



Transport for the South East (TfSE)

FREIGHT, LOGISTICS AND GATEWAYS STRATEGY:

Work Package 2 - Review of Baseline Freight
Data and Research, and Future Insight -
Technical Report





Transport for the South East (TfSE)

FREIGHT, LOGISTICS AND GATEWAYS STRATEGY:

Work Package 2 - Review of Baseline Freight Data and
Research, and Future Insight - Technical Report

PUBLIC

PROJECT NO. 70079897

OUR REF. NO. 70079897

DATE: JANUARY 2021

WSP

Three White Rose Office Park

Millshaw Park Lane

Leeds

LS11 0DL

Phone: +44 113 395 6200

Fax: +44 113 395 6201

WSP.com



QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks				
Date	03/08/2021	13/08/2021	25/10/2021	04/01/2022
Prepared by	Sandy Moller	Sandy Moller	Sandy Moller	Sandy Moller
Checked by	Chris Douglas	Chris Douglas	Chris Douglas	Chris Douglas

CONTENTS

1	REPORT INTRODUCTION	1
1.1	INTRODUCTION	1
1.2	REPORT CONTENT	1
2	SCENE SETTING: THE IMPORTANCE OF FREIGHT DATA	2
2.1	THE VALUE OF FREIGHT DATA	2
2.2	THE CURRENT SITUATION	4
2.3	DATA GAPS & RECOMMENDED SOLUTIONS	6
2.4	SUMMARY OF RECOMMENDED SOLUTIONS	11
2.5	SUMMARY THEMES	11
2.6	INVESTIGATING OTHER DATA SOURCES	13
2.7	FUTURE APPROACH	15
3	FREIGHT TRENDS	17
3.1	INTRODUCTION	17
3.2	LEAVING THE EUROPEAN UNION	20
3.3	INCREASE IN E-COMMERCE (INCLUDING IMPACT OF COVID-19)	23
3.4	FREEPORT DESIGNATIONS	26
3.5	HGV DRIVER SHORTAGE	28
3.6	CONSOLIDATION (& MICRO DEPOTS)	30
3.7	SUPPLY CHAIN VISIBILITY	33
3.8	DECARBONISATION	36
3.9	WORKFORCE UPSKILLING	41
4	FUTURE FREIGHT SCENARIOS	45
4.1	INTRODUCTION	45
4.2	CONTINUED E-COMMERCE BOOM	47

4.3	RESPONSE TO COVID-19	48
4.4	URBAN DENSIFICATION	49
4.5	CHANGES TO GLOBAL SHIPPING	50
4.6	MODE SHIFT ROAD TO RAIL	51
4.7	LOCALISED SUPPLY CHAINS	53
4.8	CHANGING CONSUMER ATTITUDES	54
4.9	EVOLVING DIGITAL COMMUNICATIONS	55
4.10	VAN GROWTH	56
4.11	BUSINESS AS USUAL (BAU)	57
4.12	SUSTAINABLE ROUTE 2 GROWTH (SR2G)	58
5	PATHWAY TO BETTER DATA	62
5.1	BETTER SOURCES, BETTER DATA	62
6	CONCLUSIONS & RECOMMENDATIONS	65
6.1	INTRODUCTION	65
6.2	SUMMARY POINTS	65

TABLES

Table 2-1 - Data Gaps & Recommended Solutions	6
---	---

FIGURES

Figure 2-1 - Data Catalogue Fields (Author, 2021)	3
Figure 4-1 - TfSE Influence on Trends (Author, 2021)	60
Figure 4-2 - TfSE Influence on Scenarios (Author, 2021)	61

ACRONYMS

Several acronyms are used in the report, with glossary below:

3PL – Third Party Logistics provider

ABP – Associated British Ports

AI – Artificial Intelligence

B2B – Business to Business

BEV – Battery Electric Vehicle (BEV)

BID – Business Improvement District

BPA – British Ports Association

CIHT – Chartered Institute of Highways and Transportation

CILT – Chartered Institute of Logistics and Transport

CLOCS - Construction Logistics and Community Safety (scheme)

CSRG - Continuing Survey of Road Goods Transport

DfT – Department for Transport

ERS - Electric Road System

FOCs – (Rail) Freight Operating Companies

FORS – Fleet Operator Recognition Scheme

FQP – Freight Quality Partnership

FTZ – Future Transport Zone

JIT – Just in Time

GHG – Green House Gases

GVA – Gross Value Added

HGV – Heavy Goods Vehicle

IBF – Inland Border Facilities

ICE – Internal Combustion Engine

LGV - Light Goods Vehicle

Lo-Lo - Load on Load Off

MaaS – Mobility as a Service

MND - Mobile Network Data

MoSCoW – Must have, Should have, Could have, Will not have

MoU – Memorandum of Understanding

MSRS – Mode Shift Revenue Support

ODs – Origins & Destinations

ORR – Office of Rail & Road

PCL – Port Centric Logistics

Ro-Ro – Roll on Roll Off

RSSB – Rail Safety & Standards Board

SME – Small/Medium Enterprises

SFGGI - Solent Freeport Green Growth Institute

STBs – Sub-National Transport Bodies

TAP – Traffic Assessment Project

UKMPG – UK Major Ports Group

1 REPORT INTRODUCTION

1.1 INTRODUCTION

- 1.1.1. This report is the main output from Work Package 2, Baseline Freight Data and Research and Future Insight, of the TfSE Freight, Logistics and Gateways Strategy work, undertaken during 2021.
- 1.1.2. Good quality, accurate, up-to-date data on the nature of freight movement is essential to understanding the current operation of the freight and logistics industry and to inform freight policy development, target infrastructure investment and identify future trends, all to aid future planning.
- 1.1.3. Unlike other transport sectors and disciplines, the quality, availability and coverage of goods movements at a pan-national and local scale is relatively poor, reflecting, perhaps, a broader lack of appreciation of the freight industry across the public domain and its role in sustaining the quality of everyday life.

1.2 REPORT CONTENT

- 1.2.1. This Work Package 2 output report provides an initial overview of the value of good quality freight data before proceeding to discuss the challenge of developing a robust evidence base, to inform future freight-related decision-making.
- 1.2.2. This is followed by an examination of the current and emerging trends affecting the operation of the freight and logistics sector at global, national and sub-national scales and the shift in data requirements taking place in response to structural changes across the freight industry, as well as the growth in technology use.
- 1.2.3. A set of alternative future freight scenarios are then outlined, setting out how the future demands for freight could develop in order to aid decision making about future planning and investment in the sector.
- 1.2.4. The report then turns to the need to improve data collection methods and outlines the role of public authorities and industry in achieving this. A roadmap has been developed to help illustrate the approach to capturing high quality freight data in the future.

2 SCENE SETTING: THE IMPORTANCE OF FREIGHT DATA

2.1 THE VALUE OF FREIGHT DATA

INTRODUCTION

- 2.1.1. Collating and interpreting data and other information on freight transport is key to appreciating the role and significance of the sector in supporting society and the economy. This ranges from the flows and volumes of goods movements, the types of vehicles used to carry consignments and the origins and destinations of products along a supply chain. A picture needs to be developed which presents the networks and gateways used to move freight, where handling and transshipment takes place, and, ultimately, the impact that all this activity has on wellbeing and prosperity across the TfSE area.
- 2.1.2. Freight data is key. Future interventions to support the efficient, safe and sustainable movement of goods must be backed up by a robust evidence base to secure future investment and resource. A critical step towards this point is the need to source and catalogue data and information available within the public domain and provided from industry, so this can all be assessed at a high level to determine the quality of local insight and determine any 'knowledge gaps'.
- 2.1.3. The assessment of freight data does not have to be confined to freight transport; land use and transport planning documents and industry leaders may hold visions on what towns and cities will aim to look like in the future and how this will have a direct impact on delivery and collections, waste management practices and the demand for travel. Qualitative, as well as quantitative data, is just as important for setting the scene and future horizon scanning across all modes of freight transport.

A Freight Data Catalogue

- 2.1.4. A common general perception exists that there is a lack of freight data available. This is not the case. Freight data does exist, from a variety of sources, across modes and territories. However, this data is fragmented, inconsistent in terminology and collection methods used, often incomplete, aggregated at a national level (compiled and presented by DfT) and geared towards specific needs. In some instances, data is also not available within the public domain due to issues with commercial confidentiality.
- 2.1.5. A Freight Data Catalogue (one of which accompanies this report) is a useful tool to collate together datasets and information sources from across the public domain and, where available, open access industry sources. This helps to illustrate the types of data sets available and highlight 'knowledge gaps' where additional research is required to begin addressing known issues or unlocking future opportunities for better quality data from better sources.
- 2.1.6. As an example, there is very limited primary research undertaken on loading/unloading behaviours in urban areas to help inform local parking/loading/unloading strategy and suitable locations for front door servicing. In another context, there are several strategic assessments of HGV traffic flows, illustrating routing options, but limited engagement with hauliers/own account operators to understand their decision-making rationale.
- 2.1.7. A data catalogue is provided as an Appendix to this report to show the types of freight data sets available, their format, scope, ownership, method of collection and frequency of presentation/update. This catalogue is illustrative rather than exhaustive, is 'live' and can be periodically updated and enhanced to reflect the scale and breadth of the data that is available from different sources. The

following suggestions are recommended to develop and maintain a practical, up to date data catalogue:

- Allocating dedicated resource to collecting data and maintaining the catalogue. This will help to ensure that the evidence is relevant and constructive for analysing. This is really key.
- Uploading the catalogue into a shareable, interactive version that can be easily configured. This reduces any issues with version control whilst providing better transparency.
- Establishing lines of communication (and way of working) with DfT, trade bodies and public authorities (LPAs and LTAs) for receiving updates on latest data insights.

2.1.8. For the purposes of this work, the catalogue has been populated with sources that represent a variety of freight datasets, to illustrate what's available and publicly accessible – and also to help highlight gaps and shortcomings, discussed further below.

Figure 2-1 - Data Catalogue Fields (Author, 2021)

Catalogue Field	Description
Ref	Unique reference number
Title	Meaningful title (with acronyms defined)
Mode	Road, Rail, Air, Port, ALL
Strategy Characteristics	Economy and Employment, Health and Environment, Technology, Policy
Description	Short description of the data
Data Attributes (Summary)	Summary of the key entities / attributes of the data
Format	Description of the format / file type
Granularity	Geographic scale of the data – National, Regional, Local
Source Data Acquisition Mechanism	A description of the data collection process e.g. manual survey, in-cab data recorders, CCTV etc., and source
Data Owner	Name and organisation details of the Data Owner
Publicity Available	Is the data publicly available?
Link	Hyper-link to data (if available)
Periodicity	Frequency of the data production, update or refresh activities
Relative Value	How important is this data to the Freight Strategy? (MoSCoW)

2.2 THE CURRENT SITUATION

INTRODUCTION

2.2.1. There are notable problems with the quality and availability of freight data available within the public domain, best presented using the following five 'S's:

- **Sparse**; there is generally limited data collected and available within the public domain about freight specific activities, as freight is not prioritised in comparison to passenger and active travel statistics
- **Selective**: The data available tends to be collected by public authorities, as opposed to conveying 'real life' industry operations
- **Skewed**: The data captured can often be heavily quantitatively based and focusing on reporting activities whereas qualitative methods are apt at capturing behaviours, opinions and insights that inform activity
- **Siloed**: Freight-specific data sets don't intersect with wider transport and land use concerns and are often a 'bolt on' piece of analysis considered at the end of a process, rather than integral to it
- **Standards**: There are no standard freight data collection methodologies developed at a national scale to enable benchmarking or monitoring, whilst the terminology used can also be inconsistent.

DATA CATALOGUE FINDINGS

2.2.2. The process of searching for data sets revealed that the vast majority, within the public domain, are held by DfT. Over 100 catalogue entries were compiled across various modes and geographies and are presented in the supporting Appendix. The key observations are as follows:

- There is some local and regional data but accessible information is mainly in the form of National high-level data.
- Data is fragmented and not standardised; whilst there are datasets that are missing information or are not clearly legible.
- Inevitable gaps exist in depicting commodities flows and for selected modes (Air & Rail & Urban freight).
- Dependency on Network Rail for rail data, where accurate data is limited on actual flows that have taken place.
- In terms of urban movements:
 - There is some data within local strategies (e.g. Local Transport Plans) but this is not defined
 - Very limited statistics on vans and micro-mobility exist
- Data movements (OD's) exist but there is a lack of granular data on commodities being moved and levels of vehicle utilisation.
- Carbon baselining is extremely difficult to quantify, as need tonnage lifted and km's moved, which are not available at local levels.
- Disparity between how operators report fleet movements and stats DfT provides; with the former being difficult to obtain.

2.2.3. Other more broader observations relating to data capture (quality/quantity) and appropriateness include, but are not limited to:

- The consistency, understanding and accessibility in reporting metrics used
- The potential public sector skills gap and resource committed for collecting and using freight data

- The different level of interest and demand for datasets between public and private sector organisations (e.g. capturing tailpipe emissions and environmental externalities versus average cost per parcel and operational efficiency).
- Use-cases and which data sets to use to provide the right level of insight, reducing 'freight data blindness'

DATA GAPS

2.2.4. The following pages tabulate the key data gaps identified during the process of building the freight data catalogue. The headings under the table are as follows:

- **Data Gap:** As implied, this is the missing piece of absent data identified.
- **Mode Type Impacted:** This is the mode that is affected by the absence of datasets
- **Explanation:** This is an account of the problem and the extent of the gap analysis
- **Recommended Solution:** This is the proposed option that could be taken forward by TfSE

2.3 DATA GAPS & RECOMMENDED SOLUTIONS

Table 2-1 - Data Gaps & Recommended Solutions

Data Gap	Modal type Impacted	Explanation	Recommended Solution
Knowledge of freight origins, destinations routing and contents	All modal types	HGV movements are based on the DfT's Continuing Survey of Road Goods Transport (CSRGT), which is a very simple sampling survey. From the data available, the sample size is not large enough to provide statistically reliable information, at a local level, by commodity. 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 other STBs, potentially using TfSE area as a sample area, for new freight data collection methodologies testing. TfSE should encourage DfT to take ownership of the standardisation of terminology and collection methodologies. There is also potential to use telematics data such as that from Microlise etc. Solution for STBs to collectively form a data partnership with Highways England / Network Rail and DfT - plus with freight operators.
Lack of emissions data, especially for rail and air	Rail and Air	Stems from a lack of information of load capacity of vehicles. If we do not know how heavy the load a vehicle is carrying, it makes it difficult to accurately calculate the emissions it produces.	Work with DfT and others, including DEFRA, and rail and air transport operators, to make sure data is more accurately recorded and made freely available.
The volume of domestic or foreign freight moving across the TfSE region that originates or is destined for ports (intra regional) by commodity type and mode	Road and Ports	Tonnage volumes through ports are well understood but how this translates to HGV movements varies from port to port. There is also very little information to understand the exact destination of imports within the UK and precisely 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 (and/or look for data gathering opportunities using port booking systems) to source more comprehensive data. Consider the possibility of the use of telematics-derived data and /or mobile phone data.

Data Gap	Modal type Impacted	Explanation	Recommended Solution
Lack of data on LGV/vans	Road	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). It is believed that only around a quarter of vans are connected to deliveries, with the remainder service vehicles.	Work with central government and/or other STBs to explore how best to develop a greater understanding of the nature of van fleet use. Potentially use TfSE area as a sample area for van use surveys and do a Specialised Goods Vehicle Count (SGVC) looking at van movements in the TfSE region, to enhance baseline data. The process entails undertaking counts during the course of a 12 hour day (07:00-19:00) and capturing registration, body type, operating company, vehicle size and any other relevant observable details. This can be capturing using record sheets 'in real time' or deploying temporary cameras. Automatic Number Plate Recognition (ANPR) can also be used to identify vehicles, including vehicle routing and vehicle class (e.g. LGV/HGV). Mobile applications such as Counterpoint can also be used for capturing baseline data cost effectively.
Gaps in freight-related spatial planning policy and guidance, reducing the understanding of planners of how to plan for freight	All modal types	Policymakers and spatial planners (both planning policy and development control) set and enforce the strategies, policies, regulations and conditions; they therefore define the operating environment for freight movements generated by new development. A lack of knowledge and anticipation of freight dynamics when assessing and determining strategic and project specific decisions can have consequences on transport networks, surrounding businesses and local communities. Freight needs to be a key consideration as part of Transport Statements/Assessments in support of planning applications. Those documents should go beyond simply accommodating freight demand and access for LGVs/HGVs to foster mode shift and alternative zero emission deliveries.	Logistics training to create awareness and knowledge of effective solutions to reducing freight movements or other freight-related activities. This includes the delivery of standards and being aware of new 'regulations' being introduced. TfSE could develop guidance such as freight awareness training, including data collection/interpretation, and make this available to Local Authorities' Officers and Members within their region to assist them in understanding policy changes. This could be done in partnership with operators.

Data Gap	Modal type Impacted	Explanation	Recommended Solution
Understanding of empty running and load fill	Road	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 are limited, as data collected to date fails to accurately profile fill by weight, volume and deck length.	Use further stakeholder engagement to better understand the variance and fill gaps, in addition to utilising the data available in CSRGT. TfSE could work with technology companies who run online freight exchange platforms and electronic logistics marketplaces, to look at standardising data and development of automatic transaction recording, as well as partnering with industry operators to agree terms of access to their load fill data by weight, volume and deck length.
Lack of data on major freight receivers/consignees	All modal types	Understanding the origin and destinations for freight travelling through the region.	Work with stakeholders such as the Department for Transport (DfT), Civil Aviation Authority (CAA), British Ports Association (BPA), Network Rail (NR), RHA and Logistics UK, to undertake a combination of qualitative based phone interviews to capture general trends and travel patterns. This could include setting up working groups within the Freight Forum and/or collating more granular data from operators (e.g. GPS data) on freight origin/destinations to better understand where freight travelling through the region starts and ends its journey (or the path it takes through the region) There is an opportunity to work with UK Major Ports Group (UKMPG), British Ports Association (BPA) and individual port operators to better understand future forecasts.

Data Gap	Modal type Impacted	Explanation	Recommended Solution
Locations of distribution centres and operators, as well as information about warehousing in the UK, particularly current and future capacity vs demand	Road	A better understanding is needed of where key hubs and vehicle numbers are, as well as furthering understanding of the locations of current and pipeline warehouse and logistics premises in the region.	TfSE should undertake a logistics property review working with the property sector (starting first with the UK Warehousing Association (UKWA) to establish baseline data on B8 warehousing, including but not limited to B8 stock, utilisation/occupancy (including single versus shared use, regional density, ownership (including management), sectoral analysis and growth projections. The review should also factor in pipeline B8 developments, including specific location, type of build (e.g. speculative or purpose built for a specific user), together with existing developments in use, plotting these to track freight generators - and to better understand the nature of demand for logistics land and premises. This would be best conveyed as a live, interactive GIS map.
Wharves and terminal usage	Rail and Water	Identifying constraints on capacity, proposed wharves and terminals that are safeguarded and recommended strategic sites that warrant safeguarding.	Work with port and rail bodies to assess the potential of inactive wharves and rail terminals/sidings and develop a more comprehensive understanding of the nature and use of inland waterway and coastal shipping infrastructure within the TfSE area. TfSE should commission a study into coastal shipping and inland waterway infrastructure and current operations to better inform planning.
Industrial and land use reporting through strategic planning policy (including land assessment	All modal types	Data on what land use is planned for a particular area (land use allocations) alongside that which already exists, to enable planning for transport services and other potential infrastructure needs. This may already be produced as GIS layers and available as interactive maps on individual LPA websites but the information available may not be consistent across all LPAs across the region (and less accessible within the public domain). Freight flows can be another layer to add to this interactive reporting tool.	Collaborating with all LPAs to build on existing databases and online resources to develop a consistent and standardised format (interactive GIS dashboard) for viewing industrial and land use data with the opportunity to upload traffic assessment details (anticipated freight flows) and convey headline figures for both freight operations caused by people wanting to receive/send goods as part of their business operations; and freight operations in connection with a particular freight/logistics facility or operating base.

Data Gap	Modal type Impacted	Explanation	Recommended Solution
Lack of data on locations of major infrastructure developments	All modal types	Only very limited data regarding future developments and infrastructure projects is available. Increased major infrastructure development will increase freight construction movements and it is important to know how this will impact in terms of congestion, safety and air quality in advance	TfSE should develop a publicly available source providing improved visibility of future growth and development, as well as its planned infrastructure investment. Like the London Infrastructure Mapping Application (IMA) or London development database (LDD) - this would also link to more accurate tracking of available logistics premises and land within the TfSE area. Sourcing and allocating resource will be key to maintaining and analysing data and producing/identifying meaningful outputs.

2.4 SUMMARY OF RECOMMENDED SOLUTIONS

- 2.4.1. The ultimate aim of the recommended solutions outlined in Table 2-1, is to capture better quality data that accurately conveys 'real' operations across the freight industry. This depends on establishing better working relationships with operators across all modes and providing some incentive and motivation to encourage data sharing.
- 2.4.2. This will reduce the reliance on sampled surveys and the collation of fragmented data that can only allude to the high level operational status of the freight network. The current process is also labour intensive compared to the opportunity presented by collecting data passively through the use of in-cab technologies (and its associated analytical software).
- 2.4.3. Developing new data methodologies for data collection and sharing should be a priority recommendation that informs further investments downstream. However, this will depend on the engagement from industry and the collection and sharing of real world data. The first step will be to try and gain buy in and support from trade bodies and to establish a dialogue with other STBs and DfT for developing a consistent approach to stimulating interest by industry.
- 2.4.4. The main data gap for prioritising initially is freight loads and the door to door journey of goods consignments. There is limited supply chain transparency and the lack of visibility ultimately skews the understanding of goods flows; not just vehicle flows. Currently, there is a knowledge of modes and vehicle types for transporting goods but the contents of freight transport travelling along the supply chain which are not currently recorded at a granular level.

2.5 SUMMARY THEMES

- 2.5.1. A number of themes can be extracted from the identification of data gaps. They are as follows.
 - Representation - existing data capture only tells part of the story through sampling, which has its inherent inaccuracies. More granular, real life data required - which can only be achieved by working with partners and using standardised collection methodologies and terminology (and where possible methods of collection that is accessible to all).
 - Transparency - Difficulty in knowing where data is stored and where it actually exists in the first instance. This is partly attributed to poor signposting and the interchangeable use of different terminology. Furthermore, some databases are also more established than others - which can be dictated as much by funding than other factors.
 - Geography - Data coverage may be limited to the scope of a study such as local authority boundary, travel to work area or operational radius, rather than a consistently defined region. There may also be data gaps where transshipment and mode shift takes place/ This can result in fragmented layers of data which don't accurately depict door to door journeys. This is especially pertinent for international gateways.
 - Trends - A lack of data on particular modes and freight activity can be attributed to the rapid acceleration of emerging trends, such as LGVs in recent years. There is limited longitudinal data to monitor growth patterns and difficulties in distinguishing the true nature of actual use (with assumptions being made to inform decision making). The same applies to other subject matter areas where more 'up to date' data is required to inform alternative strategies.
 - Motivations - Data sourced from industry is notoriously challenging to collect, collate and utilise in a meaningful way due to commercial confidentiality. Furthermore, the data that is 'meaningful' to

private sector organisations, that of operational efficiency and cost effectiveness, is likely to differ to public authorities desire to capture emissions and road safety figures and ultimately balancing social, environmental and economic aims.

- Technology - Without implying technology is the silver bullet behind better data, it has a crucial role to play in addressing data gaps and both streamlining and automating the data collection process. This must be matched by nudging behaviour change across the industry to agree upon terms of access to freight data and the adoption of mobile platforms and systems. Technology can help standardise data collection and can be especially effective if it seamlessly integrates with everyday operations.
- Data Type - There is a tendency to prefer quantitative based data capture to be able to undertake rigorous interpretation of statistics. However qualitative feedback is equally as important for conveying narratives around freight and understanding decision making pathways. The use of technology to capture actual freight flows and movements, such as GPS origins/destinations must be complemented by sourcing the rationale and reasoning for trip generation.

- 2.5.2. Many, if not all, the data gaps identified are national issues that require a national solution. Partnership working is therefore key. TfSE will need to work closely with DfT and other STBs to develop a consistent and coherent approach to data collection. Freight flows and movements take place across borders and therefore standardisation offers the opportunity to analyse details at a granular and strategic level for informing policy interventions. It is will essential for other public sector organisations to feed into the data collection process because of their ability to extract thematic details at both a localised and strategic scale – providing this is easy to obtain and can offer meaningful insight.

IMPROVING DATA STANDARDS

- 2.5.3. The National Infrastructure Commission (NIC)¹ strongly recommends that DfT develop a data standard for freight data collection to support local authorities including outlining data requirements, formatting and technological capability for collection, collation and monitoring. This has been partly endorsed by DfT in recognising the challenges faced with data standards, quality and consistency.
- 2.5.4. DfT are working with other STBs on opportunities and challenges with freight data and analysis with Transport for the North (TfN) having recently developed a prototype freight data repository to inform strategic planning for freight. TfSE would be well placed to understand more about the model that has been developed and to work closely with DfT through the Future of Freight work to be aware of forthcoming data standards.
- 2.5.5. These are due to be unveiled through the development of a National Freight Data Repository, mirroring that developed for public transport, which is being funded through a pathfinder project to guide the collection and analysis of better quality data for decision makers. TfSE should wait in anticipation of the findings; with a view to informing next steps.

¹ National Infrastructure Commission (2019) Better Delivery: The Challenge for Freight, <https://nic.org.uk/app/uploads/Better-Delivery-April-2019.pdf>

2.6 INVESTIGATING OTHER DATA SOURCES

TRADE BODIES

- 2.6.1. In this context, trade bodies are member associations providing services and support to registered freight transport operators and generators. They are representative bodies directly aiding individual members on a case by case basis whilst speaking on behalf of a collective when shaping future policy discourse, building awareness of subject matters and promoting best practice.
- 2.6.2. The level of service provided by trade bodies varies whilst the extent to which granular operational data on members can be shared is minimal due to commercial confidentiality. However, trade bodies like Logistics UK and RHA, can and do provide higher level 'state of the nation' reporting along thematic lines which includes statistics and qualitative feedback sourced direct from industry. These are key documents that provide a useful snapshot of freight and logistics trends and scenarios.
- 2.6.3. Trade bodies are a key partner and sounding board to developing future regional and local freight policy as many are actively engaged in consultation exercises and lobbying activity at a national level. Trade bodies are the perfect avenue for engaging direct with industry and collecting data through surveys (qualitative/quantitative) for informing consultation responses. This communication channel and the analysis that forms part of their service, would be a useful avenue to explore for TfSE on the basis of making an informed decision on future interventions.

MOBILE NETWORK DATA

- 2.6.4. The use of Mobile Network Data (MND) has been popularised since the advent of smart phone technologies and more accurate satellite navigation systems. The use of MND is highly relevant in the context of building origin / destination matrices but is still in its early stages of maturity.
- 2.6.5. A recent recommendations paper, 'Utilising Mobile Network Data for Transport Modelling' (Transport Catapult, 2016) outlines five topic areas for consideration when considering the use of MND, namely:
 - MND pre-processing;
 - MND data request / specification;
 - Benchmarking;
 - MND to model matrix;
 - and legal and ethical considerations.
- 2.6.6. There are many virtues of capturing data through mobile technologies namely:
 - Telecommunication equipment (the infrastructure required to send signals) has been widely adopted and accepted. The costs of deploying quickly and with speed are reduced.
 - Mobile phone tracking technology has already been well used across other sectors to provide locational bases services e.g. nearest restaurant.
 - It is a practical and cost-effective solution with individuals being geolocated through mobile devices simply using Global Positioning Systems (GPS) and local Wi-Fi or via mobile telecommunication networks.
 - Mobile telecommunication networks generate substantial amounts of data which is highly representative of local movements.

- MND can replace more ‘traditional’ methods of data collection by recording actual behaviours – potentially into perpetuity. This can aid with monitoring and evaluation.

2.6.7. There are also challenges with this approach, namely

- Mobile phone tracking is reliant on the quality of telecommunications antennas that carry voice and data in the Global System for Mobile Communications (GSM). The quality of data is based on the density of cell towers and regional coverage.
- Extensive processing would be required to reveal trip details and transport modes (alongside protecting the integrity/identity of the user).
- Origin-Destination data, the key matrices from analysing MND, takes place across zones in a region but will not be able to detect movements and flows outside a geographical scope.
- There are moral and ethical concerns about tracking people, especially if they have not explicitly consented to their movements being monitored.
- There is room for misinterpretation of data and challenges with accuracy and reliability – especially if the monitoring zones are not representative of actual flows.

2.6.8. Freight visibility and the desire to receive a live insight into delivery activity through the supply chain used other methods such as Electronic Logging Devices (ELDs) and physical sensors in road freight vehicles. Mobile applications, used by drivers and intended to run in the background, are also effective and have been used to create load matching platforms. These are also dependent on the telecommunications network but also through the promotion of trade bodies to generate uptake.

REDUCING FREIGHT DATA BLINDNESS

2.6.9. Freight blindness, the inability to comprehend and proactively plan for goods movements within every day and strategic decision making, is no coincidence. Freight can be seen as the silent, understated network operating behind the scenes and shaped by free market forces with limited state intervention and coordination. This is certainly the case given the relative attention and investment skewed towards passenger, private and active transportation.

2.6.10. Any attempts to boost the role of freight across public and private domain and eventually embed freight considerations in transport and land use decision making, will take time. The following suggestions would aim to raise the awareness of freight as part of the ‘transport mix’ and to develop a baseline comprehension of data requirements.

- Membership to Logistics UK, the trade body representing all freight sectors, with a view to arranging awareness building events for staff across LTAs/LPAs within the region. This is simply to provide some content to what freight and logistics looks like on the ground.
- Internal ‘Train the Trainer’ approach towards learning and development; whereby those skilled in collecting, collating and analysing freight data organise internal upskilling training sessions with other colleagues – who subsequently pass on the same training to others.
- Simple dashboard catalogue, available to all LTAs/LPAs, showcasing the different types of data that can be collected with a visual portrayal of how the data can be captured and its virtues in simple, laymen’s terms. This could be tailored around different scenarios (e.g. High Street Pedestrianisation requires traffic cordon counts during peak and off-peak periods with ANPR).

2.7 FUTURE APPROACH

- 2.7.1. The approach towards freight planning across the UK currently involves using different models that draw on a variety of datasets, collated over many years, from across the industry. The Great Britain Freight Model (GBFM), developed and owned by consultants MDS Transmodal, has been used by many organisations, including DfT, for many years to aid with public sector planning and strategy development. The model contains data drawn from sources such as the CSRGT and local surveys to build a picture of the freight context; with a view to informing decision making.
- 2.7.2. However, the accuracy and usefulness of the model and its output is only as good as the quality of data captured and inputted for processing. Here lies the crux of the issue.

The GBFM

Key features:

- Baseline origin-destination matrix of freight demand and network flows for road and rail for Great Britain (GB).
- International flows between GB and the continental mainland and Ireland by shipping route.
- Commodities transported and type of HGV or train.
- Cost models that 'explain' freight movement by mode and route.
- Forecasts to a future year.
- Scenarios to quantify the impact of future changes in the market or policy environment.
- Outputs in terms of volume of freight moved by mode and route; industry (user) costs; environmental and congestion (non-user) costs.

A TFSE FREIGHT MODEL

- 2.7.3. A freight model for the TFSE area would, in theory, offer the opportunity for TfSE to understand the current baseline for freight movements (across modes) within its area, subject to the quality of datasets used within the model. It would also potentially enable the impacts of measures to be tested, ranging from infrastructure improvements to new interventions (like open access freight consolidation centres) to the impact of new warehouse developments on the network. (These may require development of different types of models, not necessarily possible in a single build).
- 2.7.4. However, given the strategic importance of the South East and the presence of high volumes of through traffic on long distance national and international strategic freight corridors, the South East cannot easily nor meaningfully be modelled in isolation. On this basis and drawing on the work undertaken in WP2, we believe there would be little, if any, long term benefit in TfSE developing a freight model, in isolation, for its own area.
- 2.7.5. While there may be short term benefit to STBs in developing their own models and other tools, within their own boundaries, this will not help to resolve the already very fragmented approach to freight data collection, management, manipulation and forecasting.
- 2.7.6. Standardisation of methodologies and terminologies are key issues relating to freight data and modelling. We believe the focus should be on better coordinating for consistency in approaches,

across STB areas, overseen and actively supported by DfT, rather than in further isolated activity, compounding that fragmentation, which is the case today.

- 2.7.7. This is about ensuring the consistency of approaches in data collection analysis and interpretation and calls for a set of terms, systems and procedures to ensure that data across the country is comparable (acknowledging that freight flows are cross border and not confined to regions).
- 2.7.8. Links between STBs are essential to achieve a coordinated approach and DfT must play a pivotal role in providing both high level strategy to achieve much better integration and practical, tactical guidance on the detailed approach to be used – from data collection methods to be used, right down to the standard terms to be used.
- 2.7.9. For example, “road freight”, “roadfreight”, “Road Freight”, “Roadfreight” or “Road freight”... These multiple terms for the single mode category have been encountered repeatedly in our data review work for this work package and help to illustrate the variety - and sheer complexity – of challenges facing better coordination of freight data collection and modelling.
- 2.7.10. Our work in developing the data catalogue (and a freight data repository for Transport for the North) has required intensive cleansing of data sets to ensure consistency, which doesn’t exist in the raw forms of data currently publicly available. In fact, extensive manual cleansing was required in this instance to make the data fit for purpose, especially as the data was derived from a variety of sources. Having standards for terms right through classifications and into collection methodologies will help to improve the quality of outputs and make more meaningful use of data sets, with much less time required to cleanse and amend before using.
- 2.7.11. On this basis, we believe the preferred approach for STBs, not all of which have developed at the same pace, nor have the same level of insight on freight issues, would be to pursue DfT to own the process of standardisation and coordination – not least to better understand their plans for the GB freight model (or its successor), moving forward.
- 2.7.12. This will involve detailed engagement and interaction with the DfT Future of Freight team, whose remit includes this issue. TfSE could champion the work, overseen by DfT, to develop a best practice version of a regional freight model, which could then be used to provide the architecture template for application across other STBs.
- 2.7.13. A TfSE model, with full DfT involvement, could be a beacon example, to showcase across the remainder of the country. This would follow a similar approach where DfT have been observers on the development of the TfN Freight Data Repository, to assess its potential to increase in scope. This approach would also enable TfSE to work with other STBs in the development of its prototype.

3 FREIGHT TRENDS

3.1 INTRODUCTION

3.1.1. A trend is an activity that is predicted to take on additional prominence in public life. Identifying trends is key to future planning, to respond to changing circumstances and expectations, which includes the way in which goods are moved along a supply chain.

3.1.2. There are a number of freight trends that have emerged in recent years that have already had a profound influence on planning future transport systems to meet local economic, social and environmental objectives. The core trends which hold particular relevance to the TfSE area include:

Leaving the European Union (Section 3.2)

3.1.3. The ramifications of the UK's decision to withdraw from the European Union on trade relations, customs procedures and ultimately, the flow of people and goods, cannot be understated. This extends to the supply of labour to fulfil roles within the freight and logistics sector, particularly HGV drivers whilst the combined impact of all factors has and will continue to have short and long term implications on supply chain activity. The short term effects are being heavily publicised in national media outlets whilst industry is responding to new conditions through changing the nature of freight activities (e.g. the rise of unaccompanied trailers at UK ports for last leg distribution).

3.1.4. The rise of Port Centric Logistics, sustainable procurement and supply chain visibility are two reactionary scenarios to the decision to leave the European Union and it will be crucial moving forwards to observe short term trends versus the longer term picture and to ensure that data on cross border movements can be accurately captured. The proportion of non-EU goods flowing through international gateways is also likely to increase.

Increase in E-Commerce (including impact of COVID-19) (Section 3.3)

3.1.5. The sheer rise in online retailing, accelerated by Covid 19, has had significant implications on delivery activity. The responsiveness of industry leaders and their ability to deliver large volumes of parcels on a same or next day basis, has raised consumer expectations with large fleets of LGVs serving this growing demand. Whilst there is a common misconception that the vast proportion of LGV traffic on UK roads can be attributed to the rise of e-commerce (when it is in fact servicing activity), there are many externalities from the increase in traffic volumes and attempted front door deliveries.

3.1.6. More importantly moving forward is the impact of e-commerce on warehousing demand across the UK and the South East of England and the challenges with securing affordable land to meet this growing demand. This must be reconciled with other priorities, such as housing and secure employment opportunities with more data and information required across the region to create optimal future freight scenarios and balanced economic, social and environmental conditions.

Freeport Designation (Section 3.4)

3.1.7. The move towards designating Freeports across the UK is emblematic of the levelling up agenda and the role of international gateways as key economic engines of the future. These sites, covering selected ports and airports, will benefit from a raft of tax exemptions and streamlined processes to stimulate trading activity and economic agglomeration to help address some of the current challenges faced by the freight industry. This includes skills and training, the shortfall in warehousing and

logistics property and road freight dependency, alongside responding to the challenges faced from leaving the European Union on imports/exports.

- 3.1.8. The South East of England relies heavily on its international gateways so it will be important to closely monitor the impact of freeports and their contribution towards GVA and secure, skilled employment opportunities across the industry alongside their ability to address some of the aforementioned challenges faced by the freight industry.

HGV Driver Shortage (Section 3.5)

- 3.1.9. The HGV driver shortage, widely publicised across national media outlets, is currently having a direct impact on supply chain efficiency and the ability for meet consumer demand. This is a longstanding issue extending back numerous years which has been recently exacerbated by the loss of drivers from the European Union. The short term ramifications are now being felt across the industry; with suppliers unable to get products to market at the same speed or at the same volume. Haulage companies, who typically operate smaller profit margins, need to retain staff through raising wages (a positive from the perspective of providing secure, skilled and well paid job opportunities) but have a limited pool of drivers being trained to meet growing demand.
- 3.1.10. Longer term, there is a strong desire to improve supply chain resilience and reduce the dependency on road freight through mode shift to rail for strategic journeys (as part of the decarbonisation agenda) alongside changing the demand for goods through localising supply chains and sustainable procurement practices. Equally, HGV drivers may also start to be held in greater esteem with greater focus placed on the professionalisation of the workforce and public recognition of the role.

Consolidation & Micro Depots (Section 3.6)

- 3.1.11. Consolidation is the freight industry's current 'buzz' word. The desire to reduce the externalities from HGV and LGV movements is particularly pertinent in response to a perfect storm of the ongoing placemaking agenda, efforts to decarbonise road freight and balancing the pursuit for operational efficiency with the rapid rise in delivery demands (linked to e-commerce). New regulations coming into play that seek to limit emissions and restrict access are acting as key triggers for the freight industry to consolidate goods and to deliver these by zero emission vehicles over the first & last mile.
- 3.1.12. Finding suitable locations for consolidation centres (remote and micro) will be a challenge with competing demand for space in peri urban and central locations. Consolidation is increasingly important as urban areas densify and additional freight demand is generated.

Supply Chain Visibility (Section 3.7)

- 3.1.13. Demonstrating transparency across supply chain activities is increasingly popular for all parties to respond to changes in circumstances and for forward planning. This is especially timely due to the disruption to global supply chains as a consequence of leaving the European Union and the repercussions from the pandemic – with delays having direct financial implications.
- 3.1.14. Greater visibility of supply chain activity is also becoming commonplace for providing sound customer service by consumers to track the progress of a delivery. Consumers are also increasingly aware of their purchasing decisions and wish to be regularly updated on the status of their purchase – to the point where it offers logistics companies a competitive advantage.

Decarbonisation (Section 3.8)

- 3.1.15. The recent Transport Decarbonisation Plan 2050² sets out aspirations to transition away from fossil fuels and to reduce GHG emissions across all forms of transport. The pace of change taking place across the freight sector is disproportionate, with road haulage and the use of alternative fuels for HGVs being more difficult to achieve at pace than other sectors, such as rail. Targets are in place to ban the sale of ICE vehicles and vessels which provides further impetus for encouraging the adoption of alternative fuels or stimulating mode shift away from road freight, the biggest contributor of emissions.

Workforce Upskilling (Section 3.9)

- 3.1.16. Workforce professionalisation is the upskilling of current and prospective employees to attain better operational and performance standards expected of a company and the freight and logistics industry. Professionalisation, in this instance, also implies addressing job shortages and responding to the use of new technologies as well as confronting social, economic and environmental challenges faced by the industry.
- 3.1.17. The following section aims to provide a breakdown of each trend by providing:
- A description of the trend and how this manifests broadly speaking. This includes the key characteristics that have been identified.
 - The impact of the trend (at a global/national scale) on the freight and logistics sector
 - The outlook in the TfSE area and contextualising the positive and potential implications of the trend regionally. Data snapshots help to illustrate the significant of the trend.

² DfT (2021) Decarbonising Transport, A Better Greener Britain,
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

3.2 LEAVING THE EUROPEAN UNION

3.2.1. The implications on the freight industry of the UK leaving the European Union (Brexit) are numerous and continually unfolding, even after the transition period has officially concluded. Brexit has had ramifications for trade flows and the movement of goods, including direct and immediate impacts on freight forwarding and maritime shipping activity.

3.2.2. There is still some uncertainty as to the longer term impacts of leaving the European Union on globalised supply chains and consumer behaviour from tariff changes, whilst the impact of the COVID-19 pandemic has skewed future forecasting and in many cases parked longer term decision-making for companies involved in the cross border transshipment of goods. Emerging trends include the following:

1. Implications of evolving legislation on the UK road freight industry and the cross-border movement of goods to markets.
2. A requirement for customs processing and procedures for freight forwarders to gain authorised access into and out of the UK.
3. Increased stockpiling of goods, witnessed through the early part of the pandemic, for minimising supply chain disruptions.
4. Potential mode shift and supply chain changes that intersect with maritime shipping and road freight transport.
5. Direct changes to immigration policies and the subsequent effect on workforce availability and staff retention across the industry.

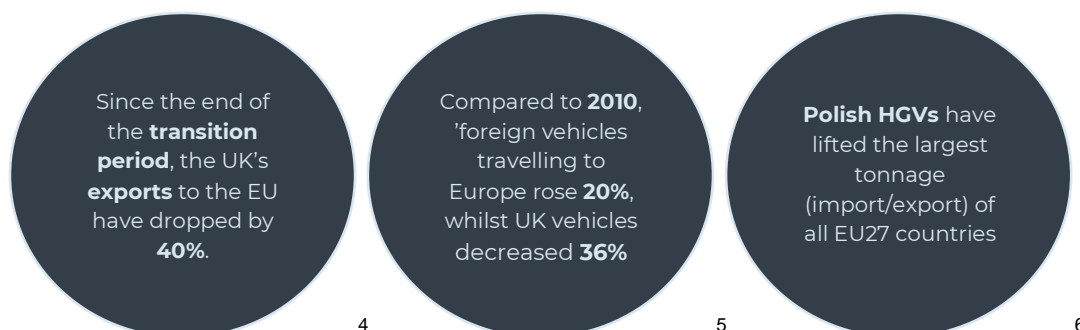
IMPACTS

3.2.3. Having left the European Union will inevitably have repercussions over the short and medium term and effect different parts of the supply chain. The impacts have been cross referenced to the emerging trends set out above.

1. Pre pandemic, there was a trend towards increased use of foreign registered vehicles importing exporting goods to and from Europe simultaneously with a decrease in the volume carried by domestic UK hauliers³. This may reach a point where certain goods and an increased reliance on an already saturated UK haulage sector leads to rising costs and demands further impetus behind HGV driver recruitment efforts.
2. Supply chain efficiency will suffer as a consequence of delays; impacting businesses financially and stimulating a shift in consumer behaviour. Dedicated provision, namely Inland Border Facilities (IBF) will be required to aid customs processing; a substantial short-term investment (offsets need for lorry parking)

³ DfT (2021) International Road Freight Statistics, United Kingdom 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1006739/international-road-freight-statistics-2020.pdf

3. Direct financial implications on businesses for additional inventory management and storage requirements. This situation triggers a race for space for warehousing in the short and medium term which is driving up the cost of warehousing.
4. Triggering organisations to re-evaluate supply chains and procurement practices, to source locally both in the short term and as part of businesses longer term forward planning. This may be a trigger for economic agglomeration.
5. Shift in cross border road freight journey characteristics, with UK hauliers increasingly likely to collect unaccompanied trailers from international gateways to complete last leg distribution. The same situation applies for Europe bound consignments.
6. New immigration legislation exacerbates HGV driver shortages and reduces the labour supply for key affiliated industries that have a freight requirement (agricultural sector); raising the cost of producing and shipping food.



OUTLOOK IN THE TFSE AREA

- 3.2.4. The repercussions of leaving the European Union have been, and will continue to be, particularly relevant in relation to freight and logistics within the TfSE area. This is primarily attributed to the scale and significance of major international gateways situated across the area and the access provided via ports, in particular, to the European Union. Whilst the impact of driver shortages will be felt nationally, the changes to freight dynamics triggered by additional custom clearances, such as the rise of unaccompanied trailers, will have a more specific impact of port environments. The predicted increase

⁴ BBC (2021) UK exports to European Union drop 40% in January, <https://www.bbc.co.uk/news/business-56370690>

⁵ DfT (2021) International Road Freight Statistics, United Kingdom 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1006739/international-road-freight-statistics-2020.pdf

⁶ Deloitte (2019) Brexit Industry Insights, <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/international-markets/deloitte-uk-brexit-industry-insights-logistics.pdf>

in non-EU goods resulting from new trade agreements, will also demand additional storage capacity and handling requirements on site.

- 3.2.5. The breadth and exact impacts of legislative changes are still manifesting themselves; making it very difficult to accurately plan and forecast future freight trends across the area longer term. There are a number of risks associated with uncertain trading conditions and the absence of pre-planning for this eventuality, namely:
- Potential for backlogged traffic at ports as a consequence of custom processes and checks which has, to some extent, been addressed short term through IBFs. Operation Brock, the traffic management system in place to manage queues across Kent, is due to continue into perpetuity to govern HGV flows to the Port of Dover and the Channel Tunnel at Folkestone.
 - The real financial threat to operators, especially smaller haulier firms, from delays and congestion from the additional regulations coming into play alongside rises in fuel duty. Freight forwarders will also have to incur additional shipping costs and will need to navigate stricter border controls – which all have time and therefore cost implications.
 - A lack of future foresight and planning, for example, catering physically for the increase in unaccompanied freight, which can help navigate around Working Time Directives, driving licence requirements and ECMT International Road Haulage Permits (for EU travel), will stem the responsiveness to maintaining supply chain efficiency.
 - The ability for operators to fulfil contractual obligations. Some logistics providers have clauses stipulating that deliveries must take place within a certain timeframe, with penalty clauses being activated for delays to delivery. Again, this presents a very real financial risk to the export of goods.
 - Delays at international gateways may trigger a change in shipping pathways away from the South East of England and the UK more broadly. Furthermore, UK trade with the rest of the world may require bigger vessels to dock in ports providing there is capacity. Investment is therefore required to futureproof trade volumes, both in terms of landing areas for containers and the size of berths.
 - Continued stockpiling, which has taken place short term in response to a Just in Case scenario. This increases costs for businesses who have stock idling in warehouses whilst limiting the availability of warehousing space for other uses (the opportunity cost). Ultimately this situation could lead to changes in shipping paths and use of other gateways across the UK.
- 3.2.6. The current uncertainty surrounding trade relations and future freight flows with the EU does put additional emphasis on the role of Freeports and their ability (when formally operational) to streamline processes and diversify the role of international gateways for future resilience. Policies supporting port-centric logistics combined with road and rail enhancements can offset aforementioned challenges and drive economic prosperity.
- 3.2.7. Many businesses and freight operating companies still coming to terms with new legislation and adjusting their operational procedures, journey planning and, in some cases, their business models, to reflect a 'new normal'.
- 3.2.8. The availability and accuracy of data and decisions will also have been diluted due to COVID-19. There is also some variation in the data captured and analysed between parties; DfT for example provide periodic forecasts (see [Research and statistics - GOV.UK \(www.gov.uk\)](https://www.gov.uk/research-and-statistics)) which have different approaches for ports and airports. The Port of Southampton, for example, has its own, commercial projections which provide more granular forecast data for specific commodity sectors which could aid with planning future rail (and road) requirements with FOCs. Southampton is predicting a 40% uplift in

container volumes and a doubling in the number of cruise passengers and automotive volumes over the medium to long term which will necessitate additional laydown areas, reduced container ‘dwell time’ and the provision of additional rail freight paths.

- 3.2.9. The reduction in international inbound freight consignments may have a positive impact on alleviating pressure on HGV parking capacity, especially in Kent and around Dover, the largest Ro-Ro port in the UK/Europe. There are a number of other trend attributes that have been highlighted below:



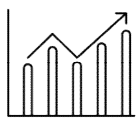
Increased demand for customs processing sites of significant scale and proximity to the SRN and ports, especially Dover, to manage the volume of HGV flows. Locations must be sensitive to local communities and special land use designations.



A continued surge in demand for warehousing and distribution space, particularly around the Solent ports (designated freeport) and larger urban conurbations where vacancy rates are low and land for new developments is already constrained.



Potential demand for additional land capacity for trailer/container holding areas and transshipment taking place at ports, in response to a reduction in foreign hauliers accessing UK land and prolonged transshipment periods.



Stunted growth in logistics and port-centric developments that have previously relied on access to EU workforce availability; driving up costs and potentially limiting the location of developments to major conurbations (where there is a labour source).

3.3 INCREASE IN E-COMMERCE (INCLUDING IMPACT OF COVID-19)

- 3.3.1. Online retailing and the rise of e-commerce, facilitated through the development of the internet and expansion of 4/5G networks, is stimulating a paradigm shift across the freight industry; both in terms of the items being moved and the demands placed on infrastructure, technology and land use planning. The COVID-19 pandemic has further exacerbated that growth to levels never previously anticipated.
- 3.3.2. This trend has taken place concurrently with the decline in traditional retail and the changing role of the high street – both of which are attributed to the lack of business resilience (exposed during the pandemic) and changing consumer habits. This has had a simultaneously effect on freight trips within urban centres (e.g. stock delivery) and driven interest in warehousing/fulfilment space by online retailers.
- 3.3.3. Until recently, Business to Business (B2B) deliveries and haulage was the mainstay of the freight sector, but the opportunity to shop virtually and receive goods to the doorstep, in contrast to a ‘bricks and mortar’ store, has led to the dynamic growth in Third-Party Logistics (3PLs) and Business to Consumer (B2C logistics sectors. These are characterised by:
1. The delivery of parcel consignments on increasingly short lead times, in urban and rural areas, in a ‘next day delivery’ economy.

2. Emergence of market leaders becoming household names and establishing premises across different parts of the UK – Amazon, for example.
3. Rise in LCV registrations, approximately 24% over five years⁷, synonymous with the changing face of the freight industry and the flexibility that they afford.
4. Domino effect of online retailing on the future of high streets and the role of ‘bricks and mortar’ shops in the future.
5. The need to store, process and transport items along the supply chain in an efficient manner which is facilitating a demand for bigger B8 premises (the ‘super shed’ and different use/types of warehousing capacity (flexible/shared assets) requiring larger premises.

IMPACTS

3.3.4. The boom in e-commerce, which has accelerated during the COVID 19 pandemic, is one of the most explicit freight trends that can be observed. The impacts have been cross-referenced to the trends outlined earlier.

1. Increase in traffic volume and vehicle miles which will have consequences on congestion, air quality and the quality of the public realm, particularly acute in urban areas, along with risks to road safety.
2. Trend towards larger 3PLs and online retailers, such as Amazon and DHL, playing a role as anchor tenants in new and existing business and distribution parks close to the SRN and major conurbations (for proximity to the end user).
3. Potential cascading or purchasing of higher emission vehicles being sourced to respond to demand; which could exacerbate air quality issues without widespread incentives for decarbonisation and ‘green fleets’.
4. The convenience and availability of goods purchased online is stimulating a shift in the role of high streets, land uses in central, urban locations (intensification of residential accommodation) and the urban realm.
5. Rising demand for warehousing, fulfilment and logistics space (B8 sheds) in convenient locations, alongside the need to access available workforce. This can also lead to competing demands for other land uses and issues with affordability and availability - which is facilitating the rise of new business models including shared B8 assets and flexible leases.

⁷ SMMT (2021) LCV registrations up 22.0% in February as larger vans drive market growth, <https://www.smm.co.uk/2021/03/lcv-registrations-up-22-0-in-february-as-larger-vans-drive-market-growth/>

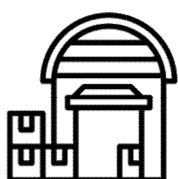


OUTLOOK IN THE TFSE AREA

- 3.3.5. The rise in online retailing is a global trend that plays out at the local level across towns and cities across the UK. The issues and impacts, as well as the opportunities that this presents, will manifest similarly across the TfSE area.
- 3.3.6. The proximity of London to international gateways and major freight corridors, by road and rail, makes the TfSE area particularly attractive to serving this growing market; although land supply (reflecting both availability and affordability) for the associated infrastructure is a notorious challenge for scaling up operations.
- 3.3.7. The popularity of e-commerce looks set to continue concurrently with the changing role of the high street and consumer behaviours; although the extent, in the last 18 months, may have been artificial, in response to social distancing and lockdown measures, rather than part of a wider trend. There are a number of other trend attributes that have been highlighted below:



Failure to address the rise in Internal Combustion Engine (ICE) LGVs, driven by the boom in e-commerce, may impact AQMA action plans, ULEZ and emerging Clean Air Zones



Investors and 3PLs will be sourcing large warehousing? space in close proximity to larger conurbations (end users and a labour force), to develop or source space for warehousing, distribution and fulfilment centres

⁸ Statista (2021) Worldwide e-commerce share of retail sales 2015-2024,

<https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/>

⁹ RAC (2017) The Implications of Internet Shopping Growth on the Van Fleet and Traffic Activity,

https://www.racfoundation.org/wp-content/uploads/2017/11/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf

https://www.racfoundation.org/wp-content/uploads/2017/11/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf

¹⁰ DfT (2020) Estimated motor vehicle traffic, <https://roadtraffic.dft.gov.uk/regions>



The increase in LGVs, commonly associated with e-commerce, combined with the drive towards decarbonisation and carbon neutrality, can drive innovations in last mile logistics (see Solent FTZ).



The e-commerce drive fuels the placemaking agenda and the 'experiential' economy of older cities and towns and enables the delivery demand management strategies for creating better places for people.

3.4 FREEPORT DESIGNATIONS

- 3.4.1. The recent designation of eight 'Freeports' across the UK, including across the Solent area and Thames from April 2022, is designed to have a catalytic impact on regenerating deprived coastal communities by incentivising development around major ports and international gateways. There are many parallels to Enterprise Zones already established across the UK.
- 3.4.2. The trend towards focusing on international gateways through the designation of Freeports is designed to:
 1. Enable goods, arriving into Freeports and stationed on site, to be exempt from tariffs until they are transhipped to destinations elsewhere across the UK
 2. Offer new and existing organisations short term tax breaks for investing in the area (or being based within the designated area)
 3. Simplify customs procedures, planning processes and gain access to additional government funding
 4. Stimulate economic regeneration and port-centric logistics, to provide jobs, skills and to drive innovation
 5. Strengthen the position and role of international gateways in response to leaving the European Union

IMPACTS

- 3.4.3. Freeports are being specifically promoted as a tool for 'levelling up' the UK economy and stimulating private sector investment across coastline communities and international gateways. The timing of the designation is significant as it mirrors the transition period and disruption taking place across other freight networks in response to the UK's exit from the European Union. The impacts include:
 1. Shifting potential supply chain activity and maritime freight paths between UK ports; with implications on road and rail freight demand (and by that nature, future provision).
 2. Stimulating port-centric logistics hubs and economic agglomeration activity and unlocking new and emerging economic sectors, whilst seeking to consolidate existing markets.
 3. Reducing pressure on infrastructure, customs processing equipment, land and labour requirements and thereby enhancing the appeal of designated ports for road freight.

4. Directly contributing towards economic prosperity and enhancing the visibility and image of freight as a key economic driver with wider benefits to society.
5. Helping ports to diversify and aligning growth ambitions with future market potential, whilst helping to also mobilise the decarbonisation agenda.

111213



OUTLOOK IN THE TfSE AREA

- 3.4.4. The designation of freeports, namely Solent in the TfSE area, as well as the outcomes from the designation along the Thames, is intended to deliver an increase in regional and national prosperity. Whilst a number of supposed benefits have been described, there is some scepticism about the extent to which they will have a positive impact on the freight and logistics industry.
- 3.4.5. Freeports can cover all the different types of international gateways, such as airports or rail hubs, although no rail hub announcement has been made in this respect to the TfSE area. However, as an emerging trend, there will be a requirement to identify and futureproof candidate sites and the potential land and infrastructure requirement to foster business clusters and added value services.
- 3.4.6. The potential offered by Freeports to support mode shift towards rail freight has been noted, especially if streamlined planning processes can overcome notorious issues with siting Strategic Rail Freight Interchanges (SRFI) across the South East of the UK. Furthermore, the discourse around Solent Freeport emphasises the potential multiplier effect it could have on trade flows across the rest of the UK, particularly with regards to the relationship with the Midlands. There are a number of trend attributes that have been highlighted below:



Freeports could enhance and consolidate international trade and provide additional revenue source for UK hauliers handling goods and shipping goods within the TfSE area and the UK as a whole.

¹¹ KPMG (2021) UK Freeports Overview,

¹² Solent Freeport (2021) The Nation's Global Gateway, <https://solentfreeport.com/>

¹³ BPA (2021) English Freeport Factsheet,

<https://mcusercontent.com/9fa5533f9884aad39ffc18f0e/images/50c2cfd1-2865-4c25-8888-b175c15dd185.png>



Freeports across Solent would be likely to accelerate the trend towards port-centric logistics and could utilise streamlined customs and planning processes to address lorry parking issues and warehousing need.



The package of offers could potentially displace inward investment away from other parts of the UK and other ports, towards the Solent; and lead to capacity issues at smaller ports e.g. Poole.



Freeports are inherently about partnership working; in the case of Solent case combining public authority interests (DfT, University of Southampton, City Councils) with ABP, Solent Gateway, DP World the Port of Portsmouth to deliver shared goals and coordinated investment programmes.

3.5 HGV DRIVER SHORTAGE

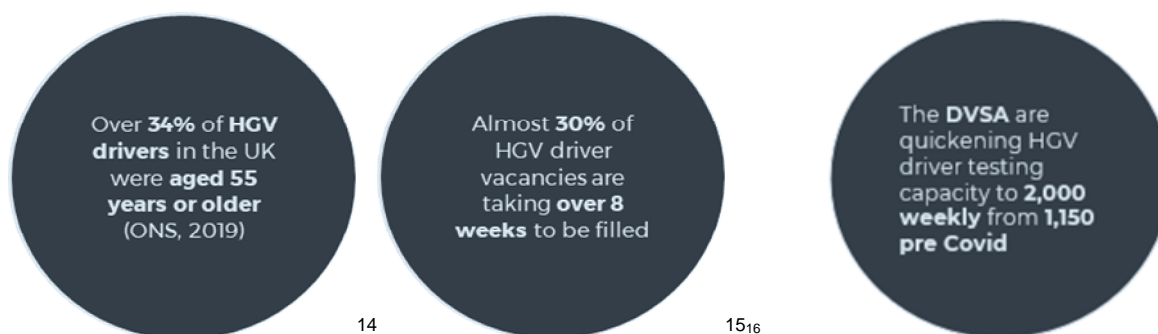
- 3.5.1. The HGV driver shortage is undoubtedly the most publicised and recognised industry trend that has been covered by national media outlets in recent years. However, the current lack of drivers, with estimates from different sources ranging between 40,000 – 80,000, is not a new issue; although the ramifications of leaving the European Union have exacerbated the situation.
- 3.5.2. Somewhat inevitably, the driver shortage is likely to continue into perpetuity; despite efforts to fast track licensing approvals, finance training programmes or attempts to work with the insurance industry to reduce driver premiums (a major overhead for operators, who are predominantly SMEs).
- 3.5.3. The following factors have become synonymous with the HGV driver shortage in recent years:
 1. Disproportionate growth in HGV driver wages, in response to supply and demand, and difficulties retaining workforces
 2. The relatively poor working conditions for drivers; reflected through the absence of welfare facilities and the industry image
 3. Challenges with recruiting drivers, especially for long distance haulage and the greater appeal local delivery jobs.
 4. The implications of leaving the European Union on EU workers wishing to stay (or entitled to work) within the UK, or obliged to leave
 5. Challenges with consolidation and load sharing, if there is less flexibility for serving multiple sites/brokering shared loads. The current availability of restricted licencing legislates against optimal loading by limiting the movement of goods to own accounts.

IMPACTS

- 3.5.4. The COVID-19 pandemic has demonstrated the value of HGV drivers as 'key workers', in keeping supermarket shelves stocked, delivering much needed personal protective equipment and sustaining the UK economy more generally. However, the combined influence of the pandemic and leaving the European Union is having an impact on supply chain efficiency and the availability of goods, alongside triggering a broader debate on the future of road haulage and the driver profession.

3.5.5. The impacts include the following:

1. The driver shortage is driving up wage demands and businesses' operational costs; eroding operator profit margins and reducing funds needed for reinvestment and to ensure overall financial stability
2. Continued decline in the number of people entering the HGV driver profession and consequent vicious cycle of rising wages and higher transport costs cascading through to higher food costs and the cost of living.
3. A shift towards more 'localised' B2C distribution, concurrently with a trend towards localised supply chains and food production as part of the circular, sharing economy.
4. The exodus of drivers from the industry is adding impetus to the role of automation or in the growth in the use of rail for long distance haulage as a long term, technology-led future
5. Haulage operators working without any spare vehicle capacity and unable to optimise due to strict collection and delivery times. This is more pronounced when drivers are in short supply



OUTLOOK IN THE TFSE AREA

- 3.5.6. The HGV driver shortage is not confined to a single place or region. The impacts of driver shortages on the delivery of goods to store are difficult to attain; with future scenarios ranging from the need to request the army to supply to supermarkets, through to strike action over driver conditions and welfare.

¹⁴ ONS (2021) HGV drivers by age and nationality, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/adhocs/13636hgvdriversbyageandnationality>

¹⁵ BBC (2021) How serious is the shortage of lorry drivers? <https://www.bbc.co.uk/news/57810729>

¹⁶ DfT (2021) Letter to Industry, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004268/hgv-driver-shortage-letter-to-industry.pdf

- 3.5.7. HGV flows are particularly high and are likely to remain so along core freight routes across the TfSE area, namely along the SRN approaching Dover, the M25 orbital and connections down to Gatwick (M23), Southampton (A34, M3) and West Berkshire (M4).
- 3.5.8. The UK HGV driver shortage looks set to impact the stopping requirements of longer distance hauliers on routes to/from international gateways (90% of all international freight flows come in via this means across the UK) to comply with working hours directive.
- 3.5.9. There are limited discussions taking place around reducing the demand for HGV drivers and the demand for goods to be delivered across prolonged distances; with potential trends emerging around localised food production and sustainable procurement that sources from local suppliers, to reduce freight miles. This should be a key focus for local authorities who can work across disciplines to foster greater self-sufficiency and sustainable supply chains working with community organisations. There are a number of trend attributes that have been highlighted below:



The absence of lorry parks and appropriate range of welfare facilities at major freight generators (airports and ports), alongside key corridors (e.g. M2, M20, M25, M27, M3, A34) has been well publicised, to retain HGV drivers and boost the professions appeal to prospective recruits.



A change in Ro-Ro traffic (replaced by greater numbers of unaccompanied trailers requiring last leg distribution) and increase in LO-LO consignments in response to supply chain changes, will boost the demand for UK road fleets and optimise 'on road' time; This could still escalate the demand-supply challenge if technology isn't used to coordinate collections/drop offs.



The potential mode shift opportunities being explored (at pace) for road to rail that could be offered between southern ports (with railheads) towards the Midlands and Golden Triangle for last mile distribution by road (e.g. A34 movements).



The south east already has higher costs of living than most of the UK. Further rises in food costs and essential items could erode the standard of living, especially for those on lower incomes/in poverty, living in deprived coastal/estuarial communities.

3.6 CONSOLIDATION (& MICRO DEPOTS)

- 3.6.1. As raised in Work Package 3 (Infrastructure), open access, shared consolidation is often cited in emerging transport and local plans, which allude to its virtues for efficient urban freight movements. The concept is not new as industry naturally seeks to optimise journeys, to reduce costs and maximise payloads. There are also different models and types of consolidation, which can be best described, in a freight context, as the process of bringing together consignments into a location for onward movement within a supply chain.
- 3.6.2. Consolidation can also take place at different scales; ranging from 'remote' locations in peri-urban locations off the SRN, through to 'micro' depots situated within urban centres, close to the end user and combined with zero emission deliveries. Recent, successful developments have been

industry led and fuelled by interest from public authorities seeking to fulfil environmental obligations (e.g. improving air quality). The key trends in consolidation practice include:

1. Responding to the rise in e-commerce and increased B2C freight journeys delivering to residents, at scale and at pace
2. Consolidation viewed as part of a package of urban freight measures that can reduce freight miles, tackle air quality and traffic congestion
3. Fostering partnerships between industry and public authorities, to deliver shared benefits; whether cost savings or joint procurement
4. Processing goods and optimising vehicle payloads, as well as reducing empty running, journey re-timing and overall freight miles
5. Consolidation is being pursued against a backdrop of regulatory changes (e.g. Clean Air Zones) and local access restrictions

IMPACTS

3.6.3. Consolidation, particularly parcels and post for urban consignments, can bring numerous commercial and environmental benefits, to satisfy the interests of different stakeholders. Ultimately, consolidation aims to remove/reduce road freight from/in sensitive areas, optimise carrying capacity and improve operating efficiencies, which can help unlock driver time and redistribute this to other consignments. The impacts of consolidation include the following.

1. 3PLs sourcing micro consolidation locations or urban depots in larger conurbations, in order to be closer to end users. This extends to repurposing retail stores and providing new local revenue streams to the owners of premises that have been repurposed.
2. Public authorities exploring mandatory use of consolidation centres, allocated land use and/or subsidising early stage operations linked into wider agendas around urban placemaking and decarbonisation.
3. Co-operative urban consolidation centres are being explored to foster different 3PLs to facilitate zero emission distribution. Public authorities are also better utilising estates whilst centre lease lengths requirements vary.
4. Fostering more efficient end to end supply chain movements, benefitting operational and cost efficiency; whilst application of trip demand management techniques can reduce negative externalities.
5. 3PLs are now considering the use of low or zero emission vehicles alongside the use of rail and waterborne movements and consolidation sites that connect into alternative freight networks. The feasibility of integrated networks will depend on context whilst it will be crucial that consolidation centres can be tailored around business supply chains.

17



18



19



OUTLOOK FOR THE TFSE AREA

- 3.6.4. Consolidation is likely to be pursued by both the public and private sector in the short to medium term in response to the continued drive towards freight efficiency and the boom in B2C and 3PL parcels deliveries (concurrently with e-commerce and online retailing). However, the motivation for consolidation will differ; with private operators seeking to reduce costs and the public sector looking to reduce freight externalities from HGV movements in urban conurbations.
- 3.6.5. There are examples of industry leaders in consolidation across the TfSE area with an established site in Southampton managed by Meachers Logistics in partnership with Southampton City Council. This serves a number of anchor institutions, such as the university and public authorities and is part of a package of measures to reduce GHG emissions. Improve the quality of life in the city and achieve carbon neutrality by 2030 (all under the banner of 'Our Greener City Commitments'). There are also well established consolidation centres located at international gateways, namely Tilbury Port (construction sector) and Heathrow. The latter, built by Prologis in 2006, applies the same methodology within a closed environment by minimising delivery traffic to and from airport shops
- 3.6.6. The impacts across the TfSE area are likely to be centred around larger conurbations or urban areas (urban logistics), where a number of potential 'triggers' are present, including, but not limited to:
- Access restrictions imposed in and around historic centres, to protect the urban realm and supporting placemaking (e.g. Canterbury)
 - New or emerging regulatory environments are coming into play, namely Clean Air Zones (e.g. Portsmouth & Southampton)
 - Established projects and programmes already centred around sustainable urban freight movements (e.g. Brighton, West Berkshire)
- 3.6.7. There are a number of trend attributes that have been highlighted below:

¹⁷ Travelwest (2021) Freight Consolidation, <https://travelwest.info/projects/freight-consolidation>

¹⁸ Cross River Partnership & Steer (2020) The Potential for Urban Logistics Hubs in Central London, https://crossriverpartnership.org/wp-content/uploads/2021/01/Central-London-Hubs_Final-report.pdf

¹⁹ Cross River Partnership & Steer (2020) The Potential for Urban Logistics Hubs in Central London, https://crossriverpartnership.org/wp-content/uploads/2021/01/Central-London-Hubs_Final-report.pdf



Demand will likely increase for affordable premises across urban areas (e.g. Brighton, Solent, Medway Towns) to host remote and micro consolidation centres; with a need to aid industry with sourcing and designing suitable space



Consolidation works best when high volumes are experienced. London is a huge market for goods, so consolidation can be financially viable whilst having the added benefit of reducing HGV movements through the capital (with clear road safety benefits)



Operators can avoid being subject to congestion, fees and delays entering urban areas and maximise journey scheduling by redistributing time to other tasks



Consolidation could be applied to other commodities. Consolidation of multiple shipments before accessing ports across the TfSE area may help reduce backlogs around major access points and reduce overall HGV volumes

3.6.8. There are a number of challenges presented consolidation including, but not limited to the following:

- The reluctance for the freight industry and operators to share data. Commercial sensitivity has long been a barrier to shared access facilities alongside difficulties with holding down roles and responsibilities for financing schemes and operational procedures on site.
- The availability of suitable sites for consolidation, especially due to competing demands for space, including housing, warehousing and industrial uses. This may result in sourcing temporary sites and utilising 'meanwhile' spaces on a trial basis initially.
- Consolidation needs to be part of a package of measures. Voluntary schemes without sufficient 'sticks' and regulations to change supply chain behaviours will ultimately come to fail – with loss to the tax payer through the outlay of public subsidy.

3.7 SUPPLY CHAIN VISIBILITY

3.7.1. Supply chain visibility is the ability to track individual components and final products as they travel from supplier to manufacturer to consumer. It provides near-real-time data about logistics and supply chain operations to help companies avoid inventory shortages and bottlenecks. Most recently its adoption has been driven by recent supply chain disruptions resulting from the COVID-19 pandemic, alongside the emergence of new technological platforms designed to aid with more responsive decision making. This pivots around the availability and access to real time data across different stages of handling, processing and transporting goods and enables real time collaboration with industry partners, to react to risks and changing consumer demands/markets.

3.7.2. Supply chain visibility is part of a wider focus on intelligent workflows, which can facilitate horizontal integration and adjustments to inventory and the integration of robotics, Internet of Things (IoT) and automation; with the ultimate aim of developing resilient and agile supply chains. Some of the key characteristics of this trend include:

1. Constant reassessment of individual processes, product inventories and freight transport demand throughout the supply chain journey, transparent to all involved
2. Consumers are increasingly conscious of being informed on shipping status and the transparency of supply chains to schedule their daily activities
3. Responding to recent disruptions in global shipping and the challenges with delivering 'Just in Time' consignments
4. Ability to constantly monitor, collect and collate performance in real time (high data quality) to enable systematic adjustments

IMPACTS

- 3.7.3. The drive towards 'end to end' supply chain visibility is responding to global disruptions to how and when goods are delivered, as well as the types of commodities being moved. The trend is particularly pertinent for global and long-distance transshipments of goods, with multiple supply chain stages, carriers and intermediary points across the freight network.
- 3.7.4. The impacts include the following:
1. The primary impact is on reducing transport costs, often the most expensive part of the supply chain, and on inventory costs for storing items for prolonged periods. This ultimately boosts profit margins.
 2. Businesses can gain a competitive advantage by tailoring user experience around customer expectations and fluctuations in market demands.
 3. Increased transparency and communication can allow consignments to be re-routed or re-timed to coincide with the most efficient freight pathways, to mitigate cost implications.
 4. Data collection can aid with future forecasting and performance management, to maximise supply chain efficiency. This could lead to shifts in more sustainable procurement practices.



OUTLOOK IN THE TFSE AREA

- 3.7.5. Initiatives to improve supply chain efficiency can be particularly beneficial and accessible to larger multinational organisations with the capital resource to invest in platforms and globalised supply chains; the latter being particularly susceptible to disruptions.
- 3.7.6. Supply chain visibility is particularly relevant where goods are being handled by multiple intermediaries flowing through international gateways across the UK and the South East of England. With goods moved through ports and airports predicted to increase, the efficiency of goods movements is key to preventing backlogs and avoiding delays and congestion on key access routes and corridors, including portside, where capacity is constrained.
- 3.7.7. Although there is limited ability to accurately predict consumer behaviour and patterns post pandemic, supply chain visibility will offer companies, the chance to gain a competitive advantage by accessing live real time data in response to sector disruptions (e.g. driver shortage, port congestion, inventory delays).
- 3.7.8. The adoption of Artificial Intelligence (AI) is a growing trend but is largely reserved for shippers/carriers for forecasting demand and offering flexible/diverse price offerings and automating manual booking processes (as part of a wider digitisation of port-based systems) to improve freight planning and integration. This is currently reserved for larger shippers/carriers using deep-sea ports (Southampton/Portsmouth/London Gateway). There are a number of trend attributes that have been highlighted below:

²⁰ The Guardian (2021) Over 5m people in UK had parcels lost or stolen last year, says Citizens Advice, <https://www.theguardian.com/business/2021/jul/30/over-5m-people-in-uk-had-parcels-lost-or-stolen-last-year-says-citizens-advice>

²¹ Purolator (2014) Supply Chain Visibility Is Key to Improved Efficiency and Reduced Costs, <https://www.purolatorinternational.com/content/uploads/whitepapers/Supply%20Chain%20Visibility.pdf>

²² Mixmove (2020) How implementing supply chain visibility will reduce your costs, <https://www.mixmove.io/blog/how-implementing-supply-chain-visibility-will-reduce-your-costs>



Optimisation of spare fulfilment centre and warehousing space, in short supply across the south east, to reduce inventory and handling costs and to open new opportunities for shared storage.



The automotive sector, which relies on JIT deliveries, is a key sector served by TfSE ports (Southampton & Medway Ports) and road/rail corridors; with better transparency helping retain market position.



Many business clusters taking advantage of port and airport-based trade flows can potentially gain a competitive advantage by reacting to supply chain deficiencies, compared to other UK regions.



Enables freight forwarders and multinational companies based in the South East to respond to changes in global shipping movements or delays port-side or at customs processing areas.

3.7.9. There are a number of challenges presented by improving supply chain visibility including, but not limited to the following:

- Commercial confidentiality and longstanding concerns by industry to share data insights and sensitive operational information due to the fear of losing competitive advantages.
- The consequences of relying on technological solutions as the 'silver bullet' to improving operational efficiencies without addressing other supply chain factors as part of a 'package'.

3.7.10. However, the consequences of not providing greater supply chain visibility far out way the challenges presented by its implementation. Whilst consumers now demand greater traceability of products on an end to end journey over shorter lead times, disruptions to global supply chains require a proactive and responsive approach to freight movements to avoid delays and retain market share/position.

3.8 DECARBONISATION

3.8.1. The recently published Transport Decarbonisation Plan sets out the Government's approach to the decarbonisation of the transport sector in order to achieve its mandated target of achieving net zero carbon emissions by 2050. This is manifesting in many different ways; with the arrival of new technology, combined with regulations and legislation to reduce and restrict the most polluting vehicles; helping to stimulate a step change across the industry.

3.8.2. More specifically, the plan refers to decarbonising freight across different modes, such as:

- Incentivising the adoption of low carbon traction by rail Freight Operating Companies (FOCs) who will use more electric and low carbon traction. The ambition is to remove all diesel locomotives on the network by 2040. Investment in extra capacity on the rail network will also support modal shift to rail to reduce overall HGV emissions (particularly for strategic trips).

- Supporting the maritime sector to reach its ambitions for carbon neutrality by 2050. This covers both vessels, energy generation and portside infrastructure (e.g. handling equipment).
- The use of low carbon fuels in aviation (including development through waste feedstocks) with steps being pursued as part of the Jet Zero strategy for net zero emissions from aircraft by 2050. UK domestic aviation is to reach this figure earlier – by 2040 alongside airport operations.
- The Road Freight sector, which will see the end of new diesel and petrol lorries by 2040; the sale of ICE lorries weighing between 3.5 tonnes and 26 tonnes by 2035 and the sales of ICE cars (and vans) by 2030. The roadmap towards the uptake of alternative fuels is less clear with many trials and strategies currently in the pipeline.

- 3.8.3. The transition towards carbon neutrality and the adoption of new, alternative fuel technologies, presents a real challenge across all transport modes. There are obvious financial implications of adapting or re-fleeting vehicles, locomotives, vessels and aircraft short term, especially without financial support (particularly the road freight sector and smaller haulage) and complementary fuelling infrastructure being delivered at scale.
- 3.8.4. Many alternative fuel technologies are still under development and have yet to reach maturity to be rolled out commercially, such as hydrogen for HGV use – therefore risking a fragmented approach to uptake and future scalability. For the road freight industry, which operates fine profit margins, there is a cultural and behaviour change requirement to make the transition, especially if costs are prohibitive and there are few, immediate operational gains.
- 3.8.5. To avoid a ‘chicken and egg’ scenario unfolding, the development and delivery of alternative fuels and decarbonisation must be driven by government and industry to scale up adoption as opposed to be left to market demand. Alongside costs, the perceived reliability of charging infrastructure, the range of vehicle and drop in fuel options available on the market (as examples) and the absence of regulatory conditions to trigger interest, all need to be addressed.
- 3.8.6. The freight dimension of decarbonisation has focused on the use of alternative fuels, new vehicle technology, the electrification of vehicles, handling equipment and energy networks – gradually being scaled up across the freight industry. The key elements are as follows:
1. Shifting LGV fleets away from ICE, towards Battery Electric Vehicles (BEV) for urban logistics movements
 2. Reducing HGV emissions which contribute 16% of domestic transport emissions²³; a disproportionate level, relative to vehicle miles through a ‘fuel mix’ including ‘drop in’ biofuels, hydrogen and battery electric vehicles
 3. Mode shift and exploring sustainable, zero emission deliveries and options such as rail freight, to reduce road freight dependency

²³ DfT (2021) Transport and Environment Statistics 2021 Annual report, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/984685/transport-and-environment-statistics-2021.pdf

4. Transition in the development of energy networks and reliance on fossil fuels for powering on-site facilities and wider initiatives to decarbonise other aspects of the organisations carbon footprint (e.g. handling equipment at ports and surface transport at airports)
5. Incentives being packaged by public authorities to help support the transition towards cleaner fuels

IMPACTS

- 3.8.7. The decarbonisation agenda, which is manifesting through changes to regulations and legislation (e.g. Clean Air Zones and banning the sale of new ICE HGVs), promotion of alternative fuel technologies (e.g. electric propulsion), and wider social/consumer habits (e.g. eco-labelling) and economic development (e.g. Eco ports), is being driven by public authorities (and, increasingly, by industry) with different sectors within the freight industry proactively exploring options.
- 3.8.8. The road freight sector, notably smaller haulage companies, are particularly vulnerable to the speed and scale of decarbonisation. Operational changes, enforced through new regulations on engine standards through to the adoption of Clean Air Zones (CAZs) and access restrictions (as part of the placemaking agenda), will have direct financial consequences. However, the lack of mature alternative technologies coming through for replacing ICE traction for HGVs also make future planning (investment) particularly challenging due to the risk that this would entail.
- 3.8.9. The impacts of the drive to decarbonise the freight sector include the following:
 1. Increased demand for Electric Vehicle (EV) infrastructure, specifically rapid charging, to expand supply and match forecast growth in LGV volumes – to deliver zero emission trips
 2. Exploring the role of Hydrogen and Biomethane as alternative fuels for HGVs; and developing the appropriate infrastructure along the SRN, to stimulate market demand
 3. Greater interest in rail network capacity, road/rail freight interchange and future network electrification, to reduce GHG emissions and stimulate zero emission last mile logistics
 4. Reduction in coal (and other fossil fuels i.e. oil) as a bulky commodity for energy generation (and other uses) across supply chain/freight generators premises and property and increased move and investment in site power generation (e.g. wind turbines, photo-voltaics)
 5. Supporting a phased transition that reflects the challenges presented to smaller road freight operators; especially due to the direct financial consequences from fuel duty rises and the need to meet new emissions standards.



OUTLOOK IN THE TFSE AREA

- 3.8.10. The decarbonisation agenda will stimulate and accelerate a number of changes across the TfSE area. The most obvious will be the drive towards zero emission road freight transport and the shift towards alternative modes (e.g. road to rail). All public authorities have outlined the need to reduce GHG emissions and move towards carbon neutrality going forward, whilst industry, particularly larger companies (ports, FOCs, TOCs) etc, have committed to reducing emissions, by shifting to zero emission fuels and developing the associated infrastructure provision.
- 3.8.11. On this basis, there is great optimism about the opportunities the transition brings; taking into account the proposals for Freeports too, which highlight the potential for a green recovery and green business clusters (for example, Solent). Operators have invested in telematics, to be able to monitor fuel efficiency, tyre management and undertake eco-driving; all of which will help lower operational overheads. There are a number of trend attributes that have been highlighted below:



Impetus behind mode shift potential; transferring shipment of bulk commodities from road to rail, along parallel routes (e.g. A34/Cross County rail link) and rail services from new port links (Medway).

²⁴ Shell (2020) Decarbonising Road Freight: GETTING INTO GEAR Industry Perspectives, https://www.shell.com/energy-and-innovation/the-energy-future/decarbonising-road-freight/_jcr_content/par/toptasks.stream/1617804891378/3efb462f0ef05d4273d2eda5339d510c91ee1cde/decarbonising-road-freight-industry-report.pdf

²⁵ Rail Freight (2021) Modal shift now, rail freight industry tells UK government, <https://www.railfreight.com/policy/2021/07/08/modal-shift-now-rail-freight-industry-tells-uk-government/>

²⁶ Ricardo (2019) Zero Emission HGV Infrastructure Requirements, <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Zero-Emission-HGV-Infrastructure-Requirements-Ricardo-Energy-Environment.pdf>



Re-evaluating sustainable energy networks at ports and airports, to save fuelling costs (shoreside power supply and Liquid Natural Gas) and developing renewable energy to sustainably and cost effectively fuel on-site facilities and handling equipment.



Transition towards zero emission vehicles for last mile urban logistics across urban conurbations (and continuing to build on schemes in Brighton, Southampton, Reading etc).



Pursuing the electrification of rail (core & diversionary routes) and upgrade of locomotive fleets, alongside use of alternative fuels for aircraft (CNG/LNG) and surface access transport as part of the agenda.

3.8.12. There are a number of challenges associated with the trend towards decarbonisation and the wide spread adoption of alternative fuels and mode shift across the TfSE area. These include:

- The requirement for central government (DfT) to provide substantial funding to invest in charging infrastructure at and above the pace of vehicle adoption for LGV freight transport across urban areas. Delivery partners will also need to be confirmed with interoperability being key moving forward to reduce the risk of developing a fragmented network of provision.
- The lack of market maturity across developing fuels and technologies which create risk for operators and organisations planning to make the transition. This uncertainty can subsequently lead to delays or a reluctance to decarbonise short term (which fuels the ‘chicken and egg’ scenario where the market for fuels and technologies fails to materialise at pace). Trials in Southampton (e.g. hydrogen hub) and the Electric Road System (ERS) can help develop proof of concept before rolling out regionally.
- The risk of the decarbonisation agenda being tailored purely around the use of alternative fuels and vehicle technologies relative to shifting the dependency away from road freight and the wider array of externalities that must be addressed (e.g. congestion). This is true of the broader focus on freight supply side relative to freight demand management issues – for example, the role of more efficiency building standards and staff travel planning measures at the Port of Shoreham).
- The risk of leaving the development of hydrogen and biofuels to the market and expecting that decarbonisation will take place at speed and be widely accepted without government intervention. Industry and government must come together at a national and regional level to deliver infrastructure and future opportunities to reach carbon neutrality targets. Whilst there are examples, such as DB Cargo’s use of biofuels, these are only in trial periods.

3.9 WORKFORCE UPSKILLING

- 3.9.1. Workforce professionalisation is the upskilling of current and prospective employees to attain better operational and performance standards expected of a company and the freight and logistics industry. Professionalisation, in this instance, also implies addressing job shortages and responding to the use of new technologies as well as confronting social, economic and environmental challenges faced by the industry.
- 3.9.2. The greatest proportion of employment opportunities across the freight and logistics sector are low to middle skilled (41.7%), followed by low skilled (26.6%) compared to 9.2% and 31.4% respectively for all jobs in the UK economy²⁷. The job market trends towards higher skilled professions in freight and logistics roles, suggesting increasing professionalisation of the sector and the future automation of jobs. There was a 103% increase in the number of Purchase Managers and Directors employed between 2009-2019 and a 20% increase in transport/distribution managers, compared to the increase in forklift trucks drivers (21.4%) and elementary storage occupations (22.4%) over the same period.
- 3.9.3. Automation may have a significant impact on how/whether humans operate vehicles in the medium and longer terms, but people will still play a key role in the planning, management, operation, maintenance and improvement of logistics networks. Whilst more aspects of port and warehouse operations have already transitioned towards automated processes and applied the use of sophisticated automated software management systems, the shape and size of the freight and logistics employment, across the sector may evolve to confront current challenges (such as the HGV driver shortage). New workforces will be encouraged to develop and learn skills to adapt to new ways of working but also to help raised standards across the industry more broadly.
- 3.9.4. The road haulage sector has a particular challenge in changing public perceptions and confronting negative stereotypes associated with the HGV driver profession. Driver recruitment and retention has received lots of publicity in recent years with industry helping to raise awareness of the skill involved in delivering essential services across the UK by road. Drivers have been indispensable during the pandemic to maintaining business as usual and are seeking individual recognition for their efforts and experience alongside the opportunity to utilise emerging in cab technologies to boost operational efficiency and as part of their overall learning and development.
- 3.9.5. However, accreditation programmes, such as the Fleet Operator Recognition Scheme (FORS) and Considerate Constructors Scheme (CCS) are professionalising company operations and raising best practice standards. These are now widely acknowledged and increasingly viewed as a prerequisite for the successful tendering of a contract by public authorities and larger multinational companies because of the association with delivering a better quality of service.
- 3.9.6. Some of the key characteristics of this trend include:
 - Growing company affiliation with trade associations and delivery of best practice/compliance with standards, including increase in registrations to CLOCs/FORS schemes (as examples).

²⁷ Logistics UK (2021) Skills and Employment Report 2020,
<https://logistics.org.uk/CMSPages/GetFile.aspx?guid=86764e99-6b36-4517-a93d-f567ebfa0ada&lang=en-GB>

- The increased availability, popularity and uptake of formal qualifications and apprenticeships and across the freight and logistics industry.
- Potential implications on company cost and overheads alongside the added value that can be offered through staff upskilling.
- The development of skilled, well paid and secure employment opportunities concurrently with a reduction in temporary, zero-hour job prospects.
- Increased commitment by businesses and industry to provide training, learning and development opportunities to improve operational performance.

IMPACT

3.9.7. The impact of having a well-qualified workforce has, to public knowledge, not been quantified for the freight and logistics industry, however the financial implications of the skill shortage has been observed. Overall, 64% of businesses across the freight and logistics sector in the UK are experiencing a skills shortage which is costing £4.4 billion²⁸. In total, more than three-quarters (79%) of businesses expect to increase the number of higher-skilled roles over the coming years.

3.9.8. However, the suggested impacts of a more highly skilled workforce working across the industry are likely to bring the following benefits:

- Raising industry standards and sector reputation (particularly road haulage) regionally and across particular specialisms to confront social, economic and environmental challenges.
- Changing the perceptions of the industry to support job recruitment and retention and the development of highly skilled, highly valued job opportunities.
- Reduced human error and increased wage growth as symptoms of a broader increase in roles and responsibilities – with benefits to worker morale.
- Improved operational efficiency and performance outputs delivered across the back office and frontline activities – where this offers repeat custom and enhanced reputation.
- Greater opportunities for the private sector and industry to source lucrative work and win contracts to retain and grow business activity.

²⁸ FTA (2019) FTA Logistics Skills Report, <https://logistics.org.uk/CMSPages/GetFile.aspx?guid=8afc692b-a971-4357-be45-40281ab02c30&lang=en-GB>



OUTLOOK IN THE TFSE AREA

- 3.9.9. There is a real opportunity to build on the presence and prominence of established educational institutions across the TfSE area to help unlock the potential of the freight and logistics industry as a major economic driver for the region. Solent and Southampton Universities, for example offer a range of courses within the sector whilst mediating contact between students and businesses within the area to offer direct placement, internship and graduate opportunities. Burgeoning business and technology clusters, such as those located and aspired too at Shoreham and Sheerness/Ramsgate respectively (the latter concerning offshore windfarms), are fostering skills and experience for the next generation of job opportunities in 'live' environments.
- 3.9.10. The development of a dedicated Solent Freeport Green Growth Institute (SFGGI) will provide a centre of excellence in green skills and jobs to ensure local communities can benefit from the opportunities created through environmental innovation. This is a key component and narrative espoused through the levelling up agenda to help tackle deprivation and support continued economic prosperity. The drive towards decarbonising the maritime sector more broadly is also driving the need for skilled roles (including engineering and shipbuilding) to help re-fleet and retrofit vessels to reduce emissions. The South East LEP also provides the foundations for supporting skills development through the Transport and Logistics Skills Hub which includes offering services for NEET (Not in Education, Employment or Training) and unemployed learners.
- 3.9.11. The many trade associations and institutions representing the freight industry across the UK have a strong regional voice and can help scale up the uptake of courses and programmes working with industry and educational institutions. This includes the Chartered Institute for Logistics and Transport (CILT) which has developed a number of recognised modules across various specialisms from inventory management through to supply chain management and fleet operational reviews. The likes of Logistics UK are also advocating the apprenticeship levy and its transition to a 'skills levy' to allow greater flexibility in its application.
- 3.9.12. There are a number of trend attributes that have been highlighted below:

29

30 FTA (2019)

31 FTA (2019)



Increasing wage demands resulting from gaining qualifications and accreditations, especially across sectors where labour demand exceeds labour supply. This can have repercussions on company overheads (working off fine operational margins).



Increased move towards the automation of medial, repetitive tasks and the subsequent demand for analytical skills within more managerial and coordination roles (which may be less location specific than pre-pandemic times).



Software developers, managing directors and sales and marketing professionals are key emerging jobs in addition to analytical skills, socio-emotional skills such as creativity, originality and initiative, social influence, and emotional intelligence.



Challenges for the sector to fill the jobs vacated by European workers who have left after Brexit, especially if these are viewed as low wage, low skill roles with limited educational attainment/qualifications required.

3.9.13. There are a number of issues relating to workforce professionalism including, but not limited to the following:

- The demand for high wage, high skilled labour force and job opportunities across the freight and logistics sector which is an inherently good aspiration. However, this must be matched with managing consumer expectations and the need to pay more for some goods and services.
- The funding available to support and establish courses and programmes for upskilling workers within existing roles across industry and the potential disparity between the time allocated for learning, development and training across SMEs and multinationals.

4 FUTURE FREIGHT SCENARIOS

4.1 INTRODUCTION

FUTURE FREIGHT SCENARIOS

- 4.1.1. A scenario is a description of possible events and actions in the future. These are closely informed by current and emerging trends. It is important to think through possible future scenarios to help plan and respond to the development of current and emerging freight trends – especially those set out in section 2.
- 4.1.2. The scenarios identified and described in this section attempt to convey a set of potential future realities or scenarios and the impacts that they would have on freight and logistics activity. The scenarios were selected on the basis of events and activities manifesting across the globe (mainly mainland Europe and the UK) and across the freight and logistics industry more broadly.
- 4.1.3. The aim of creating scenarios and to provide a high level overview of their likely impacts, is to inform the priorities of the emerging freight transport strategy and to frontload awareness of the data requirements for responding to the shift in which goods are consumed, processed and moved to aid future planning.
- 4.1.4. The scenarios are as follows:
 - Continued E-Commerce Boom
 - Responding to COVID-19
 - Urban Densification
 - Changes to Global Shipping
 - Mode Shift Road to Rail
 - Localised Supply Chains
 - Changing Consumer Behaviour
 - Evolving Digital Communications
 - Van Growth
 - Business as Usual (BAU)
 - Sustainable Route to Growth (SR2G)
- 4.1.5. A set of impacts accompany a description of each scenario to convey more specifically how the scenario manifests itself across the sector and the TfSE region. This is then followed by a high-level assessment of the freight data requirements that would be needed and recommended to aid future freight management and strategy formation. These have been documented as follows:

- ✓ Freight related data that should be readily accessible in the public domain or captured in the freight data catalogue. This is the '**core data**' that should form a key part of analysing and assessing trends and understanding each scenario. e.g. journey reliability (traffic delay) should be easily gleaned from Highways England data or information held by highway authorities to be able to understand the most congested parts of the SRN/MRN.

- Freight related data that would be required/ highly recommended that is likely to require additional research/further investigation. This is the additional '**complementary data**' which could be explored on a case by cases basis or where the data is readily accessible and meaningful. e.g. capturing container dwell times in the short term, amidst the disruptions to global shipping, could help gauge the extent of the issue at TfSE ports – with a view to informing an intervention.

4.1.6. A number of Key Performance Indicators (KPIs) have also been applied, where possible, to help with framing the desired outcomes and assessing the impact of different scenarios. These have been bulleted under each scenario and can be used as the measure for assessing the aforementioned impacts of the scenario.

4.1.7. Each of the scenarios in section 4.2 are structured as follows:

- Description
- Impact
- Freight Data Requirements
- KPIs

4.2 CONTINUED E-COMMERCE BOOM

DESCRIPTION

- 4.2.1. What does this scenario look like? Post pandemic, the growth and popularity of e-commerce and online retailing shows little sign of slowing, with the continued decline of the role of the high street and traditional 'bricks & mortar' shops. The popularity of home deliveries and the convenience this offers for customers, including the option of returning goods (reverse logistics), is the new normal with high street having been tailored to a more experiential economy. The rise in B2C and C2B are here to stay.

IMPACTS

- The continued growth of registered LGVs has put subsequent pressure on the road network to cater for additional traffic volumes in the absence of demand management measures.
- Consumer expectations continue to rise due to the 'Amazon Effect'; where delivery lead times are so short, same day or same hour, to fulfil orders.
- The gig economy and low wage labour continues to prevail to deliver goods on a demand responsive basis, with still no promise of longer term, skilled and secure job prospects.
- There is real pressure on sourcing suitable land for fulfilment and distribution centres; with further pressure on land costs and issues around land affordability for logistics.
- The role of many high streets has changed, traditional retail has been replaced by new businesses and land uses which has altered freight patterns and demands.

FREIGHT DATA REQUIREMENTS

- 4.2.2. What does this scenario mean for the collection of high-quality freight data and the resources that are required?

- ✓ LGV traffic flow data (sensors) across urban conurbations to illustrate volume growth.
 - ✓ Registrations of electric LGVs based across each urban conurbation.
 - ✓ Collation of data on land designated for B8 facilities within local planning documents/policy.
 - ✓ Amount of designated of B8 warehousing space to be developed quarterly/annually (and type of company).
- Studies of land availability and business class use across urban areas (via local authorities).
 - Data illustrating vacancy rates via public authorities and BIDs (for meanwhile spaces).
 - Local employment figures for growth in logistics & freight-based industry professions.
 - Industry data illustrating drop frequency, vehicle load capacity and delivery type.
 - Continued research into consumer habits through national surveys/3PL partners.

KPIS

1. Forecast increase in B8 class warehousing / fulfilment /distribution facilities designated or under construction, across the TfSE area and individual 'centres' (namely Medway Towns/West Berkshire/Maidstone/Solent cities)
2. Change in e-commerce spend (and periodic review every five years)

3. The % change in shop vacancy rates and % split of land use class (and change over five year period) across each conurbation.
4. The % change self employed and 'zero hours' labour within freight and logistics sector (locally & regionally)

4.3 RESPONSE TO COVID-19

DESCRIPTION

- 4.3.1. What does this scenario look like? The fallout from COVID-19 highlighted the role of freight as a key public service and has accelerated the digitisation of supply chains, reinforced consumer behaviour for the 'hyper local' and has led to the scaling up of the on-demand economy. Businesses have developed e-commerce channels and diversified their range of goods; increasingly delivered over the 'only mile'. 3PLs have reduced their number of 'failed delivery attempts', as working from home is now commonplace. At a macro scale, businesses continue to stockpile goods to avoid supply chain disruption, whilst backlogs of shipping and empty containers at ports continue to need to be cleared. There is an underutilisation of loads and added congestion on the road networks, as 'normal service' resumes on top of increased logistics traffic.

IMPACTS

- Trend towards shopping locally and the hyperlocal form of freight movements on e-cargo bikes/foot porterage (only mile).
- Demand for warehousing for storage and stockpiling goods close to ports/airports (especially freeport locations).
- Journey time reliability of road freight trips continues to be improved, in comparison to pre-pandemic levels,
- Mode shift (deep sea shipping to air) takes place to help deliver JIT consignments on behalf of manufacturing firms and industrial sectors.

FREIGHT DATA REQUIREMENTS

- 4.3.2. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ National statistics on overall journey times, freight flows (all) and emissions.
- ✓ Air Quality Management Area (AQMA) data for locations at Dover, Southampton, Portsmouth.
- ✓ Air Quality Management Area (AQMA) data for locations along the SRN and local roads
- ✓ Average traffic road speeds on the SRN across the TfSE area and congestion hotspot maps.
- Proportion of failed deliveries captured through 3PL industry partners.
- Number of businesses procuring or that have developed 'only mile' local to local services.
- Proportion of empty running (%) taking place across TfSE area (linked to gateways).
- Fleet operator surveys and retail customer snapshots to capture longer term trends.
- Comparative data on inventory/warehousing levels pre-, mid- and post-pandemic.
- Mode shift (from road) to other modes for key industry sectors or major manufacturing firms.

KPIS

1. Stockpiling levels captured through turnover rates at warehousing facilities.
2. Air pollution and particulate matter levels at AQMA locations.
3. Levels of empty running (% of total vehicle and across the industry/sub national area)
4. Levels of use by businesses of e-cargo bikes/foot portorage (non-motorised transport) for 'only mile' services.
5. Increased journey time reliability (speed capture) along the SRN, across the TfSE area.

4.4 URBAN DENSIFICATION

DESCRIPTION

- 4.4.1. What does this scenario look like? Future housing and commercial developments centred in sustainable urban areas, benefit from enhanced access to services, amenities and public transport; but population densification, and more specifically each new resident or business, creating additional freight movements (deliveries, collections and waste management) in sensitive urban areas. Higher density developments, combined with imposed access restrictions and the formalisation of active travel measures developed during COVID-19 add to competing use for road space; whilst attitudes have shifted positively towards greater provision of car free development and better quality public places.

IMPACTS

- Densification is required in larger cities across the TfSE area, due to high land values and continuing high demand for new housing; requiring Delivery & Servicing Plans to be in place.
- Waste management services, routing and procurement are organised to save business costs, through economies of scale.
- Changes in freight routing (both direct site traffic and local traffic movements during construction periods (new developments).
- Interest or exploration of different 'on site' facilities; ranging from concierge services, to micro consolidation, to subterranean depots.
- Increased population in urban centres requiring greater peri-urban fulfilment, warehousing and distribution of essential commodities.

FREIGHT DATA REQUIREMENTS

- 4.4.2. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ New development densities captured through local plan designation and planning proposals.
- ✓ Number of planning conditions with Delivery & Servicing Plan requirements applied
- ✓ HGV/LGVs and freight mode split for servicing new developments
- ✓ Urban road safety statistics/accident collision data (around development sites)
- ✓ Data on LGV/HGV freight movements during peak and off-peak periods.
- Observational analysis of waste management practices across major urban developments
- Business surveys on prospective mode shift for deliveries and waste management
- Growth in warehousing, fulfilment and distribution (B8) land enquiries/designation

- Interview/survey feedback/engagement with major developers about their proposals.
- Assessment of commodities moved (community groupings for each urban area)

KPIS

1. Number of local authorities which have a live DSP (& Construction Logistics Plan) policy in place (& % of applications where these have been requested).
2. The number of local authorities that apply DSP/CLPs as a condition of a planning permission (capturing the number of applications and as a % of all applications).
3. Changes (rationalisation) in the number of freight trips (LGVs/HGVs) penetrating city centre areas (including vehicle trips/CO2 emissions) Changes in in road casualties and stabilisation of LGV levels against an increase in urban population (through load optimisation).

4.5 CHANGES TO GLOBAL SHIPPING

DESCRIPTION

- 4.5.1. What does this scenario look like? The prospect of changes/disruptions to international trade flows and pan-national tensions/disputes have fostered a change in the role of global shipping, which has had implications for major ports across the TfSE area. Port congestion has become a challenge as space is constrained for inland storage (and added customs processing in response to leaving the European Union), with a simultaneous increase taking place in freight rates.
- 4.5.2. This scenario has been impacted by the fluctuations in market demand across nations (consumption)n which has been referred to as 'twin-speed recovery' between places such as China and the West. There are varying levels of digitisation and technological offers by ports to manage demand and build in flexibility for serving the haulage industry. The recent traffic saturation events at the Port of Felixstowe have acted as a cautionary tale.

IMPACTS

- This scenario will come to shape freight routes and the popularity of UK ports - namely those that continue to operate under optimal operational conditions.
- Certain manufacturing sectors reliant on JIT and lean production may switch modes towards air cargo or localised suppliers (automobile sector e.g. BMW Group).
- Challenge in the prolonged dwell time containers creating a vicious circle of disruptions and heightened freight rates; the recent case in Felixstowe helping boost opportunities at other competing ports.
- Pressures on developing robust terminal operating systems, vehicle booking systems and port best practices, to optimise space (as developed through the Dover Traffic Assessment Project (TAP).

FREIGHT DATA REQUIREMENTS

- 4.5.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ Future international (and domestic) trade and shipping flow forecasts per port (UK/TfSE area)
- ✓ Changes in commodities shipped (by tonne) per port pre-, during and post- pandemic
- ✓ Current and future forecast for shipping and carrier pathways
- ✓ Longitudinal data on freight rates per port, against container availability

- Average container dwell time (across container sizes) on site per TfSE port (compared to pre pandemic levels))
- Average waiting times (and range) for Ro-Ro traffic and Lo-Lo traffic
- Qualitative feedback through industry surveys on mode shift, away from shipping

KPIS

1. Numbers of foreign registered trucks and UK registered hauliers passing through the Dover Strait v baseline figures pre-Brexit³²
2. Changes in tonnages moved through TfSE ports, relative to other UK ports
3. Changes in container dwell times port-side to pre-COVID-19 levels
4. Changes in waiting times for Ro-Ro traffic entering TfSE ports, against baseline average

4.6 MODE SHIFT ROAD TO RAIL

DESCRIPTION

- 4.6.1. What does this scenario look like? The popularity of rail freight, for construction and intermodal traffic, increases, as it becomes a cost effective and low carbon means of transporting freight. This is focused on shifting bulky commodities (mostly over long distances) between international gateways and major economic hubs (towns and cities) and delivering express inter-urban or urban mail/parcel consignments, when coordinated with first/last mile zero emission delivery. The recent Williams/Shapps Plan³³ for rail positively endorses this transition.
- 4.6.2. The rail industry has looked towards freight to fill the revenue void left by a reduction in rail commuting and spare network capacity. The commodities moved by rail has shifted away from coal (as an example) towards serving the burgeoning construction industry, solidifying its status serving the automobile sector and opening up to new markets, such as parcel freight; all with different loading, handling and storage /transhipment requirements.

IMPACTS

- Increased demand placed on Strategic Rail Freight Terminals (SRFT) to shift goods (with limited stem mileage between origin/destination).
- Core rail freight corridors (and modal points) become well utilised for freight and passenger traffic, carrying core commodities serving the automobile/construction/retail industry.
- Increased pressure for rail electrification and gauge clearance improvements along core and diversionary routes, to unlock environmental and efficiency gains.

³² DfT (2021) Enforcing Operation Brock in 2021: government response to consultation on proposed legislative amendments, Table 1, <https://www.gov.uk/government/consultations/enforcing-operation-brock-plans-in-2021/outcome/enforcing-operation-brock-in-2021-government-response-to-consultation-on-proposed-legislative-amendments>

³³ DfT (2021) Great British Railways, The Williams Shapps Plan for Rail, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/994603/gbr-williams-shapps-plan-for-rail.pdf

- Utilisation of spare rolling stock capacity and retrofits, to accommodate additional 'light freight' goods such as parcel demand (off peak, in the main) for inter urban trips.
- Increased demand for enhanced terminal capacity, more freight paths, reduced/more reliable journey times and extended/greater government financial support for measures towards modal shift.

FREIGHT DATA REQUIREMENTS

4.6.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ Tonnes per km transported by rail to road (and mode shift taking place per commodity)
 - ✓ Rail network utilisation rates (during peak and off-peak periods and rail freight train lengths)
 - ✓ The additional number of rail freight (parcels & bulk loads) services added to timetabling
 - ✓ Network Rail/DfT route corridor utilisation rates (passenger/freight/commodity split)
 - ✓ Success rate for bringing forward SRFI/rail terminals (through planning)
 - ✓ Rail freight contribution (GVA) to local economies, by region/sub national level
- Official recording of mail and parcel freight movements/tonnage by train (and how much utilisation is made of ex-passenger stock to move that traffic).
 - Recording shift in levels and distances of 'rail heading' by FOCs for longer distance rail consignments by road, as a measure of relative convenience of suitable rail facilities
 - Qualitative industry-based feedback on road-rail mode shift and barriers to transition including challenges with securing long term market demand for terminal sites and appetite for first & last mile haulage distribution and servicing hub locations
 - Number of projects proposed, and number delivered, to increase both quantity and quality of rail freight capacity and capability

KPIS

1. Changes in the tonnage per km moved by rail annually, relative to road haulage.
2. Changes in utilisation of freight route network capacity (including uplift in freight services), by route mileage, by tonne-km [and others?]
3. Changes in rail freight contribution (GVA) for the TfSE area relative to other UK regions and as a proportion of the UK GVA (following Oxford Economics methodology³⁴).

³⁴ Oxford Economics (2018) The economic contribution of UK rail 2018, https://d2rpg8wtqka5kg.cloudfront.net/421371/open20180301064200.pdf?Expires=1631872605&Signature=CA_RVup6kLrESuMgp3MqVhcYOgiZdwFekSOVaQpnswwR1SDChaQpldoW63xNxNPNZYnEZKvr~7d3Vb8RVQ5n0t6RaDnIISeiBgiZTICm3J23iJggEk3eo-IDxP132SGaytwKcbIRYq4QzbWjlyJkz3IYLkOZdn1SFPZ10SxyWPd8ud6dA91j6mrkUd9kG0-peDPkhRNEfPwDLGwoB4OaRcME8ipPCmli3pRlzP2LhbaBjMIHYmWbTYtDykNES1SfCn7xs8fIXQaAQRj3InW3thQkT0YR6Qbiyz674KPNAtQw7OMlfrAauinekgjsj0kN3cu1OuGnBoqPCqf-fHGLhXA__&Key-Pair-Id=APKAJVGCNMR6FQV6VYIA

4.7 LOCALISED SUPPLY CHAINS

DESCRIPTION

- 4.7.1. What does this scenario look like? The decision to leave the European Union, the disruption caused by the COVID-19 pandemic and the potential implications of 'Levelling Up' agenda, have all accelerated a shift towards 'localising' supply chains and more sustainable procurement practices. 'Anchor' institutions, such as public authorities and larger organisations that are 'rooted' in a locality or region, with purchasing power and local influence, are building more resilient supplier networks that combine the improved reliability of goods shipments, growing local economies and reducing freight miles.

IMPACTS

- Facilitates, business and logistics 'clusters'; otherwise known as economic agglomeration, around existing enterprise/business parks.
- Supporting public authorities with meeting targets for carbon neutrality through internal and shared procurement practices.
- Helping reduce freight miles and stimulating opportunities for 're-moding' freight transport/trip frequencies (zero carbon delivery)
- Helps mitigate additional land use pressure (demand for larger external sites for storage and processing) and is highly conducive to JIT deliveries and manufacturing.
- Increase in jobs and tax revenues arising from local employment opportunities and can help reduce 'brain drain' from less affluent areas by providing higher skilled jobs.
- Opportunity for sector specialisation and high value, high-cost manufacturing, alongside better regulation of supply chain standards.

FREIGHT DATA REQUIREMENTS

- 4.7.2. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ The % of contracts awarded to local suppliers by public authorities and anchor institutions
- ✓ The % of local spend by anchor institutions and relative shift in % from previous years.
- ✓ Local employment figures within freight & logistics sector (% change).
- Supplier freight miles from procuring purchases/services (suppliers' km's travelled).
- Tonnages carried per vehicle type (and % mode shift from HGV/LGV/high emission vehicles).
- Surveys/feedback with multinationals on supply chain transparency/CSR efforts.
- The proportion of core commodities, such as food, sourced locally.

KPIS

1. Changes in local contracts awarded/budget spend by major anchor institutions (on the application of contract/procurement conditions for servicing and delivery).
2. Changes in freight miles/vehicle emissions per contract, relative to previous contracted services set by anchor institutions.
3. % change in freight miles through supplier network.

4. Changes in number and quality of logistics-sector job opportunities (especially for youth/adult) and tax revenues from the sector across TfSE area. Reduction in graduate employment movements towards London.

4.8 CHANGING CONSUMER ATTITUDES

DESCRIPTION

- 4.8.1. What does this scenario look like? Changing attitudes and consumer preferences, such as increased environmental awareness, have impacted purchasing behaviour and decision making. Companies are capitalising on this trend and are visibly demonstrating their commitments to sustainability in their branding and operations; often looking across their supply chain and through their procurement processes to respond to new expectations.
- 4.8.2. Following the pandemic, the desire for a green recovery meets the practicalities of a green transition; with the freight industry responding at different rates (i.e. HGV sector potentially be scapegoated short term, compared to the publicity around e-cargo bikes).

IMPACTS

- Increased awareness and positive publicity of brands associated with zero emissions delivery (especially coinciding with Clean Air Zones) designated across TfSE area (e.g. Zedify).
- Move towards eco-labelling for products, which includes green shipping and carbon savings for shipping, to raise environmental awareness and company credentials.
- Consumer expectations regarding same day and next day deliveries likely to remain the same; further consolidating market leaders across 3PL sector.
- Proliferation of smaller, independent carriers, food producers and retail outlets, offering more personable, local services and goods, compared to multinational firms.

FREIGHT DATA REQUIREMENTS

- 4.8.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

✓ Mid-/Post-pandemic surveys on future spending choices and stated preferences (forming part of a Quality of Life survey).

- Content analysis of publicity materials across media outlets referencing freight/deliveries.
- Qualitative based assessments/feedback via trade bodies of changes made to freight practices made across the industry in response to consumer attitudes.
- National assessment of green shipping options provided via e-commerce outlets.
- Range and number of companies offering eco-labelling (products and services to market – available regionally and capturing carbon emissions saved in delivery).

KPIS

1. Consumer preference for supporting ethical and local purchasing decisions and more sustainable 'green' delivery options.
2. Carbon emission reduction from delivery of goods by organisations based across the TfSE area.

4.9 EVOLVING DIGITAL COMMUNICATIONS

DESCRIPTION

- 4.9.1. What does this scenario look like? Strong and reliable digital networks support freight interventions and logistics networks and services. The development of digital connectivity through superfast broadband and 5G has helped to transform mobility and offer new capabilities in the freight and logistics sector. This includes bringing online retailing to a greater audience through to improved reliability and responsiveness remote management of demand management measures and capturing air quality data along the SRN. Use of technologies has helped to manage access and the use of road space in and around international gateways.
- 4.9.2. The spatial variability of communications will be overcome; breaking down barriers to access for rural areas and helping tackle a multitude of geographical inequalities and social issues. This takes place concurrently with the increased centralisation of services and amenities and a backdrop of budget reductions; which can result in more and longer car journeys.

IMPACTS

- Extension of 4G/5G connectivity to rural areas that will facilitate a further boom in e-commerce activity into more rural areas (e.g. South Downs).
- Requirement for consolidating and optimising load capacities to travel to 'hard to reach' areas and fulfilling new customer expectations.
- Further opportunities to improve journey time reliability using 5G sensor networks for traffic flow monitoring (as undertaken across M25 and sections around Gatwick Airport), within proximity of major urban centres and along the main Freight Route Network (road).
- Improvements to supply chain efficiency and delay minimisation (especially for global trade movements) in and around international gateways.

FREIGHT DATA REQUIREMENTS

- 4.9.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ Internet connectivity (broadband) map coverage and speeds across the TfSE area (quality).
- ✓ Length (km's) of smart motorways/5G sensor network coverage across TfSE area.
- ✓ Journey time reliability/delays (HGVs/LGVs) along smart road sections.
- ✓ Turnaround time for HGVs (supplied by ports with VBS e.g. Southampton)

- Waiting/dwell times for HGV traffic accessing ports with VBSs in place (before and after implementation) Qualitative based feedback from freight industry (via trade bodies) on use of digital communications and contribution towards operational efficiency.

KPIS

1. Change in online retailing spend (and delivery demand) across rural and hard to reach areas
2. Use of 4G/5G sensors and digital technologies in supporting the delivery of demand management techniques Improved journey time reliability and reduction in HGV delays (minutes) on the SRN (longitudinal analysis pre and post introduction of smart motorways).

3. Change in waiting/dwell times on port access roads (and reduction in overall peak period vehicle volumes)

4.10 VAN GROWTH

DESCRIPTION

- 4.10.1. What does this scenario look like? Vans, best described as vehicles under 3.5 tonnes gross vehicle weight, including the payload, have become the most popular, flexible and convenient means of transporting a range of goods; facilitated by the surge of demand across the following areas:
 - E-commerce; and the role of online retailing
 - Home grocery deliveries
 - Specialist outsourcing (servicing)
 - Burgeoning construction industry
- 4.10.2. The growth in van road miles, which increased substantially during the height of the pandemic, has stabilised but they continue to be the mode of choice to meet consumer expectations (timing/speed/delivery transparency) and the demands of growing urban populations.

IMPACTS

- Risk of exacerbating [local] air quality issues and traffic congestion across major towns and cities in the TfSE area (and impacting AQMA Action Plans). Air quality impacts could be greater in the short run if there is wide availability of cheap vans from the second hand LGV market.
- Increased demand for exploring alternative urban logistics transport options, alongside a requirement to boost electric vehicle charging infrastructure to support a green transition.
- Greater pressure will be placed on optimising urban spaces for van deliveries and servicing areas; with competing use of land (especially highway) likely to be experienced between other vehicle classifications and/or land uses.

FREIGHT DATA REQUIREMENTS

- 4.10.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ LGV freight flows (volumes/speeds/tonnage), across each urban area within the TfSE area.
- ✓ AQMA data on particulate matter/NOX across urban areas within the TfSE area.
- ✓ Volume of LGV registrations (including the proportion of electric vehicles) via DVLA.

- Qualitative movement analysis of LGV parking behaviour across city/service centres and economic hubs
- Observational analysis of LGV fleets across high streets/trip generators including:
 - Unbranded vans
 - Van models and fuel type
 - Van industry/sector
- Local home delivery volumes (& % change) captured by larger supermarket chains.

KPIS

1. Number of vans in urban areas based on Annual Average Daily Trips (AADT) counts baseline and ongoing.
2. Number of road casualties involving vans, especially those involving vulnerable road users.
3. Reduction in the number of Penalty Charge Notices applied to LGVs per urban area.
4. Increase in the proportion of electric van fleets/sales relative to ICE vans.
5. Improved air quality (by pollutant) relative to traffic levels in major urban centres.

4.11 BUSINESS AS USUAL (BAU)

DESCRIPTION

4.11.1. What does this scenario look like? A Business as Usual (BAU) scenario was set out in TfSE's Transport Strategy. It is based on the Department for Transport's (DfT) National Trip End Model and assumes minimal changes in current trends, policies, and transport supply across the TfSE area. The scenario forecasted for 2050 includes the following:

- Population grows from 7.8m to 8.5m (up 12%).
- Employment grows from 3.3m to 3.7m (up 12%).
- GVA grows from £183bn to £399bn (up 119%).
- Total trips increase from 20.9m to 23.9m (15%).

4.11.2. In terms of vehicle movements, including freight, the main movements would include a 42% increase from other parts of the UK to TfSE area and a 29% increase in flows from TfSE to other parts of the UK. In other words, more goods come into the region that leave the region. There would also be significant increases in flows, 22% and 24%, between London and TfSE area respectively and a 11% increase in movements within the TfSE alone. On this basis, there would be a net increase in the balance of freight movements into the region.

IMPACTS

- A 12% increase in population and employment figures would have a disproportionate impact on freight movements across the TfSE area; with overall GVA output being substantially lower than a Sustainable Route 2 Growth (SR2G) scenario (217bn overall GVA), which is the preferred 'scenario' for the TfSE Transport Strategy.
- The proportion of car trips would rise significantly (19%) on top of baseline figures (2019).

FREIGHT DATA REQUIREMENTS

4.11.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ GVA uplift and annual forecasting (extracting the value added for freight/logistics)
- ✓ Employment figures for the TfSE area and employment coverage across major economic hubs
- Industry survey on the uptake of digital technologies and travel demand measures
- Relative spend on infrastructure per road and rail corridor km, across TfSE area

KPIS

1. Increase in GVA and economic contribution of freight and logistics sector relative to overall GVA.
2. Higher proportion of non-road-based freight transport for 'new' movements, compared to current baseline figures.
3. Increase in employment opportunities (including across freight & logistics sector) within the TfSE area – both job numbers and job value.

4.12 SUSTAINABLE ROUTE 2 GROWTH (SR2G)

DESCRIPTION

- 4.12.1. What does this scenario look like? Mapping and prioritising key drivers for transport behaviour; balancing the needs of businesses with the impending decarbonisation agenda, protecting the environment and improving local amenity. Feedback from across TfSE stakeholders generated five scenarios, including SR2G; modelled around mode shift under the following:

Economy & Employment

- Growth concentrated in large urban areas
- Investment in targeted tradeable sectors and specific deprived urban areas
- Boost to public/third sectors and construction

Health & Environment

- Reduction in energy generation/heavy industry/transport demand
- Protect and enhance the environment
- Reduction in carbon footprint

Technology

- Growing tech sectors

Policy

- Introduce road pricing
- Facilitate CAVs
- Encourage active modes and
- Sustainable transport

The SR2G scenario aims to deliver a number of outcomes, namely:

- a highly productive economy;
- growth of priority sectors;
- more local employment;
- reduced inequality; and
- more focus on protecting and enhancing the environment.

IMPACTS

- 4.12.2. This will be achieved through:

- The fast adoption of digital technology and demand management policies (including where a freight-beneficial lens can be applied).
- A reduction in car trips modelled to unlock additional road capacity for haulage; with a focus on investment along corridors.
- Substantial increase in trips from London to the South East (47% covering all modes) compared to a BAU scenario.
- Movements buoyed by further employment opportunities and growth of major economic hubs across the TfSE area.
- A £59bn uplift in TfSE area GVA (e.g. by 15%, to £399bn), a 91,000 increase in population compared to BAU scenario.

FREIGHT DATA REQUIREMENTS

4.12.3. What does this scenario mean for the collection of high-quality freight data and what resources are required?

- ✓ GVA uplift and annual forecasting (extracting the value added for freight/logistics).
- ✓ Employment figures for TfSE area and employment coverage across major economic hubs.
- Industry survey on the uptake of digital technologies and travel demand measures
- Relative spend on infrastructure per road and rail corridor km, across the TFSE area

KPIS

1. Increase in GVA and economic contribution of freight and logistics sector relative to overall GVA.
2. Higher proportion of non-road-based freight transport for 'new' movements, compared to current baseline figures.
3. Increase in employment opportunities (including across freight & logistics sector) within the TfSE area – both job numbers and job value.

SUMMARY OF TRENDS

4.12.4. There are a number of current and emerging trends which will have an influence on the movement of goods and the type of commodities being moved across the UK and the TfSE region. These are prone to change over time in response to a host of factors and will determine likely future scenarios. This can be best summarised using a PESTLE analysis:

- Political: Decision making at all tiers of government, particularly global and national level in response to major issues such as the climate emergency and trade arrangements.
- Economic: The desired approach towards macro-economics such as addressing inequalities (levelling up agenda), monetary and fiscal policy and micro-economics, such as energy tariffs.
- Social: Changing consumer preferences and attitudes towards the use of digital communications alongside the creation of quality employment and investment in skills.
- Technology: The pace and scale of alternative technologies being pursued to decarbonise and reach net zero, alongside supporting industries with meeting client and consumer expectations.
- Legal: The influence of regulation and legislation (particularly around stemming externalities from the freight industry) and how this changes operational profiles of industries and organisations.

- Environmental: The drive towards decarbonisation and ‘greening’ all sectors of the economy, including freight transport.

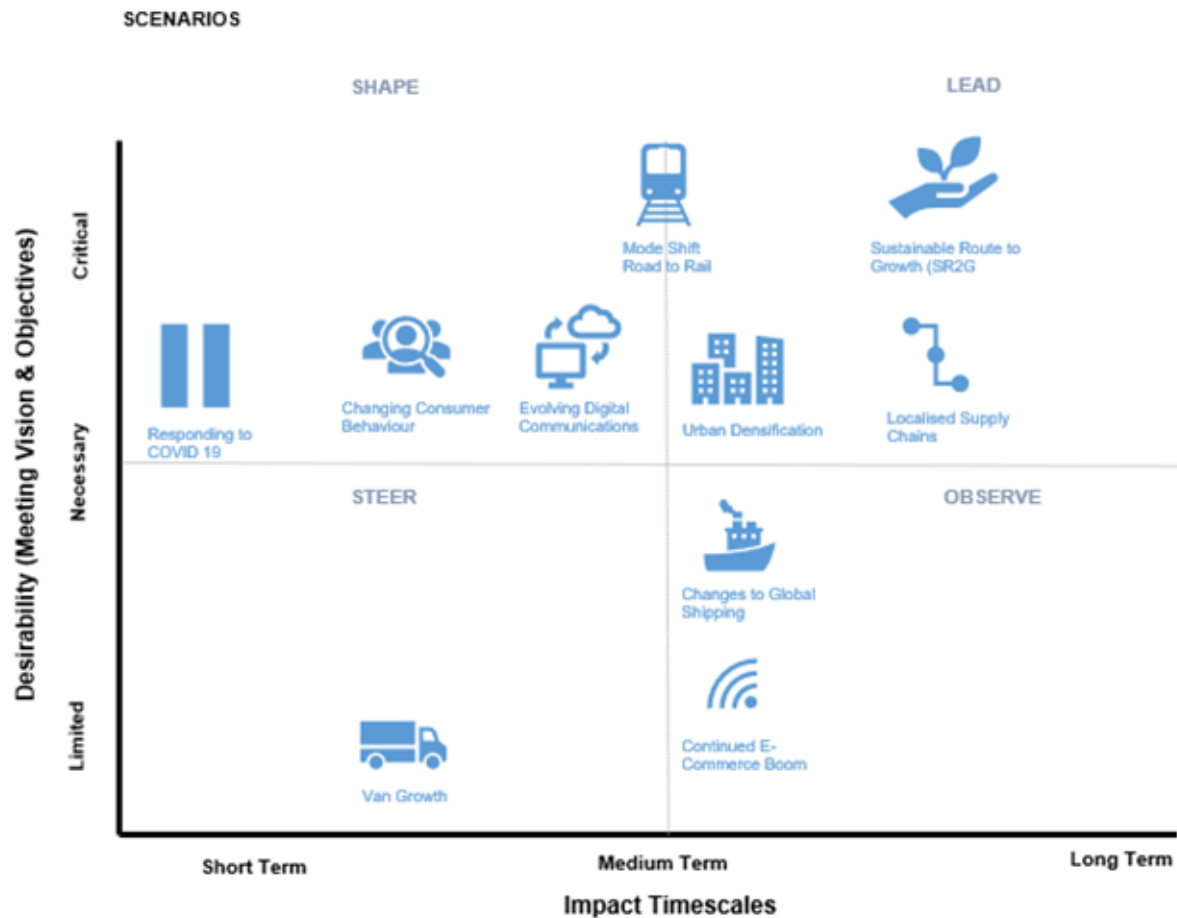
4.12.5. TfSE can play an instrumental role in response to emerging trends and scenarios. Figure 4-1 illustrates whether TfSE can take the lead, partner, steer or observe trends that are emerging across the region (which is likely also the case across the UK). This is influenced by how each trend may intersect with the freight strategy vision and objectives and their level of volatility and influence on freight industry activity.

Figure 4-1 - TfSE Influence on Trends (Author, 2021)



4.12.6. TfSE has a greater role to play in helping determine future scenarios through its actions and policies and leading on shaping the future of freight transport across the region. A proactive approach is required, over time, to shape and steer some scenarios whilst observing these manifest in some instances (see **Figure 4-2**).

Figure 4-2 - TfSE Influence on Scenarios (Author, 2021)



4.12.7. Better data will help TfSE with responding to emerging trends and influencing future scenarios. As implied in both figures, relationship building will be key to making that happen whilst TfSE can be expected the lead where possible within a regional context and using the levers of governance as part of delivering a freight strategy.

5 PATHWAY TO BETTER DATA

5.1 BETTER SOURCES, BETTER DATA

- 5.1.1. Overall, it is clear that, although plenty of freight data exists, it does so in many different forms. There is a wide variety of data collection and presentation methods in use, with a mix of terminology and a lack of standardisation affecting the quality, availability and ease of use of that data.
- 5.1.2. In addition, much of that data originates from DfT and is collected using dated survey approaches, such as the Continuing Survey of Road Goods Transport (CSRGT) and the International Road Haulage Survey (IRHS). These rely on operators accurately completing survey forms and providing full details on operational activity undertaken for specific vehicles, on trips within a defined timeframe.
- 5.1.3. That data is manipulated and used in the GB Freight Model, along with data from other sources. The shortcomings of this process mean that there are multiple opportunities for inaccuracies to be reported, unintentionally or otherwise, and a reliance on human intervention.
- 5.1.4. Ultimately, the best quality freight data to inform policy and planning and address “freight blindness” will come from real-life operations, reported directly, using technology, avoiding the need for surveys to be completed by (often very reluctant) operators. Having access to real world data from operators’ systems (obviously with some limited processing to ensure commercial confidentiality) would move informed freight policy making and planning forward significantly.
- 5.1.5. The pathway to get from today’s comparatively weak situation to the informed position described above, requires the following key roles to be undertaken by a variety of parties, in the structure of a formal, ongoing partnership programme.

FUTURE ROLES

DFT

- 5.1.6. DfT need to take ownership of standardisation of data collection methodologies, terminologies and the development of future national freight models. Working with STBs and others, DfT need to define how best to engage with operators in the longer term, to access the best possible quality data but with clear benefits to be offered back to operators who provide data on an ongoing basis.
- 5.1.7. Defining those benefits is a key challenge, given operators are understandably reluctant to provide more information than deemed absolutely necessary to government. Key to this will be Memorandum of Understanding (MoU) between DfT and operators (with likely other parties/data sources involved too), defining roles and responsibilities on both sides, confidentiality – and rewards and benefits for operators willing to provide access to real world operational data.
- 5.1.8. The type of reward would need to be negotiated and defined but could range from direct, simple financial rewards for contributions, through to discounts on a suite of products and services offered by their respective trade sector associations (including an actual subscription in some instances).
- 5.1.9. An industrywide scheme would be inclusive of operators from multiple sectors to participate for clear rewards for levels of data shared, degree of access, time commitment agreed and other criteria. This could feed into the emerging national freight data repository (to be suggested as part of a new pathfinders project and funded through DfT) which can then be accessed (at an appropriate level of

detail and regional scale) by public sector planners and policy-makers (with commercial sensitivities protected in line with the agreed MoU terms and conditions).



STBS & PUBLIC/LOCAL AUTHORITIES

- 5.1.10. STBs and public/local authorities can act as DfT's agents locally and regionally, setting up MoUs with local and regional operators, helping DfT achieve national coverage through local and regional relationships with key operators, across modes. This would be rewarded by DfT giving access to its central data hub and giving a place on a public sector steering group, inputting to the ongoing programme of data collection, to ensure their user requirements are fully met.
- 5.1.11. STBs can also work with each other, introducing operators with national (or multi-regional) coverage to other STBs, building the programme from local and regional levels up – helping to share best practice between STBs and sharing contacts and partnerships with private sector operators, strengthening working relationships.
- 5.1.12. Better freight data would feed into the development of an (aforementioned) established, pan national data repository that would aim to provide better forecasting and planning for freight and logistics activity. The opportunity presented to capture and utilise 'live' data, provided by industry, would also improve the responsiveness of public authority decision making and the ability to tailor and lobby for investment around emerging trends and scenarios.
- 5.1.13. Live data also presents an opportunity for a wide range of public authority departments (highways in particular) to respond in real time to events and activities. Equally as important is how the database can be developed to inform longer term investments in infrastructure – with the standardisation of measurements and terminology creating more consistent metrics for analysis and interpretation.



FREIGHT ORGANISATIONS

- 5.1.14. Shippers, port operators, hauliers, freight forwarders and FOCs are obviously crucial to the whole pathway programme described above and their role, protected and rewarded via MoUs, will be to provide access to their real-world data and to proactively participate in the ongoing programme, partnering with DfT at the strategic level and with STBs and local authorities at the regional and local levels. Long-term data sharing commitment is needed and, in return for that, clear benefits need to be provided to operators to participate. This includes, but is not limited to:

- The contribution better freight data, harvested in greater quantities, can make towards informing key strategic and policy decision making, including targeted investments in freight network provision that can ultimately improve operational efficiency.
- Identifying knowledge gaps and providing more personalised support to the freight sector and individual organisations. This includes unlocking future market opportunities and raising awareness of future issues and challenges over time (i.e. network resilience) to inform investment decisions. It also extends to maximising the use of existing assets (e.g. vehicle and warehouse optimisation) to improve their cost efficiency.
- Improving all round supply chain transparency, collaboration and industry standards between different components and organisations within the production, storage and delivery of items. At a granular scale, collated telematic data can help understand fuel efficiency on regional road sections and help to build business case for trade bodies to use for lobbying central government for investments. This is the strength in numbers approach.



INTERMEDIARIES

- 5.1.15. Trade associations, academia, data system operators, fleet management software suppliers and others – have a role to play to facilitate private sector involvement, ensuring pan-industry engagement, encouraging operators to participate and share, helping to make data accessible and relevant and advising DfT on data collection methodologies and standardisation required.

6 CONCLUSIONS & RECOMMENDATIONS

6.1 INTRODUCTION

- 6.1.1. This report has provided an overview of the importance and value of freight data, whilst acknowledging the challenges faced in gathering and collating information that can properly inform freight planning and strategy and address 'freight blindness'.
- 6.1.2. Whilst there are a number of datasets available within the public domain, the quality and coverage of data needs to improve to help inform better forecasting, planning and decision making by national and local government agencies. Issues such as the lack of industry data, standardisation and representation of industry sectors, have been identified and recommendations have been provided to rectify these shortcomings. This includes laying out a simple pathway to better freight data from better sources.

6.2 SUMMARY POINTS

- 6.2.1. A key takeaway message from the assessment of freight data collated through the freight data catalogue and conveyed in the data requirements for responding to future freight scenarios, is the need for greater industry engagement and more granular data accounts; especially if these can be provided in real time.
- 6.2.2. Partnership working between public authorities, from DfT to TfSE, through to industry, will be critical. The relevant public authorities need to take a proactive role in helping to standardise collection methods and facilitate greater data transparency across the industry. Emerging technology can help improve data transparency providing sharing can be facilitated, whilst a relationship, based on financial incentives (as an option) may be required to help broker relationships, the required level of trust and data sharing by industry, longer term.
- 6.2.3. There is also a continuing role for the TfSE Freight Forum in forging links between public authorities and the freight industry, to help improve access to data and to respond to trends and future scenarios. The use of technology can help with live data capture and sharing in this respect and is particularly relevant emerging from the changes to the industry that have accelerated as a consequence of the COVID-19 pandemic and of the UK leaving the European Union.
- 6.2.4. The pathway to better data depends on the roles and future responsibilities that each main actor needs to play in ensuring better data capture. There are considerable challenges that need to be addressed in order to collect better quality data in larger quantities. TfSE should monitor the progress of the proposed national freight data repository whilst starting to forge stronger relationships with trade associations, the freight industry and local public authorities across the region to begin more accurately defining the pathway to securing data from industry.



Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL

wsp.com

PUBLIC