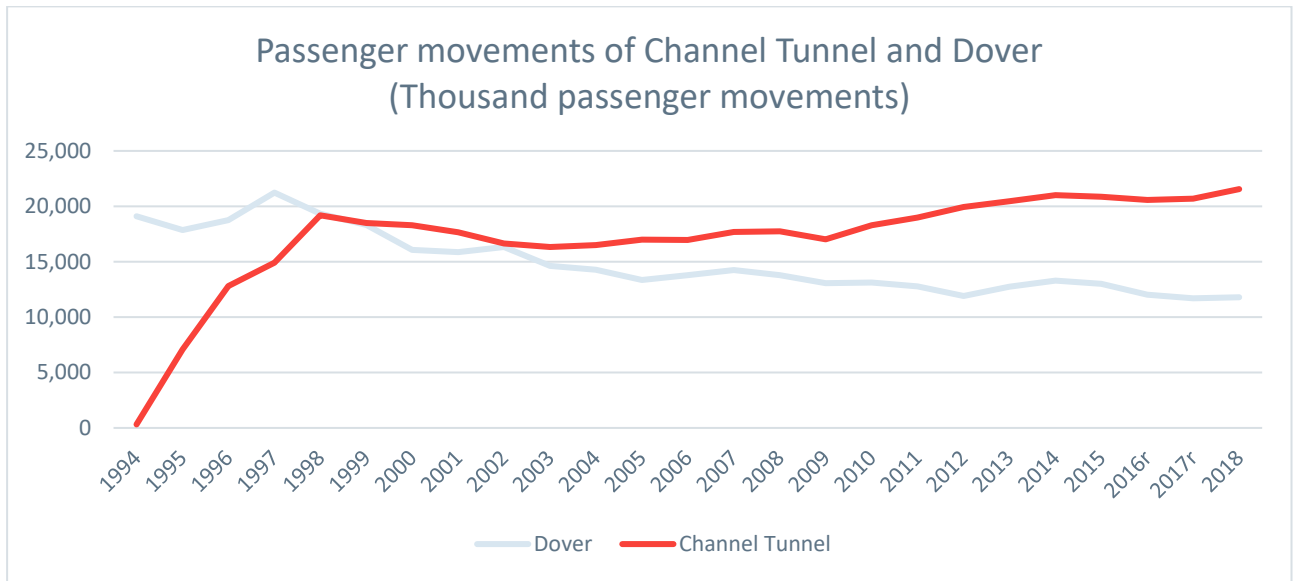
**Figure 12-1 – Channel Tunnel map (Michelin, 2019)**



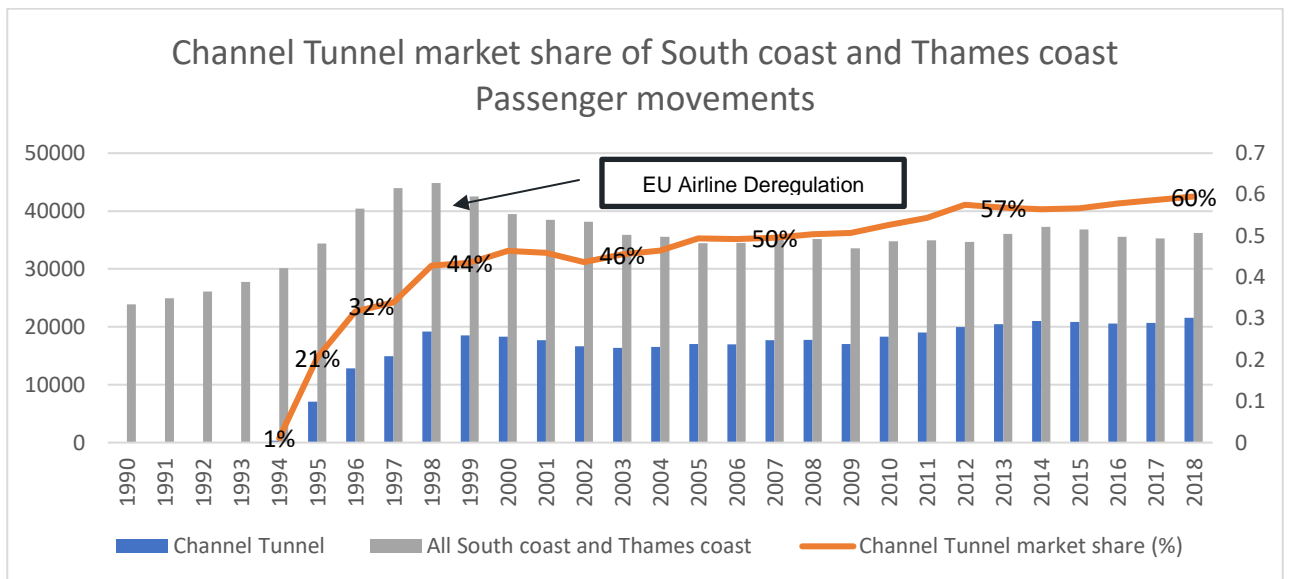
**Table 12-2 – RoRo throughput (DfT, 2017)**

Year	Trucks (millions)	Tonnes of Freight (millions)	Euro tunnel pax (millions)	Eurostar pax (millions)	Freight trains
2010	1	14.2	8.8	9.5	2,097
2018	1.7	22.0	10.6	10.9	2,077

**Figure 12-2 – Passenger movements (DfT, 2017)**



**Figure 12-3 – Market share of South coast and Thames coast passenger movements (DfT, 2017)**



The drop of passenger movements from the South coast and Thames coast's peak in 1998 is likely a result from the deregulation of European aviation in 1997 and the rise of the low-cost airlines.

### Channel Tunnel SWOT analysis

**Table 12-3 – Channel Tunnel SWOT analysis**

SWOT		
Strengths	Weather resilient Usually unaffected by severe weather	Speed Faster (including customs and checks) than ferry crossing

Weaknesses	Reliance on UK – France/EU relations Highly vulnerable to border/political relations issues	Competition from Dover Developments and improvements of efficiencies at Dover will continue to be a competitor to Channel Tunnel operations
Opportunities	New freight and passenger routes Potential to attract cargo and increase visibility by use of the new Silk Road rail link	Diversify revenue of Getlink Electricity interconnector plans shows desire to diversify from RoRo functions of the Channel Tunnel
Threats	Human migration issue unresolved Continued risk of further issues regarding unsettled migrants attempting to reach UK from Calais	Concession/Financial Changes in concession agreement or financial restructuring are external dangers to Getlink

### Summary of growth potential

- 12.1.7. Further infrastructure spend on the Channel Tunnel is limited to efficiency upgrades in the short term. The Channel Tunnel owners Getlink have diversified by expanding to energy interconnectors to ensure growth can be achieved if temporary drops in Eurotunnel and Europorte are experienced. A skirmish into a ferry link (MyFerryLink) by Getlink was refused due to anti-competition laws.
- 12.1.8. Passenger Demand shifts are not expected to drop drastically as a result of the UK's relationship to the EU. A temporary agreement is in place in the circumstance of a 'hard Brexit' which will allow three months of continued operations regardless of what is decided in London and Brussels. Freight may be subject to more risk, largely dependent on the Brexit agreement or non-agreement that is made.

### Opportunity to develop further

- 12.1.9. The development of a rail service to link onto the Silk Road would provide a boost to revenue for the Getlink and demonstrate demand for freight outside of the EU. Deutsche Bahn passenger rail and French budget rail lines have shown interest in operating additional routes through the Channel Tunnel but neither have materialised.
- 12.1.10. Medium and long-term plans of developing a road tunnel have been proposed and were included in the contract that Getlink won to construct the Channel tunnel. The road tunnel was included in the first contract in the form of a commitment to build a second tunnel.

### Conclusion

- 12.1.11. The Channel Tunnel offers an effective competitive alternative to passenger RoRo freight from the UK to continental Europe, as witnessed by its rapid market share growth reaching 44% of total passenger movements of the South and Thames coast in 5 years. Short-term development plans are limited but further efficiencies could continue to grow the Channel Tunnel's market share. Sustainability credentials of rail will continue to benefit Getlink over their ferry rivals. Through rail freight has capacity to grow but there are no signs of this happening in the near future.



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