Peninsula Transport
Transforming the economic performance of the south west

Western Gateway
Sub-national Transport Body

South West Freight Strategy

Year 2 monitoring report

July 2024

AECOM

Contents

1. Introduction

In 2021/2022, the South West Freight Strategy was developed with the aim of shining a spotlight on the importance of freight to communities and businesses in the South West. Its aim was aligned to helping address the challenges, opportunities and priorities facing the freight sector in the South West over the next 30 years – to 2050. Its guiding principles anchored around the three sustainability pillars of environment, economy and society. The South West Freight Strategy is supported by the regions Transport Strategy from Peninsula Transport[1] and Strategic Transport Plan from Western Gateway[2].

The South West Freight Strategy is a joint strategy between Peninsula Transport and Western Gateway Sub-national Transport Body (STBs), recognising the spatial interdependencies between the areas, particularly for freight movement. This reflects the reality that freight and their wider supply chains operate on a more regional, national and international basis. An STB is an organisation aimed at providing strategic transport governance at a much larger scale than existing local transport authorities, by grouping councils together. The guiding principles behind the STBs can be seen from their vision statements.

Recognising that freight is moved around the region in a number of different ways, the South West Freight Strategy is unique amongst other regions in developing 46 Freight Strategy interventions across a number of modes of transport including aviation, maritime, rail and road. It goes one step further in developing a series of 'other' interventions which include connecting and bringing stakeholders together in sharing the learnings from the Freight Strategy work.

The 'Year 2 monitoring report – 2024' represents the second year of the Freight Strategy implementation phase, which has seen very encouraging contributions from a variety of stakeholders across the freight industry to help progress the freight interventions that were developed. Peninsula Transport and Western Gateway STBs are pleased to report on the progress of a number of the interventions which have been prioritised throughout the Year 2 implementation phase.

This includes the very well attended South West Freight Forum meetings, which brings both the private and public sectors together and forms a vital part of reporting how the interventions are being progressed and obtaining feedback. Throughout Year 2, the attendance levels for the South West Freight Forum have been very strong with an average of 31 individuals attending the Freight Forum sessions. This is a great achievement and clearly shows a desire for change in the industry and the value of the Freight Strategy. This is backed by feedback from members provided throughout the forum sessions, forum chat and subsequent communications after the event. To date, over 150 individuals have been involved in the South West Freight Forum since its inception. For Year 2, over 20 speakers from a variety of industries have presented at the Freight Forum, helping to keep members informed of activities in the South West. Alongside the forum being successful in achieving great attendance and engagement levels, it has been a platform to allow connections to take place for ongoing networking opportunities. The forum has observed a number of requests for connections taking place, which has resulted in further positive engagement.

1.1 STB's vision statement

Peninsula Transport	Western Gateway
"Transforming transport across the Peninsula, enabling our society and economy to thrive and our unique and outstanding environment to flourish. The vision is underpinned by the five key goals. Improving connections between people, businesses, and places, to enhance resilience of the transport network, to deliver affordable, zero-emissions transport for everyone, to help to improve the health and wellbeing of communities in the peninsula and to help the peninsula to be a great place to live and work."	*"The Vision of the Western Gateway STB is to enable sustainable economic growth by identifying a long-term investment programme designed to deliver a well-connected, reliable and resilient strategic transport system; that closes productivity gaps and makes the Gateway area more competitive, while respecting its world class natural and built environments."*

[1] https://www.peninsulatransport.org.uk/wp-content/uploads/2024/05/Peninsula-Transport-Strategy-May24.pdf

[2] https://westerngatewaystb.org.uk/wp-content/uploads/2024/05/3523.Western-Gateway-STP-2024-2050.pdf

1.2 Overview of the South West Freight Strategy

The South West is a region with unique characteristics, marked by its extensive coastline, varied landscapes and dispersed population. It is geographically the largest of the nine official English Regions and the third least populous. However, in the past century its population has grown by nearly a million people to over 5.6 million and population growth is forecast to continue at or above the average rate for the United Kingdom.

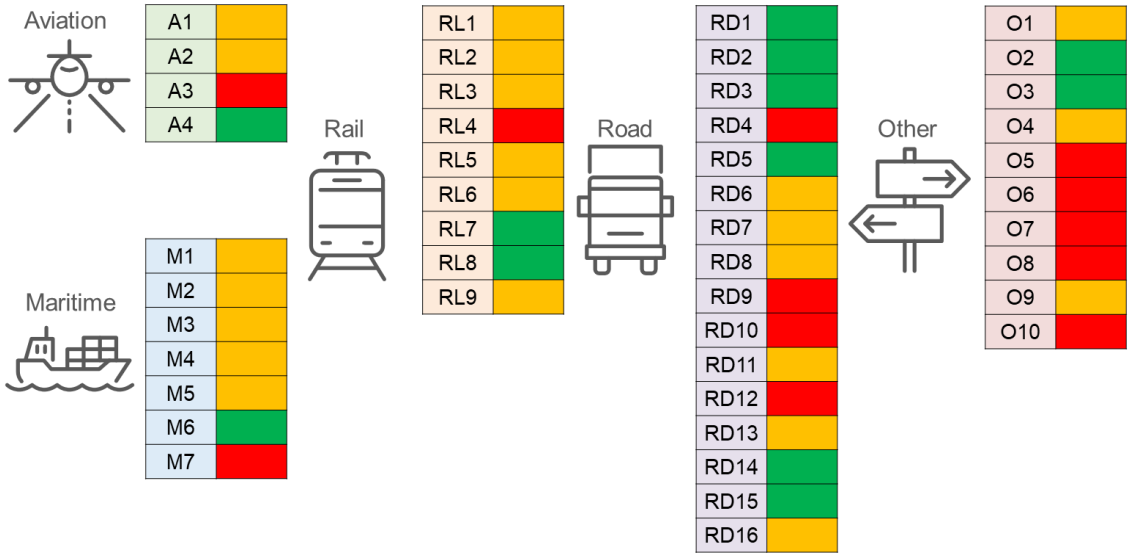
Connections within the region are critical for connecting communities and supporting the supply chain to support those communities. Airports, ports, rail terminals/facilities and the road network are critical to the efficient flow of freight. These connections and networks hold a number of challenges and potential opportunities for the South West. The challenge for the region is one of overcoming higher than average journey times to deliver sustainable, economic growth and to ensure communities are well connected to jobs, markets and vital services.

Unlike passenger trips, many goods movements are planned on a regional and national basis. It is important to understand wider strategic policy and operational issues that impact the South West region. Having a Freight Strategy that joins up both Peninsula Transport and Western Gateway STBs to form one unified South West Freight Strategy is critical to its success. It provides a holistic and joined up approach in reflecting the reality of freight movements and their wider supply chains in the South West. The strategy looks to better understand and support the freight industry over the next 30 years.

1.3 Year 2 implementation phase

Continuing on from the success of Year 1, the Year 2 implementation phase of the South West Freight Strategy has seen lots of engagement and activity on the 46 freight interventions that were developed. To date, around 74 per cent of the interventions (34 out of 46) have seen some or substantial progress being made. This is testament to the collaborative nature of the South West Freight Forum and the involvement of a wide range of stakeholders who understand the value of the Freight Strategy and the benefits it brings to the South West. A variety of engagement has taken place on the interventions both during the Freight Forum sessions and separately as industry partners continue to progress their associated interventions. A summary of the progress across all the interventions can be seen in Figure 1-1. Where interventions are shown in green, this shows significant progress has been made, amber good progress and those in red have yet to start.

Figure 1-1: Summary of intervention progress level (green – significant, amber – good and red – to be commenced)



A number of freight interventions have been prioritised by the STBs throughout Year 2, with several other partner organisations such as National Highways, Network Rail, GBRTT, several ports, airports, trade associations and universities taking an active part in progressing interventions. This 'Year 2 monitoring report – 2024' delivers the key findings of the prioritised interventions and the activities that took place as part of the implementation phase. These include:

- Summary of Year 2 progression
- O3 – South West Freight Forum
- M1 – Modal shift to maritime
- RL1/RL7/RL8 – Modal shift to rail
- RD2 – Bridge strikes
- RD5 – Lorry parking
- RD15 – Backloading trial
- A4 – Drones
- O4 – Demystifying freight

2. Summary of Year 2 progress by intervention

In July 2022, Peninsula Transport and Western Gateway Sub-National Transport Bodies (STBs) published the South West Freight Strategy (available at https://www.peninsulatransport.org.uk/wp-content/uploads/2022/07/Freight-Strategy-for-the-South-West-Full-Report.pdf), which listed a number of freight-related interventions aligned with the core priorities for the South West.

This section aims to provide a summary of progress across the Freight Strategy interventions that were prioritised for Year 2. There is a mixture of agencies taking these forward as will be discussed. There are some interventions that are yet to be commenced and this is planned as the implementation programme is spread over the period from 2022 to 2050. Some actions have been prioritised as they are urgent issues such as the need to make progress on decarbonisation. By the end of Year 2, 74 per cent of interventions have at least commenced early stages of implementation. It should be remembered that the STBs are a catalyst to prompting action in many cases, rather than being a delivery agent in their own right.

In addition to this section, an update on the remaining freight interventions which have seen progress throughout Year 2 can be found in Appendix 1.

2.1 Aviation intervention

2.1.1 A4 Review suitability and potential locations that could benefit from drone technology - Air freight operators and technology providers.

This review has looked to demonstrate some of the key advantages of using drones for deliveries in different industries, especially for hard to reach areas, particularly applicable for the South West given its geography. Drones can be more environmentally friendly, which can help the South West the region's path towards decarbonisation and can also reduce costs and increase efficiency for businesses and customers.

It is noteworthy that the South West has been involved in a number of drone trials, especially those between mainland Cornwall and the Isles of Scilly, and looks set to continue this involvement. The University of the West of England has been holding workshops investigating issues relating to drones including regulation. For more information see section 9 including research on the likely markets for the use of drones.

2.2 Maritime intervention

2.2.1 M1 Develop business case for coastal feeder services to help remove road vehicles - Port authorities

An exercise was carried out to assess the volumes of bulk commodities that move from various parts of the South West by county to other locations near the port of Bristol or to Gloucestershire which could be served by the port of Sharpness. The review of goods that could be suitable to be transported by coastal vessel was to see if there is potential for doing any modal switch from road freight to maritime transport given the right circumstances. Many bulk products are less time critical and could be moved by vessel. The potential volume was converted into 5,000 tonne payload ships for a comparison. For more information see section 4.

2.3 Rail interventions

2.3.1 RL1 Feasibility study to operate intermodal container trains from deep sea ports to intermodal sites - Network Rail and FOCs (Freight Operating Companies)

The South West is still underperforming in terms of potential rail freight. Despite being a significant growth area in the rest of the UK there are still no regular container trains in the region. The only service running through the region is the Port of Southampton to Cardiff service which occasionally may have boxes for the Bristol area. These are brought by road from Cardiff to Bristol. The CILT Rail Freight group say all the elements needed to run an intermodal service to/from the South West are in place except for the presence of a suitable terminal(s). For more information see section 5.

2.3.2 RL7 Encourage the establishment of rail freight intermodal sites in the South West.

The work from Year 1 has been extended into Year 2. It includes taking the 13 sites already highlighted and considering what needs to be done to bring some of the sites back into use. Network Rail has been active in investigating several sites including Gloucester yard where it is hoped aggregate trains will appear later in 2024. The Hamworthy branch to the

Port of Poole is getting closer to reinstatement. Exeter Riverside has a plan and developments are at an early stage. A mini-brochure has been developed to act as a taster for a site in Cornwall. Ongoing dialogue is happening between consultants AECOM on behalf of the STBs, Imerys and the rail freight sector. For more information see section 5.

2.3.3 RL8 Safeguard rail freight sites through developing Supplementary Planning Guidance - Local Authorities

The main 13 Local Authorities have been written to during Spring 2024 to ask about the most suitable locations for rail freight terminals in their area. A map of likely locations has been made available. This has prompted some discussion on the topic. The subject is also part of a freight sector briefing planned as part of 'Other intervention O4'. For more information see section 5.

2.4 Road interventions

2.4.1 RD2 Promote resources and training to help operators avoid bridge strikes - Network Rail

AECOM on behalf of the STBs has conducted some consultation and further research into bridge strikes and particularly the most hit bridge in the region. This is the Wilton Road Bridge, in Salisbury on the A36 which is a National Highways route. National Highways are planning improvement work on signs and sensors in 2025 to address at least part of the issues near this bridge. This example highlights the importance of bridge strikes which on average cost £13,000 each time and there is a wider cost to the public in delays both road and rail users. Network Rail says bridge strikes typically cost it around £23m per year. It's not just rail bridges as for example, Cornwall spends a million pounds a year on repairing bridges. For more information see section 6.

2.4.2 RD5 Review of current lorry parking facilities in the South West - Local Authorities with private developers

National Highways discussed the development of their Lorry Parking Demand Assessment (LPDA) open data. A link was made with the South West, with some sites scoring 15 out of 20 such as the Cotswolds. The AECOM team worked with National Highways to create a route strategies map, which was overlayed on the major freight routes. In efforts to tackle the lorry parking demand issue, NH has a £20 million pot to improve facilities to fund 50 per cent of the capital costs towards improvements at lorry parking sites. At the same time, DfT also has a funding pot to encourage additional parking to come forward in the market. A survey was conducted in March of key MRN roads in the region. For more information see section 7.

2.4.3 RD15 Promote a trial of the use of a load and vehicle matching exchange to reduce empty running for 10 hauliers for a year - STBs

A trial with Transport Exchange has commenced to test the merits of using a load matching service in reducing empty running by HGVs. The backloading trial has had a positive start with recruiting members to the trial and starting to obtain feedback. Data provided from Transport Exchange has shown there are significant opportunities for South West Hauliers to fulfil unallocated loads, helping to reduce their empty running. With over 10,000 unallocated loads in the Peninsula Transport region and over 23,000 unallocated loads in the Western Gateway region, there are opportunities in both STB regions. For more information see section 8.

2.5 Other interventions

2.5.1 O3 Establish and promote a South West Freight Steering Group - STBs

The Steering Group and sub-groups meetings have been well supported over the last year. Over 20 speakers have presented at the Freight Forum and there is a summary of each of their main points in a section of the Monitoring Report. Comprehensive Minutes of each of the meetings are on the STB websites. For more information see section 3.

2.5.2 O4 Agree the role of Sub-national Transport bodies with regards to the freight industry. Once established carry out an awareness campaign - STBs

The STBs are becoming more well established with additional staff and as a result, there will be more resources to address this issue. What is clear however is that the efficient movement of goods is one of five core areas as evidenced by Western Gateway's new Strategic Plan for the period from 2024 to 2050 published in May 2024. For more information see section 10.

3. O3 – Establish and promote a South West Freight Forum

Other intervention – O3	
Intervention name	Establish and promote a South West Freight Forum
Intervention description	Include Trade Bodies, hauliers, ports, rail freight, shippers, the aviation sector, academics, Local Enterprise Partnerships (LEPs), Local Authorities and other interested parties to identify workstreams/packages in the Freight Strategy.
Theme	Information and awareness
Timescale	Short term then ongoing
Intervention owners	Sub-national Transport Bodies – Peninsula Transport and Western Gateway

Progress to date	During year two, a total of 12 Freight Forum meetings took place. These were conducted via Microsoft Teams. To date, 24 Freight Forum meetings have taken place since the Freight Forum's inception. Throughout Year 2, the attendance levels for the South West Freight Forum has been very strong. On average, 31 individuals attended the forum, across all the sessions. On average for the sub-groups, 29 individuals attended and on average for the main group, 37 individuals attended. By inviting a selection of knowledgeable guest speakers we have maintained interest in a wide variety of topics. This is a fantastic achievement and clearly shows a desire for change in the industry and the value of the Freight Strategy.
Next steps	The next steps will be to continue the progress of the South West Freight Forum into the Year 3 of the implementation phase of the South West Freight Strategy. The topics and variety of guest speakers will continue to be developed ensuring the level of interest is kept high and to further enable the freight interventions to be developed.

3.1 Introduction

Intervention O3 – the South West Freight Forum is perhaps the most overarching intervention from the South West Freight Strategy. The overall function of the South West Freight Forum is to drive forward the implementation of Freight Strategy interventions that were developed. The forum involves representatives from across industry including Trade Bodies, hauliers, ports, rail freight, shippers, the aviation sector, academics, Local Enterprise Partnerships (LEPs), Local Authorities and other interested parties. Having a mix of representatives from various public and private sector interests, with a cross section from representative sectors, is essential in taking forward the interventions. Peninsula Transport and Western Gateway STBs are grateful to all stakeholders who have been involved in the Freight Forum and helped to progress the interventions.

This section explores recent activities and the topics covered including the Freight Strategy interventions they align to.

3.2 Overview

The South West Freight Forum is split into four groups. These consist of three sub-groups which are aligned to specific modes of transport including aviation and maritime, rail and road. The idea behind the sub-groups is to delve into specific details amongst the interventions aligned to those modes of transport. This allows for more detailed conversations and to seek feedback from the group on the updates that are provided. These groups are chaired by a Member of the STB staff. The fourth group, the main group, brings together a summary of the findings from the sub-groups. This provides an opportunity for other members of the forum, who may not have attended the sub-groups, to hear about the updates. The main group is chaired by an industry representative who is currently Drystan Jones, Director and General Manager, Falmouth Docks, A&P Group.

The series of four meetings occur three times per year meaning during year two, a total of 12 Freight Forum meetings took place online using Microsoft Teams. To date, 24 Freight Forum meetings have taken place since the Freight Forums inception. Throughout Year 2, the attendance levels for the South West Freight Forum has been very strong. On average, 31 individuals attended the forum, across all the sessions. On average for the sub-groups, 29 individuals attended and on average for the main group, 37 individuals attended. This is a fantastic achievement and clearly shows a desire for change in the industry and the value of the Freight Strategy. This is backed by feedback from members provided throughout the forum sessions, forum chat and subsequent communications after the event. To date, over 150 individuals have been involved in the South West Freight Forum.

Throughout the Freight Forums, members have been updated on the progression of the freight interventions as part of the Year 2 implementation phase. Partners at AECOM have helped to track the level of progress across the 46 interventions and deliver these to the forum Members. These are driven by the stakeholder engagement processes happening behind the scenes to understand what partner organisations are doing and also through developing individual projects. A variety of projects have been progressed ranging from engagement with key stakeholders on potential rail freight terminals to practical projects such as the South West Lorry Parking Review, researching potential volumes that might be suitable for modal switch to maritime, likely sectors for use of drones and the backloading trial aimed at reducing empty running in the region.

As well as providing updates on the progression of the freight interventions, the forum receives regular updates from third party organisations such as trade associations, Network Rail and National Highways. It is also an opportunity to invite guest speakers to the forum to speak on topics that align to the interventions. The STBs are keen to involve all manner of organisations and have warmly welcomed over 15 guest speakers to the forum, throughout Year 2, to speak about their organisations, their influence in the South West, issues they face in the freight sector and how they align to the South West Freight Strategy interventions. It is widely understood that the STBs cannot push ahead with all the interventions themselves and therefore seek the support of organisations in various sectors to help progress the Freight Strategy.

Additionally, the forum is there to bring people and organisations together. Alongside the forum being successful in achieving great attendance and engagement levels, it has been a platform to allow connections to take place for ongoing networking opportunities. The forum has observed a number of requests for connections taking place, which has resulted in further positive engagement.

Recordings, notes and minutes of all the sessions have been made available to interested parties. These have been sent to forum Members. A dedicated website to store all of these is in progress to enable easier access, including access to session recordings.

3.3 Year 2 speakers.

A summary of the 20 plus companies that provided speakers, is presented in this section along with topics covered and the freight interventions associated with them. In some cases, the company presented at both a sub-group session and then at the main steering group as well.

Freight Forum group:	Aviation and Maritime sub-group | Main group	MARITIME UK SOUTH WEST
Freight intervention:	M1 | M2 | M4 | M5 |	

Summary

Maritime UK South West brings together a network of South West partners to develop and promote four overlapping and complimentary world class marine centres of excellence with the potential to exploit global market opportunities and create transformational economic growth for the region. These include: offshore renewable energy, autonomy and geospatial data, marine manufacturing and ocean technology and aquaculture.

Maritime UK South West has provided regular updates to the Freight Forum, sharing details around 'Green Corridors' opportunities, rail links to ports opportunities, future fuels and shore power opportunities. Maritime UK South West has helped to get more ports included in the forum which has resulted in ports sharing with the forum the plans they are putting in place to help decarbonise the maritime sector. They have been progressing a number of interventions, most notably the case for having more coastal shipping feeders in the South West as part of the modal switch from road to maritime agenda.

Freight Forum group:	Road sub-group | Main group	national highways
Freight intervention:	RD2 | RD5 | RD6 | RD7 | RD13	

Summary

National Highways is the government company which plans, designs, builds, operates and maintains England's motorways and major A roads, known as the strategic road network (SRN).

National Highways has provided regular updates to the forum as a major stakeholder involved in the implementation of a number of road freight interventions. They presented a number of updates to the forum on developments in the region including sharing details on the next phase of Road Investment Strategy 3 (RIS3), network infrastructure development plans such as A30/A303/M32 and network conditions impacting road users. The forum has been an effective platform to allow National Highways to obtain feedback on a number of consultations including Shaping the future of England's Strategic Roads and Route Strategies. They shared their work, in collaboration with AECOM, on the Lorry Parking Demand Assessment for the South West, helping to highlight the hotspots and gaps in lorry parking for HGV drivers.

Freight Forum group:	Rail sub-group | Main group	NetworkRail
Freight intervention:	All rail interventions	

Summary

Network Rail owns, operates, maintains and renews Britain's railway infrastructure to deliver a safe and reliable railway for passengers and freight customers. The regions encompass multiple routes and transport hubs to better align operations with passengers' and communities' needs.

Network Rail has provided regular updates to the forum as a major stakeholder involved in the implementation of a number of rail freight interventions. This included sharing details of the Peninsula Rail Corridor Strategic Study, development updates in the region including updates around freight flows and freight terminal works. Extensive research is being done by Network Rail looking at the possibility for a terminal(s) in the South West. They shared with the group the opportunities and challenges at various potential locations throughout the South West. This provided the forum with a great insight into the work as it edges closer towards opening/reopening a freight terminal in the South West. As a result of these updates, further meetings have taken place to help push forward specific rail freight interventions as part of the Freight Strategy. Great British Railways Transition Team (GBRTT) have also featured alongside Network Rail to provide updates about rail freight flows in the South West.

Freight Forum group:	Road sub-group | Main group	RHA
Freight intervention:	RD2 | RD3 | RD4 | RD5 | RD9 |	

Summary

The Road Haulage Association (RHA) is a Member-led trade association supporting people and businesses in the road transport industry. They offer a voice for their members to work with governments, policy makers, and Local Authorities across the UK on the issues most important to them. They campaign on a breadth of priorities including changes to legislation, rising fuel costs, better roadside facilities, and the transition to a Net Zero transport system.

RHA has provided regular updates to the forum as a major stakeholder involved in the implementation of a number of road freight interventions. This includes sharing some of the key challenges facing road hauliers such as future fuels, roadside facilities, driver shortages, diversionary routes and bridge strikes. RHA brought to the attention of the forum the concerns from members around the Tamar Bridge toll charges and introduced a South West haulier to the forum to help share the challenges around this. Updates around various challenges were shared including what is being done to help resolve them. This included sharing details about skills bootcamps, national lorry week and updates on the truck simulator initiatives, which are designed to help introduce children and young adults to the career opportunities in freight and logistics.

Freight Forum group:	Aviation and Maritime sub-group | Rail sub-group | Road sub-group | Main group	AECOM
Freight intervention:	A1 | A4 | M1 | RL7 | RL8 | RD2 | RD5 | RD15 | O4	

Summary

AECOM is a provider of engineering, consulting, and project management services. They operate, design, build, and finance various infrastructure projects for businesses, governments, and organisations worldwide. The AECOM freight and fleet team is assisting Peninsula Transport and Western Gateway STB in the running and management of the South West Freight Forum, as well as enabling freight interventions to be progressed.

AECOM has provided regular updates across a number of different topics for the South West Freight Forum. This includes sharing key findings, learnings and opportunities for the South West including the Department for Transport 'National Survey of Lorry Parking' and 'Lorry Parking Demand Assessment' analysis, alongside National Highways. A presentation was given on the Airlander Hybrid Air Vehicle project (A1) and the opportunities for drones (A4) to explore future technology applications for aviation freight. AECOM has presented a number of updates for a series of small projects aimed at progressing selected interventions. This includes exploring maritime opportunities to move more goods by coastal shipping (M1), research on rail freight terminal opportunities (RL7/8), bridge strikes research (RD2), additional South West lorry parking research (RD5), backloading trials (RD15) and demystifying freight (O4). AECOM shared with the forum the importance of freight data including the AECOM Freight Matters report which provides insight and commentary on some of today's most important freight topics including the future of freight, new and emerging technologies, and decarbonisation.

Freight Forum group:	Aviation and Maritime sub-group	BournemouthAirport Part of Regional & City Airports
Freight intervention:	A1	

Summary

Bournemouth Airport is operated by Regional & City Airports (RCA) part of Rigby Group plc. It is the 20th busiest airport in the UK, operating to around 30 destinations. It is on track to see one million passengers pass through Bournemouth.

Bournemouth has seen a significant increase in air cargo volume, particularly between China and the UK, with a focus on supporting the transportation of UK-manufactured goods back to China. Bournemouth handles the most air cargo of any airport in the South West. There are opportunities for enhancing freight transportation, especially away from London airports and East Midlands. This benefits time-sensitive goods in terms of efficient delivery and congestion avoidance. Bournemouth Airport has the potential to serve as a strategic location for processing and distribution, with an emphasis on quicker processing times compared to busier airports nearer London. Local distribution centres near Bournemouth Airport can further capitalise on its strategic location for goods distribution across England. Sustainability efforts are a priority, with initiatives including solar power for local ground operations and the exploration of sustainable fuels to reduce emissions.

Freight Forum group:	Road sub-group
Freight intervention:	RD4

Summary

Bradfords Building Supplies has been running for 253 years and since day one, they've always been family owned and today, they have over 40 branches across the West Country and a team of 800. Bradfords was one of the first companies to do multi modal transport including use of horse and cart, boats and the railways. Bradfords was the largest distributor of coal in the South West. Many different commodities have been moved throughout Bradfords history and included distribution via ports. A true pioneer for multimodal travel.

Bradfords shared with the forum their history and the company they are today. Some of the key challenges faced by hauliers include load security, tachograph manual entries, driver performance, maintenance contractors and sustainability. Bradfords operate around 140 HGVs, 100 vans and 250 cars. Recognising the concerns around rules for manual entry on tachographs, Bradfords is proud to push that forward to get the majority of drivers to comply with this. Better driver performance is key to improving the efficiency of the business. There are limitations on access to maintenance facilities and having to plan well ahead is essential. The level of service has gone down and more individuals are needed in the repair and maintenance sector. For sustainability, Bradfords is still in its infancy and diesel power is still the leading choice, at the moment. They are starting to get experience of electric vehicles but wanting to learn from the experiences of other operators.

Freight Forum group:	Aviation and Maritime sub-group
Freight intervention:	A1

Summary

Bristol Airport is the ninth largest airport in the UK and England's third largest regional airport. Around 3,750 people work across the site. Serving the region with 117 destinations, Bristol Airport also acts as an inbound gateway to the South West. In 2023, a record of nearly 9.8 million passengers used the South West's gateway.

Bristol Airport provided a summary of their history and growth to the forum. Bristol Airport has experienced the fastest recovery from Covid among UK airports, with over nine million passengers passing through, including 40,000 on a busy day. It is constrained in size compared to similar passenger numbers at Birmingham Airport but lacks tram or rail links and faces road congestion issues. Growth plans include construction projects starting in Summer 2025 to expand facilities and improve access. The airport aims to become net zero for its operations by 2030. They plan to prioritise hydrogen over EV charging for decarbonising due to its potential impact on surface access emissions. Nevertheless, planning permission for an EV filling station has been secured. This has opportunities for airport service vehicles powered by alternative fuels. Challenges in electrifying buses and surface mobility relate to rural routes and economic feasibility. They are looking to encourage extra public transport services to the airport.

Freight Forum group:	Aviation and Maritime sub-group
Freight intervention:	M2 | M4

Summary

Bristol Port is a Maritime International Gateway spread across 2,600 acre estate supporting more than 10,000 jobs. The port was privatised in 1991 and handles a mix of cargo types. This includes approximately 750,000 motor vehicles handled each year, 1/3 of which are exports. 300,000 containers are handled each year; this compares to UK's top three container ports which are Felixstowe four million and Southampton and London Gateway 2.5 million each.

Bristol Port provided a summary of how the port has developed overtime and the strategic connections of Avonmouth and Portbury docks, including road, rail, and pipelines. The hinterland to the north of Avonmouth (Severnside) is in close proximity to supermarket distribution centres and fulfilment centres, where most of the cargo coming into Bristol goes to. There are a number of multimodal options at the port with most road traffic using the SRN (critical for staff and tenants), rail (cement Mendip stone and containers), coastal shipping (to Milford Haven and Hinckley C site), active travel and public transport. Wider discussions centred around future fuels and the hope to be net zero by 2035. The port has introduced electric vans and forklifts, with larger vehicles being powered by diesel and HVO. There are opportunities for hydrogen use in the future.

Freight Forum group:	Road sub-group
Freight intervention:	RD2 | RD14

Summary

Clearview provides technology solutions to the highways and transport sector and brings a wealth of knowledge and innovative ideas to the industry. Clearview have proven applications in the logistics market and see logistics as a strategic opportunity to bring their capabilities to solve important problems to many areas of the sector.

Clearview provided an overview of the technologies available to the forum. They are designed to detect something happening, act up on it and then store that information (Recognise, Act, Report). Clearview have a number of technology solutions including managing loading bays, detecting hazards, smart mobility (active travel), parking and delineation to name a few. An example of these technologies includes the Global Cargo Centre at Heathrow, which includes loading bay management. The technology puts sensors in the bays to detect if a vehicle is in the bay and inform incoming drivers. Also useful to detect vehicles which have overstayed. Safe vehicle manoeuvring includes using light up cat eyes to help inform drivers and aid them with manoeuvring the vehicles. Blindspot hazard and the use of detection to identify vehicles if they are reversing, helps inform other drivers. Finally, employee parking by detecting the vehicles in bays and informing other drivers of the availability and whereabouts of parking spaces. These are opportunities to integrate more technologies to ensure safer working practices.

Freight Forum group:	Road sub-group
Freight intervention:	O3

Summary

The Department for Transport (DfT) works with agencies and partners to support the transport network for the UK's businesses and to get people and goods travelling around the country. Their three core priorities include enhancing the transport network, improving the transport users' experience and reducing its environmental impact by decarbonising transport.

The DfT introduced to the forum the Freight Analysis and Modelling Environment (FAME) project. Its aim is creating an improved freight model to replace the current Great Britain Freight Model (GBFM) forecasts for freight movements by vehicle type and commodity type over the next 40 years. The new model will simulate and forecast freight demand and flows, covering all transport modes such as maritime, road (including light goods vehicles), rail and aviation. The DfT uses these models to measure impacts and assess scenarios, including changes in port capacity and industrial action. The project also involves a working group and wider stakeholders, including other government departments and devolved administrations. FAME aligns with DfT's strategic objectives, as well as specific plans such as the Future Freight Plan, the National Freight Network chapter, and policies related to transport decarbonisation and freight modal shift.

Freight Forum group:	Rail sub-group
Freight intervention:	All rail interventions

Summary

The Great British Railway Transition Team (GBRTT) work with the Department for Transport and Network Rail to provide industry leadership, within today's legal framework. As well as preparing the ground for GBR, they also deliver improvements that benefit passengers and freight customers in the here and now. GBRTT is focused on supporting organisations – across track and train – to work better together to improve both rail's financial sustainability and the customer experience.

GBRTT presented to the Freight Forum a number of updates alongside Network Rail with regards to freight flows and opportunities for rail freight terminals in the South West. This also included key updates around the Rail Freight Growth Targets which aims for a 75 per cent growth in freight moved by rail by 2050. There are also short term growth targets including a 7.5 per cent growth across CP7 (2024-2029). These targets have been driven by calls for evidence, economic analysis and understanding of current markets. The rationale was to coordinate decision making and make rail bodies accountable. 2050 forecasts were developed through a series of work packages, designed to address uncertainty, drivers of demand, traffic baselining and transparency.

Freight Forum group:	Aviation and Maritime sub-group	GPS MARINE
Freight intervention:	M1	

Summary

GPS Marine has over 50 years of service in the maritime industry. GPS Marine operates in ports and harbours throughout Europe but is the go to marine contractor on the Thames and Medway. The aim of GPS Marine has been to deliver added value by promoting innovative cost effective solutions. They aspire to achieve the highest standards in health and safety, equal opportunities and the protection of the environment at all times.

GPS Marine showcased the different types of operations used on rivers, including the distinction between inland ships, tugs, and barges. In addition, there can be environmental benefits with replacing diesel with Hydrogenated Vegetable Oil (HVO), and exploring alternative fuels like hydrogen and electric barges. GPS Marine is actively encouraging modal shift for the long-term benefits, which is shared by their clients who are increasingly recognising the advantages of utilising the river for transportation. The future possibilities for GPS Marine includes establishment of local mixed freight hubs, safeguarding wharves, reactivation of strategically located wharves, reducing CO_2 levels and minimising freight-related road miles. GPS Marine is interested in collaborating with the South West Freight Forum for potential work or projects relating to commercial ports in the South West.

Freight Forum group:	Aviation and Maritime sub-group	HOULDER
Freight intervention:	M1	

Summary

Houlder Limited is a naval architecture and engineering consultancy with 75 employees across five locations. They are involved in a number of aspects of marine including vessel design, sustainability advisory, technology selection, port infrastructure, ship to shore power, structural design, advanced analysis and operation modelling.

Houlder presented to the forum the vessel design trends, focusing on existing vessels and new builds. It was noted that ships typically have a lifespan of 25 to 40 years, with significant emphasis placed on reducing carbon footprints. Challenges surrounding future fuels and energy consumption reduction were acknowledged as critical considerations for vessel design. Port infrastructure and the integration of shore power were identified as a major trend, with discussions around innovative solutions such as power barges and floating transport terminals. Additionally, transitioning from fuel oil to LNG (liquefied natural gas) and implementing dual-fuel systems to capture emissions were discussed as strategies to mitigate environmental impact. The importance of educating personnel on operating new systems and managing alternative fuels, including storage and bunkering, was emphasised.

Freight Forum group:	Aviation and Maritime sub-group | Rail sub-group | Road sub-group | Main group	HYDROGEN SOUTH WEST
Freight intervention:	A1 | M2 | RL3 | RD1	

Summary

Hydrogen South West is a collaboration of companies working to accelerate the transition to a hydrogen-based energy system in the region. The ecosystem comprises of leading brands to help deliver expertise and regional knowledge to present a formidable opportunity to accelerate the UK's transition to alternative power at scale.

Hydrogen South West presented to the forum their initiatives to accelerate the transition from fossil-based energy systems to hydrogen-based energy systems in the South West. They highlighted the challenges faced in the transition, particularly in the land transport sector. There is an emphasis on the need for data analysis to define hydrogen demand in land transport up to 2035 and explored potential collaboration with the South West Freight Forum to accelerate the transition. There is a particular focus on helping utility operators and construction companies navigate the changing landscape of vehicle procurement.

Freight Forum group:	Main group
Freight intervention:	RD1

Summary

National Grid lies at the heart of transforming energy systems to enable innovations to help revolutionise and decarbonise the future of energy. To ensure clean, fair and affordable energy, a strategy is in place to enable energy transition, deliver for customers efficiently, grow their organisational capability and empower people for great performance.

National Grid presented to the forum the challenges around enabling transition for all, sharing details of National Grid experiencing a 900 per cent increase in connection requests and associated timescales for these. National Grid has 10,000 vehicles, of which 1,600 of these are pure electric cars and around 500 commercial vehicles. National Grid face similar issues around the capability of alternatively fuelled vehicles to tow and to provide power for equipment, with limited options on offer. Future fuels need to be understood along with trials to see which perform best as part of a stepping stone process.

Freight Forum group:	Road sub-group
Freight intervention:	RD13

Summary

Newman Haulage is a South West based haulier providing crane transport and haulage services for the past 40 years. Based outside Saltash, Cornwall, they work with a wide range of local, regional, national and multinational companies to provide lifting and transport services.

Newman Haulage presented to the forum an overview of their operations and some of the key challenges facing the industry, including raising awareness about the Tamar Bridge. Discussions were made around the impact of toll costs on operators, particularly an issues for local hauliers and residents and their frequent use of the crossing. Further discussions are being had with ministers to further raise awareness around this. With limited routing options around this area, it potentially limits the movement of freight on this route.

Freight Forum group:	Main group
Freight intervention:	O3 | O8

Summary

UK Warehousing Association (UKWA) is the leading trade organisation for the warehousing sector, with over 900 Members. Full members include warehousing and logistics providers as well as manufacturers, retailers and wholesalers. Around 200 Associate members are suppliers of products and services to the logistics industry. UKWA has four pillar missions: talk about warehousing, raise industry standards, build community and help Members.

UKWA provided an overview of the association to the forum, which is celebrating its 80th anniversary in 2024. Warehousing has always been a part of logistics, where they have an industry buffer with stock to make transport more cost-effective. The warehouse could support more supply chain activity. Warehousing is seeing returns processed in warehouses, which incorporates activity like recycling, upcycling and repairs. In Savills' 2024 report, they highlight there are 40 million square feet of warehousing in the South West (6 per cent of the UKs total warehousing). This has nearly doubled since 2015. This has been driven by huge growth in online retail but also growth in warehousing in every part of the economy.

Freight Forum group:	Aviation and Maritime sub-group | Road sub-group | Main group
Freight intervention:	A4 | RD3 | O4

Summary

University of the West of England (UWE) Bristol is focused on solving future global challenges through outstanding learning, world-leading research and a culture of enterprise. This includes research projects established to 'co-produce' a methodology and outline a plan to decarbonise the freight system of South West England by 2050.

UWE presented to the forum an overview of the research they are involved with that impacts on the freight sector. This includes research on the future applications of drones. The GATES project aims to design an appropriate governance to enable drone technology to be used for delivery systems in the UK. The research explores the perspective of multiple stakeholders on aspects related to policy, planning, regulation, and practice to enable drones to be used for last-mile deliveries. Research has also been shared about the driver shortage issues in the freight sector and what is being done to help improve the situation. Around 33 implemented measures have been put in place, of which 17 of these were evaluated by UWE to understand their effectiveness in helping to improve driver shortages.

Freight Forum group:	Rail sub-group
Freight intervention:	RL4 | RL5

Summary

Varamis Rail exists to provide a viable alternative to decarbonising the logistics supply chain. Driven by the need for the logistics industry to reach net zero and the complexities around decarbonising long distance road haulage, Varamis provides the ultimate alternative for the UK and European supply chain. Through strategic access to urban rail stations located within the heart of city centres, Varamis is able to transport large amounts of volume quickly and efficiently between logistics centres and heavily populated cities as a complete end to end solution, with zero emission electric trains at its core.

Varamis Rail presented to the forum an overview of their operations and the expansion plans they have in place. The company's vision is to deliver a fully electric high-speed rail logistics service that focuses on lightweight, high-volume goods. They operate at speeds of up to 100 miles per hour and link purpose-built rail hubs directly into towns and cities. They have repurposed facilities, replicating the former Red Star parcels business model, taking advantage of existing infrastructure. The service is environmentally friendly, cost-effective, and quicker compared to road based alternatives. The first service established in January 2023 involved trains running five nights a week between Mossend and Birmingham International railway station. They are exploring future opportunities for trains running to the South West

Freight Forum group:	Road sub-group
Freight intervention:	RD8

Summary

The West of England Combined Authority was set up to make decisions and investments that benefit people living and working in Bath and North East Somerset, Bristol and South Gloucestershire. Together, the aim is to deliver economic growth for the region and address some of our challenges, such as productivity and skills, housing and transport.

WECA, alongside consultants WSP, presented to the forum the Urban Freight Trial Programme: Parcels as passengers. The programme of trials aim to generate case studies, impact evaluations, practical guides/tools and knowledge sharing. The Parcel as Passengers trial links directly to the South West Freight Strategy and International Gateway Study. The aim of the trial is to utilise unoccupied space on long-distance coaches, a proof-of-concept, replacement for dedicated long distance courier vans. It involves the use of e-cargo bikes for zero emission first and last-mile deliveries. The benefits include fewer emissions, reduced congestion and diversification of commercial coach services. The challenges include communications to ensure all partners are informed and in the correct location and whether the system can cope with variations in ad-hoc and regular goods movements.

3.4 Conclusion

The South West Freight Forum has seen great engagement from industry. As can be seen from the variety of guest speakers, the forum has had a wide reaching spread of topics across a number of different sectors in order to help inform and advance the freight interventions that were featured.

Not only has the forum helped to update members on the progression of the freight interventions, but the forum has also heard a number of interesting presentations throughout the 12 Freight Forum sessions during Year 2. These have included updates on practical freight interventions that are being progressed such as the backloading trial to welcoming local hauliers to the forum and grasping an understanding of the key challenges facing hauliers. The forum has also had the opportunity to listen and engage with leading organisations that are part of the decarbonisation agenda.

One of the key aims of the forum is to bring people and organisations together and to allow them to connect. The forum has witnessed this on a number of occasions, which has led to further engagement and collaboration. This is supported by feedback received from members claiming the value and importance of this forum as part of sharing knowledge and an opportunity for networking.

The variety of guest speakers and topics covered has provided value to members for the time they put into attending. The Freight Forum has been responsive to feedback, harnessing how it can be improved further to ensure it remains of value and relevant.

3.5 Next steps

The next steps will be to continue the progress of the South West Freight Forum into Year 3 of the implementation phase of the South West Freight Strategy. The topics and variety of guest speakers will continue to be developed ensuring the level of interest is kept high and to further enable the freight interventions to be developed.

The Freight Forum continues to welcome feedback and it is recommended that members get in touch on ways the forum can be further improved. The forum welcomes individuals and organisations to join the forum to ensure their thoughts are shared. Peninsula Transport and Western Gateway encourages forum members to explore their networks and encourage their peers to join the South West Freight Forum so it can keep evolving.

4. M1 – Modal shift to maritime

Maritime intervention – M1	
Intervention name	Coastal feeder services to help remove road vehicles
Intervention description	Include feasibility for coastal feeder vehicles to help move freight from road to maritime.
Theme	Decarbonisation
Timescale	Short term
Intervention owners	Ports and Sub-national Transport Bodies – Peninsula Transport and Western Gateway

Progress to date	Key information for ports in the South West was extracted from the WP12 International Gateway Study and put into dashboard documents. These will be placed onto the South West Freight Strategy website to enable easier access to the information. Additionally, a study was completed into the coastal shipping opportunities by looking at the road freight data from the DfT and determining suitable commodities that could be moved by ship. The findings from the data in tonnage were converted into an estimated number of vessels that would be needed to transport that level of goods. It gives a theoretical indication of the addressable market. In reality, the actual level of modal switch from road to water freight will be less than that depending on the relative economics and various other operational factors. Even if just one 5,000 tonne ship movement takes place it would typically remove 200 HGVs from the road. This assumes a 25 tonne load on average. This mode shift would make a major difference to traffic levels particularly on the M5. What is clear is that there is potential volume of over a vessel a week in each direction to both the Port of Bristol and Sharpness (for Gloucestershire) if the tonnage can be marshalled into viable loads. Hence it is worthy of further investigation perhaps in conjunction with Maritime South West.
Next steps	Further explore opportunities to move more goods by maritime.

4.1 Introduction

Intervention M1 in the South West Freight Strategy aims to help raise awareness of the key ports around the South West, their operational characteristics, and their key opportunities through a series of port dashboards. This in turn has helped to develop a theoretical study in order to understand the tonnage of certain selected commodities that currently move by road that may be suitable to be transported by water to and from ports in the South West, as well as to and from the Port of Southampton. This can help inform whether there is an addressable market for possible modal shift to water freight from road in the South West which could contribute to the wider decarbonisation of the region. One 5,000 tonne vessel can replace circa 200 HGV movements from the road making a difference on emissions, congestion and safety.

4.2 Methodology

4.2.1 Port dashboards

4.2.1.1 International Gateway Study

Information on ports in the South West was obtained from the International Gateway Study[3]. The purpose of the port dashboards was to draw out the key information from the study so that it was easily accessible to stakeholders, meaning they could have access to information about the port. This includes a description, the markets they access, amount of goods moved, type of goods moved, connections, investments and a SWOT analysis. The individual dashboards for each of the ports will then be accessible on the Peninsula Transport and Western Gateway websites.

4.2.2 Modal shift to coastal shipping opportunity

4.2.2.1 Continuous Survey of Road Goods Transport (CSRGT) data and commodities in scope

The Department for Transport (DfT) collects data on the activity of GB-registered HGVs (vehicles weighing 3.5+ tonnes) operating in the UK through its ongoing survey. The survey is usually based upon a stratified random sample of vehicles per week. The operator of the HGV is asked to provide details of all domestic trips undertaken by that vehicle during a one-week period. The survey data is then grossed up to the GB-registered HGV population through grossing factors calculated using population data for HGVs, from DVLA licensing records.

The data was requested from the Road Freight Stats team at the DfT and the information they require for their sortation includes the origin and destination zones. These zones are based on Nomenclature of Territorial Units for Statistics (NUTS), which is a geocode standard operated by Eurostat. 2019 data was requested to avoid the data being impacted by external factors from Covid and the economic downturn that took place.

Nine of the commodity groups included within the CSRGT have been identified as being the most suitable for transportation by water freight. These commodities (using simplified descriptions) are:

- Products of Agriculture
- Chemicals
- Coal and Lignite
- Coke and Refined Petroleum
- Metals
- Products of Mining and Quarrying
- Non-metallic Mineral Products
- Waste Products
- Wood Products

As there was no Coal and Lignite tonnage included in the figures analysed, only the other eight commodities are included in the analysis section.

For the purposes of analysis, all tonnage for the respective commodities that is outbound from or inbound to the chosen CSRGT regions is included to consider potential in both directions.

[3] https://www.peninsulatransport.org.uk/wp-content/uploads/2023/07/International-Gateway-Study_Final-Submission.pdf

4.2.2.2 Ports in scope

Three locations for goods that could use the Bristol Channel have been considered as potential sites for goods transported by water freight in the south west to begin or end their journeys. These are:

- Port of Bristol
- Gloucestershire (Sharpness Docks)
- West Midlands (This will ultimately require road transport from a port such as Sharpness Docks, however this region is included in analysis to demonstrate the potential market that exists). This latter market could also be a potential market for rail freight although this analysis is not covered in this section

As identified in WP12 International Gateways Study for the South West[4], there are seven significant, commercial sea ports in the south west. One of these is the Port of Bristol, which is included as one of the potential destinations and therefore movements connecting the Port of Bristol, Gloucestershire and the West Midlands are not considered. In order to fit with CSRGT regions, the following six ports have been combined into the following groupings in addition to the Port of Southampton.

- Ports in Devon (Plymouth and Teignmouth)
- Ports in Cornwall (Falmouth and Fowey)
- Ports in Dorset (Portland and Poole)
- Solent (Port of Southampton)

CSRGT data for ports in the Peninsula Transport STB region, as well as data for the Solent region, covering journeys to and from Bristol and Gloucestershire were included as part of a wider region called 'Gloucestershire, Wiltshire and Bristol/Bath area'. Therefore, factors have been applied to estimate the proportion of tonnage in this wider zone that can be attributed to Bristol and Gloucestershire. Based on Freight and Fleet Team knowledge, it is assumed that 30 per cent of tonnage for this region can be attributed to Bristol and 20 per cent can be attributed to Gloucestershire. As data for ports in the Western Gateway STB region separates Bristol and Gloucestershire, there is no need for these factors to be applied.

4.2.2.3 Tonnage assumptions

For the purposes of this analysis it is assumed that a vessel can carry 5,000 tonnes of goods in a single one-way leg. Clearly there is a full range of coasters and barges able to transport various weights but for the purposes of producing a baseline it was decided to keep the calculations fairly simple. Therefore, to get the number of vessels, tonnage is divided by 5,000 and then rounded up to the nearest whole vessel. The figure of 5,000 tonnes is broadly in line with the capacity of vessels that can use Sharpness (6,000 tonnes[5]). Even though the port of Bristol can handle vessels that can carry up to 130,000[6] most other Ports in the south west in the scope of this study are unable to handle the very large ships at the other end of each journey leg.

When tonnage is calculated, for the purposes of this study it is assumed that each commodity will be transported on a separate vessel. Lots of coasters do have separate hatches and compartments, and hence may be able to handle more than one commodity but complications such as is the handling equipment compatible and ensuring there are covers over commodities like grain means this can be difficult in some circumstances.

It is important to note that this study is indicative, and there will be several other factors that will determine the addressable market for water freight transport in the South West to and from particular ports and for particular commodities. However, it is still useful to consider whether potential demand exists and what commodities this is made up from.

4.2.2.4 Gloucester Docks

Gloucester Docks is an inland port connected to Sharpness by a canal which used to carry freight in the 20th Century, including vessels carrying grain as recently as 1998[7]. More recently, in 2005, Thompson River Transport was transporting sand and gravel between Ripple and Ryall House Farm Quarries on behalf of CEMEX[8][9]. It was intended that

[4] https://www.peninsulatransport.org.uk/wp-content/uploads/2023/07/International-Gateway-Study_Final-Submission.pdf

[5] https://www.victoriagroup.co.uk/about-us/sharpness-dock/

[6] https://www.bristolport.co.uk/about-us/bristol-port-company-today

[7] https://www.gloucesterdocks.me.uk/vessels/vessels.htm

[8] http://e-planning.worcestershire.gov.uk/swift/MediaTemp/641-17775.pdf

[9] https://logistics.org.uk/CMSPages/GetFile.aspx?guid=47311d21-c8ec-43dc-8db1-acba3abc2e76&lang=en-GB

processed aggregates would be transported via Gloucester Docks between CEMEX's Ryall Plant and a ready mix concrete plant south of Gloucester[10], however at the time of writing no evidence could be found that these movements occurred.

Whilst only movements as far as Sharpness are considered as part of this study, it may be in the future that freight movements to Gloucester Docks could be reinstated, and shorten the road leg for movements within Gloucestershire as well as to/from the West Midlands.

4.3 Findings

4.3.1 Port dashboards

The port dashboards were compiled for a number of ports in the South West. These include:

- Bristol
- Falmouth
- Fowey
- Plymouth
- Poole
- Portland
- Teignmouth

The dashboards are available on the Peninsula Transport and Western Gateway websites.

Figure 4-1: Port dashboards

4.3.2 Modal shift to coastal shipping opportunity

The following section shows the goods by commodity if the road movements are converted to 5,000 tonne vessels for outbound and inbound to South West ports by county. At the end of this section, the totals of all the commodities are shown.

- Products of Agriculture
- Chemicals
- Coke and Refined Petroleum
- Metals
- Products of Mining and Quarrying
- Non-metallic Mineral Products
- Waste Products
- Wood Products

4.3.2.1 Agriculture

Figure 4-2 and Figure 4-3 shows the agricultural tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from Devon and Plymouth to the West

[10] http://e-planning.worcestershire.gov.uk/swift/MediaTemp/641-17775.pdf

Midlands, the equivalent of 53 vessels in the year. The flow of agricultural produce from Dorset to Gloucestershire is noteworthy. The largest inbound flow was from the West Midlands to Devon and Plymouth, equivalent to 72 vessels.

Figure 4-2: Agricultural tonnage outbound from the South West converted to vessels

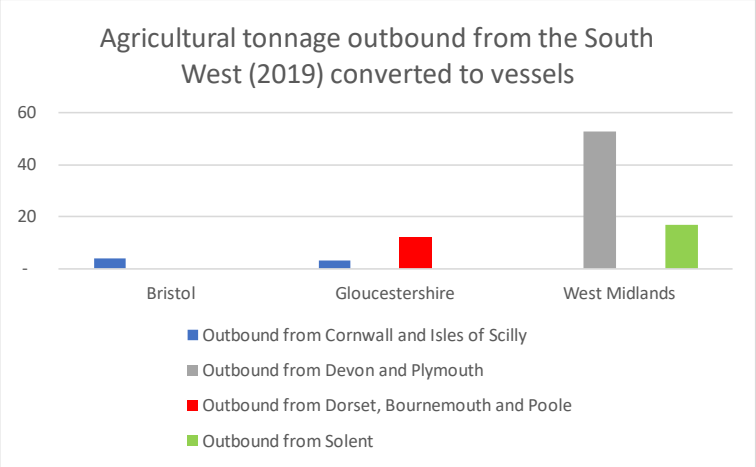
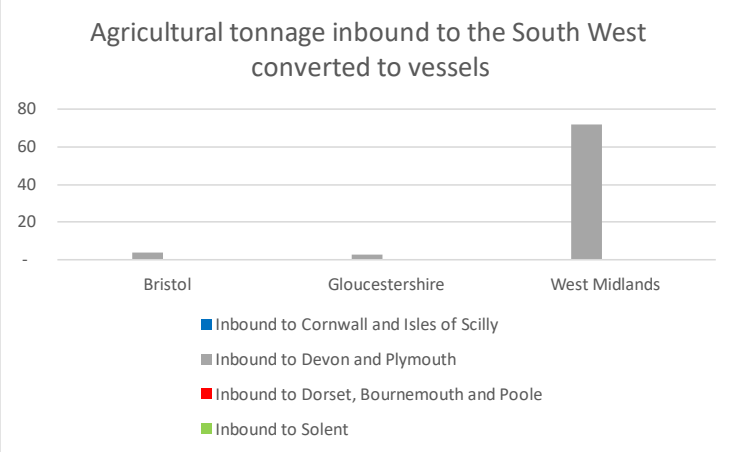


Figure 4-3: Agricultural tonnage inbound to the South West converted to vessels



4.3.2.2 Chemicals

Figure 4-4 and Figure 4-5 shows the chemicals tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from the Solent to the West Midlands, the equivalent of 43 vessels. The largest inbound flow was from the West Midlands to the Solent, equivalent to 41 vessels.

Figure 4-4: Chemicals tonnage outbound from the South West converted to vessels

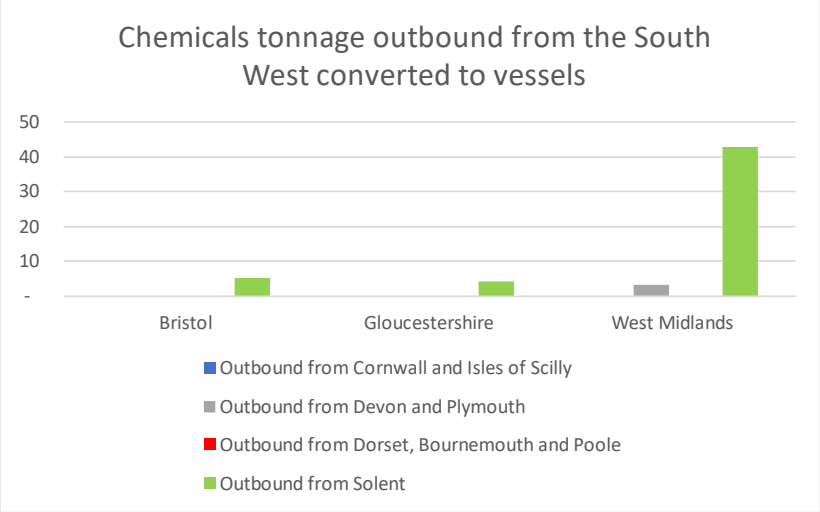
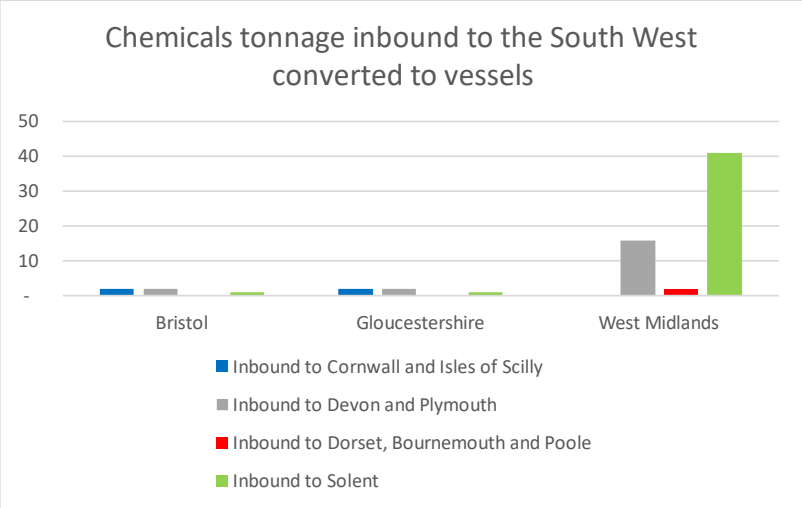


Figure 4-5: Chemicals tonnage inbound to the South West converted to vessels



4.3.2.3 Coke and Crude Petroleum

Figure 4-6 and Figure 4-7 shows the Coke and Crude Petroleum tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest and only outbound flow was from the Solent to the West Midlands, the equivalent of nine vessels. The largest inbound flow was from Bristol to Dorset, Bournemouth and Poole, equivalent to 12 vessels.

Figure 4-6: Coke and Crude Petroleum outbound from the South West converted to vessels

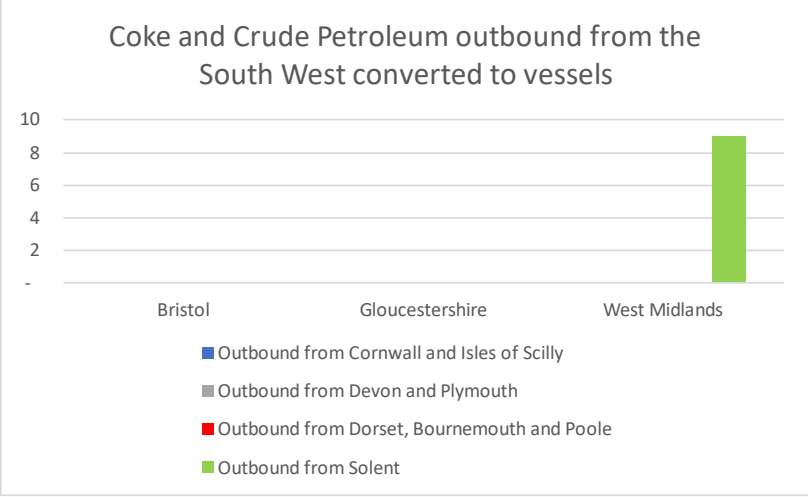
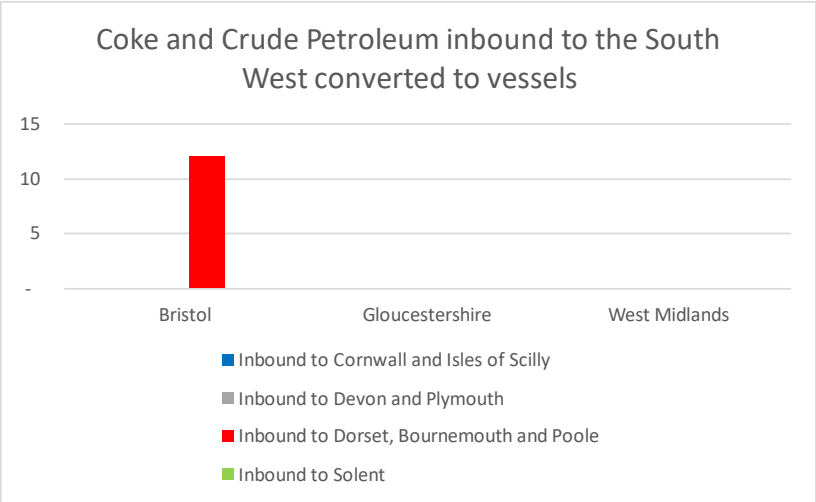


Figure 4-7: Coke and Crude Petroleum inbound to the South West converted to vessels



4.3.2.4 Metals

Figure 4-8 and Figure 4-9 shows the metals tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from Devon and Plymouth to the West Midlands, the equivalent of nine vessels. The largest inbound flow was jointly from Bristol to the Solent and the West Midlands to Devon and Plymouth, each equivalent to 10 vessels.

Figure 4-8: Metals outbound from the South West converted to vessels

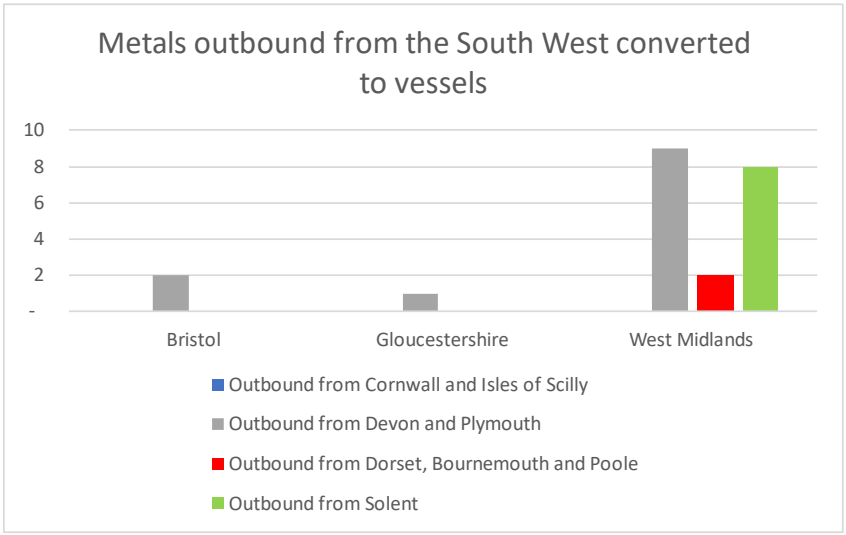
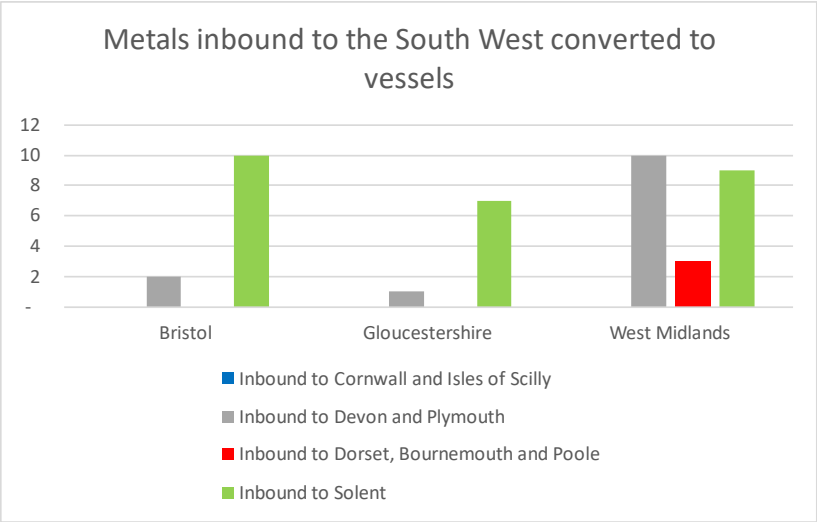


Figure 4-9: Metals inbound to the South West converted to vessels



4.3.2.5 Mining and quarrying

Figure 4-10 and Figure 4-11 shows the mining and quarrying tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flows were from Dorset, to the West Midlands and to Bristol, the equivalent of 38 and 25 vessels respectively. The largest inbound flow was from the West Midlands to Devon and Plymouth, equivalent to nine vessels.

Figure 4-10: Mining and quarrying outbound from the South West converted to vessels

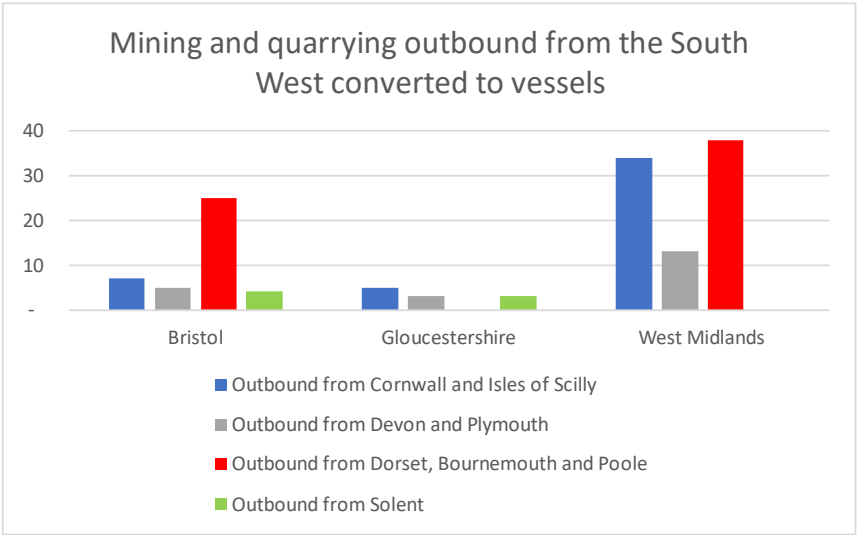
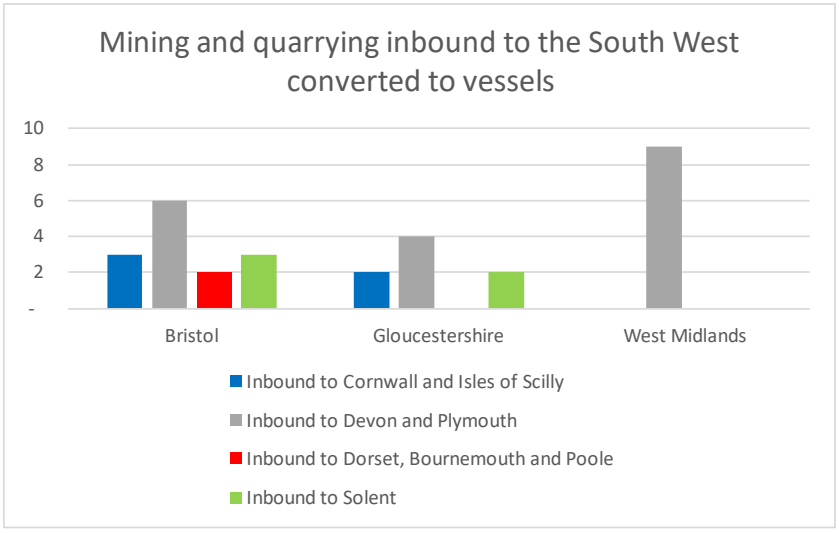


Figure 4-11: Mining and quarrying inbound to the South West converted to vessels



4.3.2.6 Non-metallic minerals

Figure 4-12 and Figure 4-13 shows the non-metallic minerals tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from Dorset to Gloucestershire, the equivalent of 11 vessels. The largest inbound flow was from Gloucestershire to Dorset, equivalent to 19 vessels.

Figure 4-12: Non-metallic minerals outbound from the South West converted to vessels

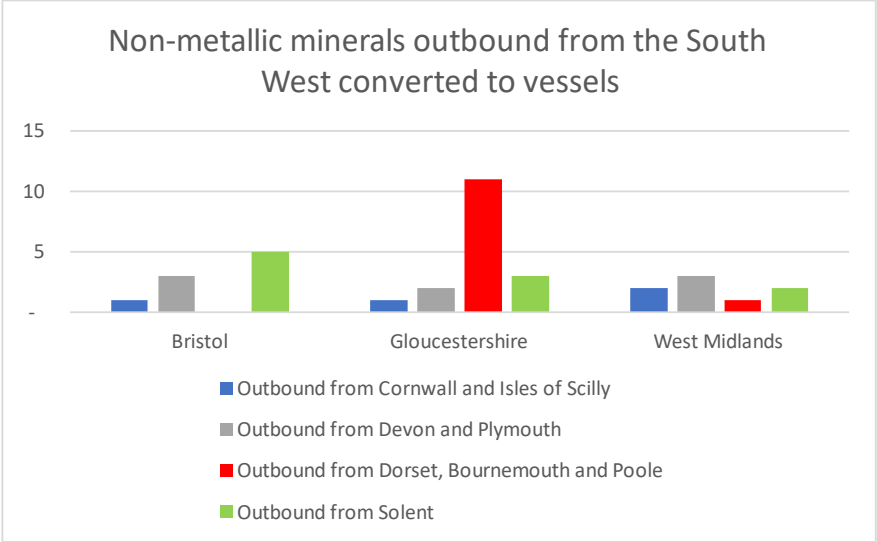
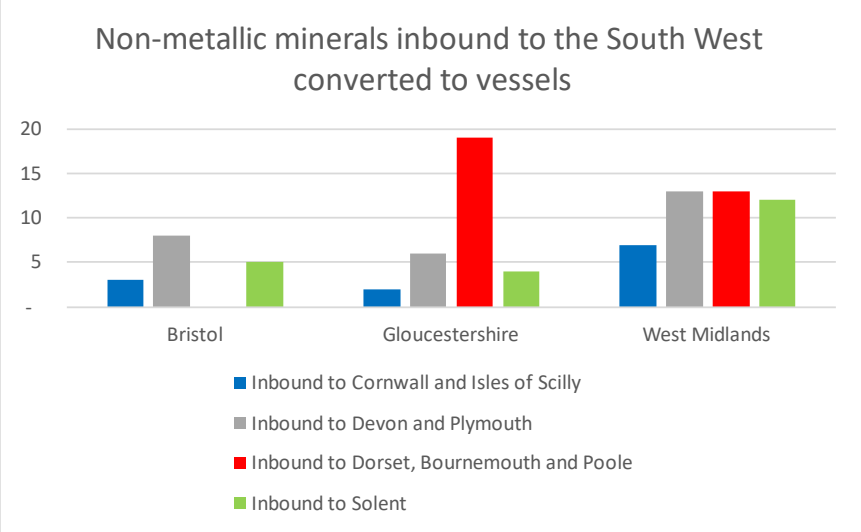


Figure 4-13: Non-metallic minerals inbound to the South West converted to vessels



4.3.2.7 Waste

Figure 4-14 and Figure 4-15 shows the waste tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from Devon and Plymouth to Bristol, the equivalent of 51 vessels. The largest inbound flow was from the West Midlands to the Solent, equivalent to 26 vessels.

Figure 4-14: Waste outbound from the South West converted to vessels

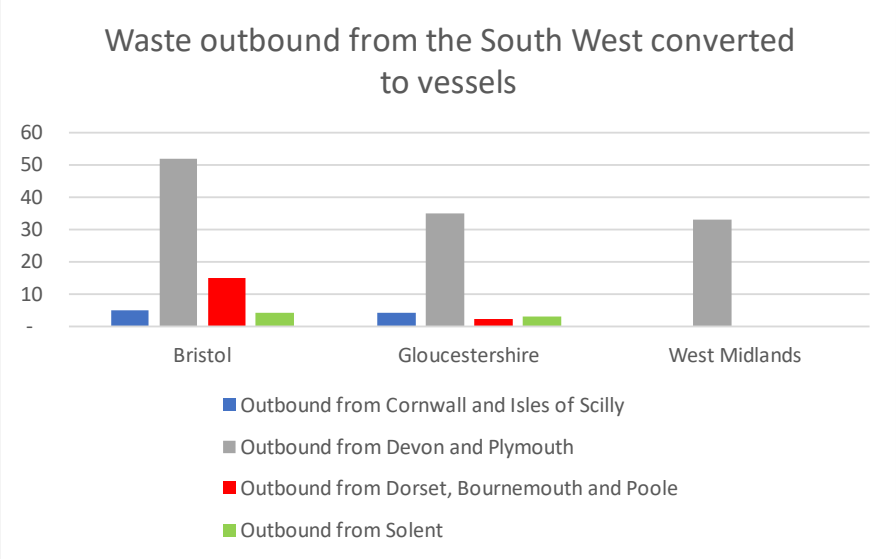
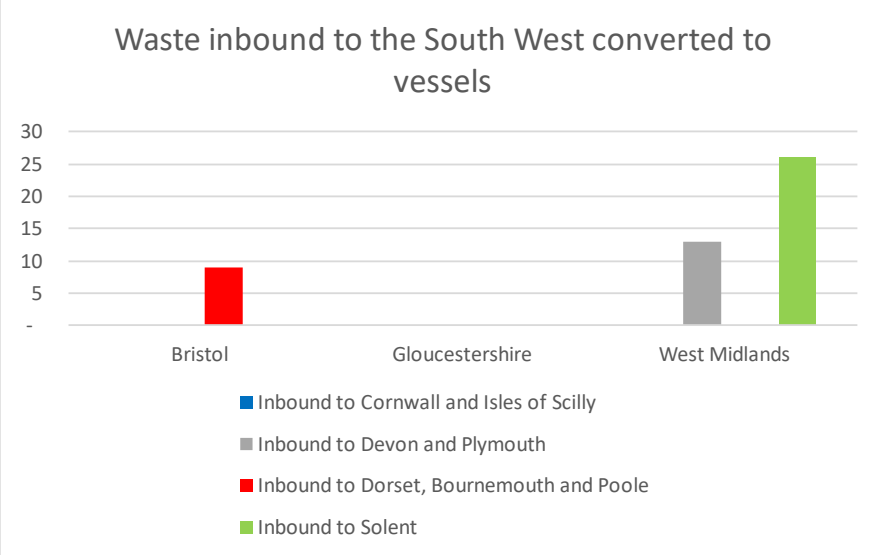


Figure 4-15: Waste inbound to the South West converted to vessels



4.3.2.8 Wood

Figure 4-16 and Figure 4-17 shows the wood tonnage outbound and inbound from the South West (2019) when converted to 5,000 tonne vessels. This shows that the largest outbound flow was from Devon and Plymouth to the West Midlands, the equivalent of 41 vessels. The largest inbound flow was from the West Midlands to the Solent, equivalent to eight vessels.

Figure 4-16: Wood outbound from the South West converted to vessels

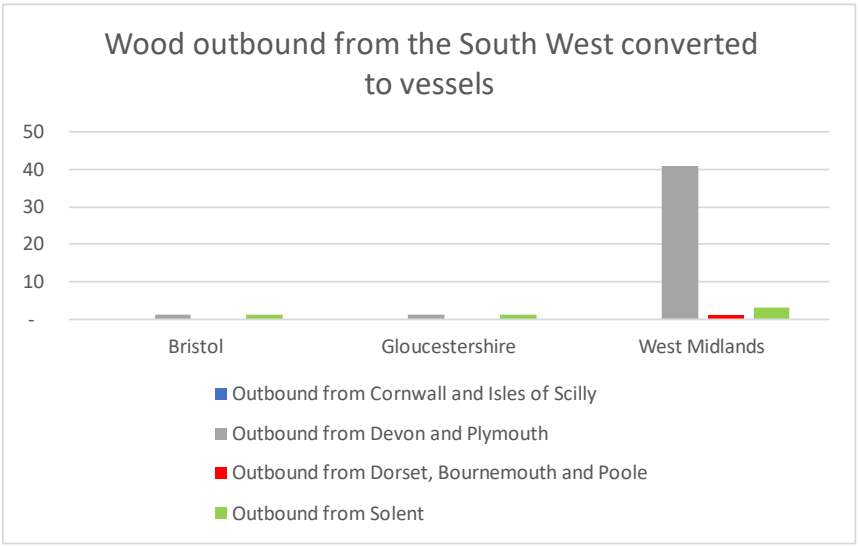
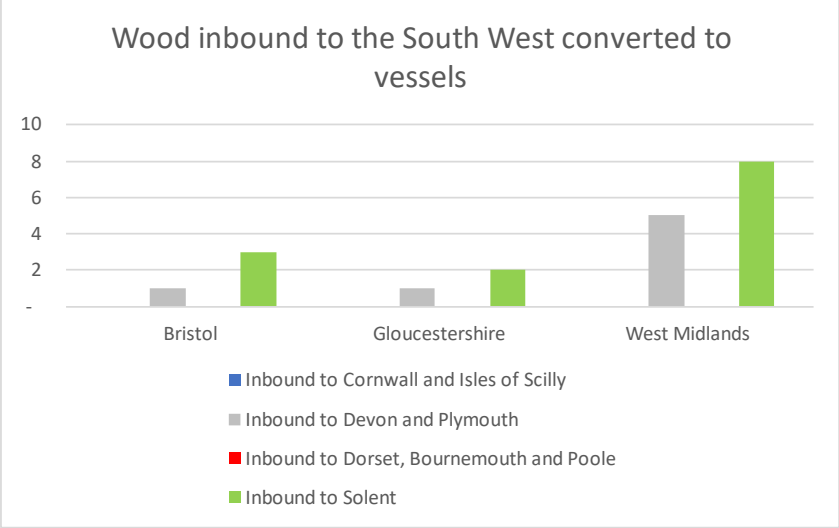


Figure 4-17: Wood inbound to the South West converted to vessels



4.3.2.9 Totals

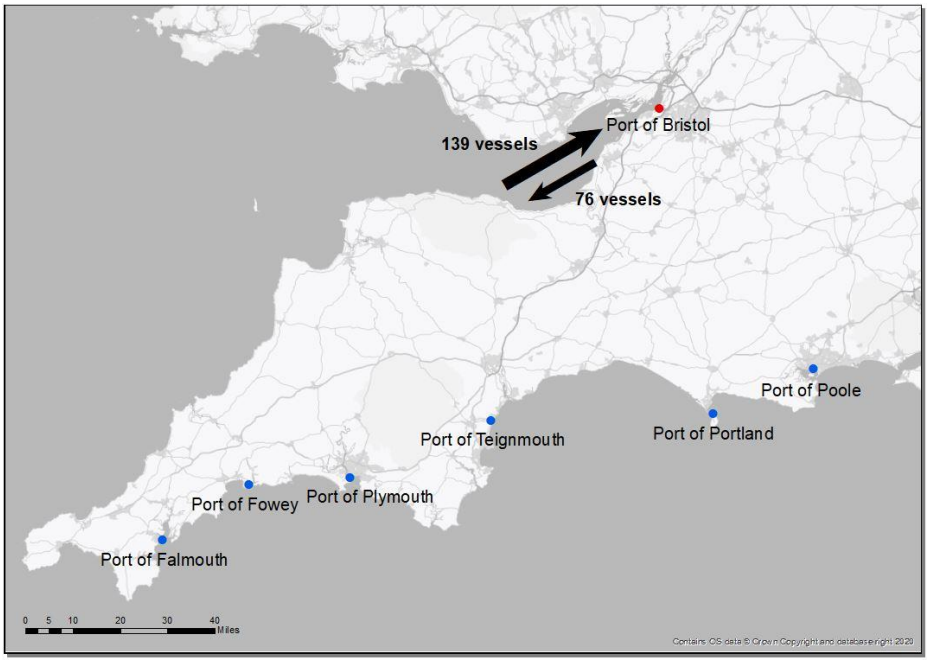
Table 4-1 shows the total vessels outbound from and inbound to the South West. This shows that totals for the West Midlands were highest, followed by Bristol and then Gloucestershire.

Table 4-1: The total vessels outbound from and inbound to the South West

	Estimated vessels from South West ports to:	Estimated vessels to South West ports from:
Bristol	139	76
Gloucestershire	94	58
West Midlands	315	259

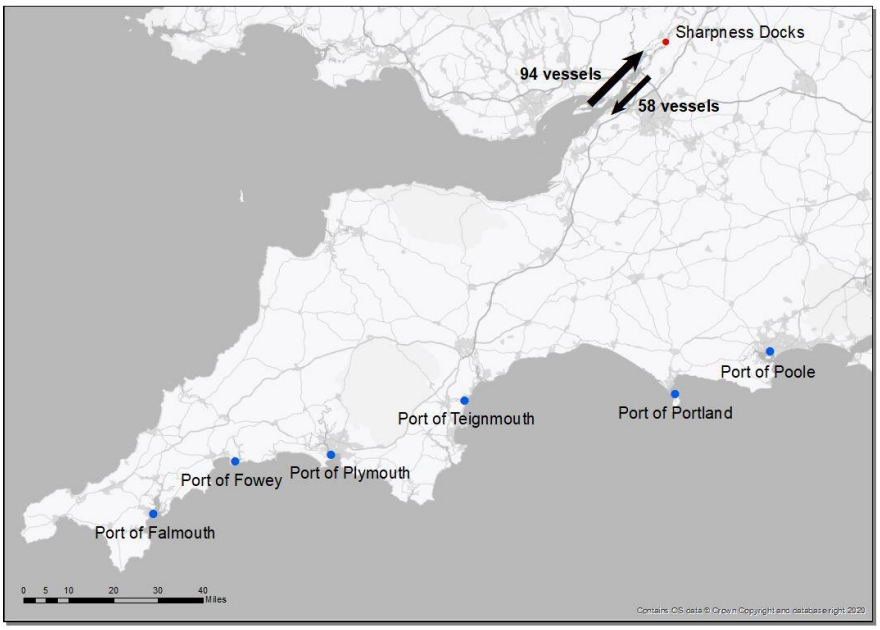
When all commodities analysed are added together, it is estimated there are the equivalent of 139 5,000 tonne vessels flowing to the Port of Bristol per year and 76 flowing from the Port of Bristol. This is shown in Figure 4-18.

Figure 4-18: Annual tonnage to/from Port of Bristol when converted to vessels



Additionally, when all commodities analysed are added together, it is estimated there are the equivalent of 94 5,000 tonne vessels flowing to Gloucestershire per year and 58 flowing from Gloucestershire. This is shown in Figure 4-19 and does not include indicative onward flows to/from the West Midlands.

Figure 4-19: Annual tonnage to/from Sharpness Docks when converted to vessels



4.4 Conclusions

For the port dashboards, it has helped to make information on ports more readily available to help inform stakeholders. This could provide opportunities on how the ports throughout the South West could be better utilised to help move freight away from road and onto water. This has helped support the work of the modal shift study. This theoretical analysis has been done to show if there are movements of various products that could be handled on coasters or barges moving between the South West counties and Bristol, Gloucestershire and theoretically potentially the West Midlands. The latter geographical region is more likely to best be served by new rail freight flows as there is no navigable waterway for large commercial vessels to reach the Birmingham area. If any modal switch from road to water can be achieved, this could bring environmental benefits as one 5,000 tonne vessel can replace circa 200 HGV movements off the road making a difference on emissions, congestion and safety.

What is clear is that there is potential volume of over a vessel a week in each direction to both the Port of Bristol and Sharpness (for Gloucestershire) if the tonnage can be marshalled into viable loads. One of the issues across the region is that we do not know how close the tonnage from Dorset is to the ports such as Poole or Portland, and hence this needs consideration on a case-by-case basis. Due to the cost of transhipping West Midlands goods from ship to road in Gloucestershire, it may not be economical to conduct this modal shift and hence the West Midlands volume needs to be left out of the overall vessels total.

4.5 What next?

Overall, the study has examined the potential flows that could be moved from road to water. Further investigation should take place on the six commodity groups most suitable for modal shift and engage with stakeholders to understand the scale of opportunity. The most likely commodities include:

- Products of Agriculture
- Coke and Refined Petroleum
- Metals
- Products of Mining and Quarrying
- Non-metallic Mineral Products
- Waste Products

This should include engaging with Local Authority members to understand their local issues and how this work could benefit them, The intervention could be developed further in conjunction with Maritime UK South West and the opportunities they identify.

5. RL1, RL7 and RL8 – Modal shift to rail

Rail intervention – RL1 RL7 and RL8	
Intervention name	RL1: Develop the elements needed to operate a multimodal train based on Imerys interest and other possible volume. RL7: Encourage the establishment of rail freight intermodal sites in the South West. There are various possible locations to give regional coverage for example Bodmin/Burngullow, Bridgwater, Bristol, Exeter/Newton Abbot, Plymouth, Poole and Westbury. RL8: Finalise the list of sites suitable for rail freight terminals.
Intervention description	RL1: Include how more road freight can be moved by rail to its destination for last mile logistics. There should be at least three to four intermodal terminals in the South West, see intervention RL7. RL7: Identify rural and urban sites, demand generator areas, sites with connections to ports and bring back online key existing sites. Potential locations should include sites in a catchment area of one hour travel time by HGV and consideration required for vehicle access needs. RL8: Include adequate land in urban and industrial areas to promote rail freight consolidation along with how sidings on the network could be adapted to support intermodal rail freight.
Theme	Connectivity and infrastructure
Timescale	RL1: Short term RL7: Long term RL8: Medium term
Intervention owners	Network Rail, Freight Operating Companies, Sub-national Transport Bodies – Peninsula Transport and Western Gateway and Local Authorities

Progress to date	There have been significant updates within the last year in relation to the potential for new services and the development of terminals. Examples include the progress that has been made at Gloucester Yard, Poole Harbour and Exeter Riverside which have all moved closer to seeing the commencement of services, Stakeholder engagement confirms that operators feel that services running to and from the South West are considered viable. However, there are some reservations about aspects such as route clearance, trailing weight limits and addressable market for some locations.
Next steps	To identify and target potential customers / operators, and work with them to fully realise the potential of rail freight in the region and identify potential terminal sites. Encourage and support local authorities in making reference to shortlisted sites when developing or refreshing local plans, and checking land allocation. Where sites are getting close to facilitating the operation of new rail services, ensure liaison between Network Rail and local authorities to make sure these priority sites are safeguarded including any potential expansion land. Once terminals are operational and services introduced, this will help with the wider aim of reducing congestion and the impact of the freight sector on the environment.

5.1 Introduction

Interventions RL1, RL7 and RL8 in the South West Freight Strategy aim to understand the level of interest for operating a multimodal train in the South West, along with encouraging the establishment of an intermodal rail freight terminal. These interventions also consider the identification of a number of suitable sites that could help encourage modal switch from road to rail. Details of the interventions helping to progress this agenda are shown below. Multimodal freight requires several forms of transportation to complete a journey (for example a rail leg and a road leg)[11], whilst intermodal freight conveys goods inside standard load units, for example containers or swap bodies[12].

- RL1: Develop the elements needed to operate a multimodal train based on Imerys interest and other possible volume.
- RL7: Encourage the establishment of rail freight intermodal sites in the South West. There are various possible locations to give regional coverage for example Bodmin/Burngullow, Bridgwater, Bristol, Exeter/Newton Abbot, Plymouth, Poole and Westbury.
- RL8: Finalise the list of sites suitable for rail freight and get them agreed.

This section shows the progress made on the above interventions for the South West Freight Strategy. Progression on these has come from desktop research activities and engagement with stakeholders, as shown in the methodology.

5.2 Methodology

A summary breakdown of the activities that took place as part of these interventions is shown below.

5.2.1 RL7/RL8

The initial stage was to review the potential terminals that were identified as part of the full Freight Strategy and note whether any sites should be removed or added in order to get the final shortlist. A call was also undertaken with Great British Railways Transition Team (GBRTT) and following this, four sites were added and updates provided. The four sites added were Poole Harbour, Winfrith, Hackney Yard and Meldon Quarry.

Local plans and associated documentation from the relevant local authorities were reviewed to ascertain if any of the sites had been considered.

In some cases, additional information was received from Local Authorities on terminals which was added to the above analysis.

5.2.2 RL1

The next step was to consider the work completed that related to rail commodities for the full South West Freight Strategy. This helped to give an indication of the opportunities that existed for creating more demand for rail freight.

Once this was completed, some of the most likely customers were identified. These were minerals firm Imerys and supermarkets, Tesco and Sainsburys. These were chosen because of either their proximity to the South West or known high volumes of freight moved or identified potential growth within the region. From this, calls were arranged with senior representatives from Russell Logistics, Maritime Transport (to cover the intermodal sector, including supermarket goods) and Imerys.

Sample routings were mapped as part of a brochure that was developed which looked at the possibility of rail expansion in the South West and used to inform the stakeholder discussions. Stakeholders were also shown the terminals sites shortlisted as part of RL8.

5.3 Desktop research and stakeholder engagement

5.3.1 RL7/8 – potential sites

As part of the South West Freight Strategy Year 1 monitoring report, 13 potential sites for rail freight development were identified. In addition, from stakeholder engagement, four additional sites were identified (Plymouth Friary, Winfrith,

[11] https://logistics.dbcargo.com/logistics-en/expertise/multimodal-rail-logistics

[12] https://www.networkrail.co.uk/wp-content/uploads/2023/03/International-Rail-Freight-Opportunities-for-Growth.pdf

Meldon Quarry and Hackney Yard (Newton Abbott). Overall, these form the initial shortlist of 17 sites for potential consideration for development. The site locations are shown as part of Figure 5-1 below.

Figure 5-1:Shortlisted 17 sites for potential development as rail freight terminals in the South West

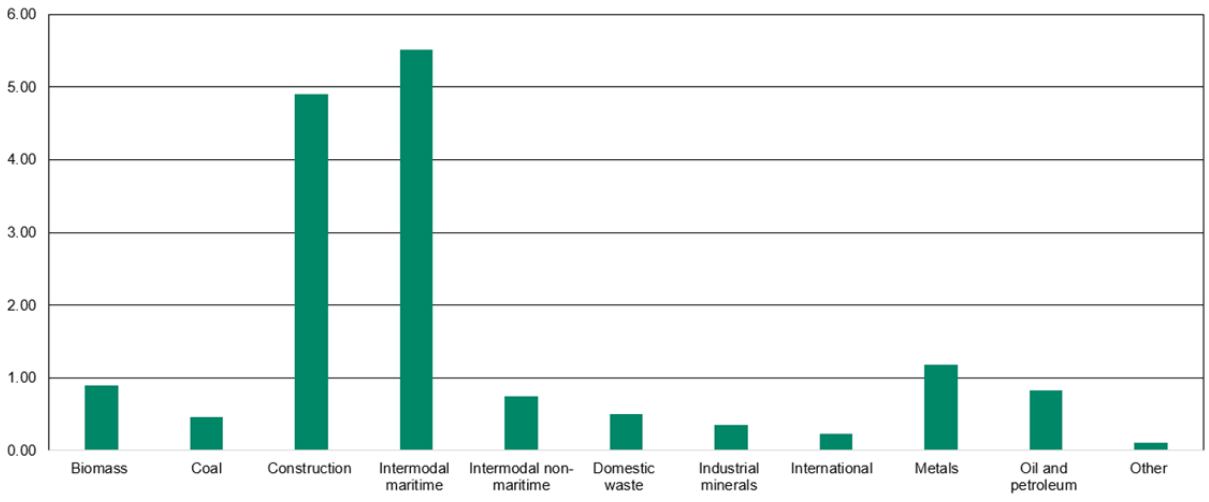
For each of the above, neighbourhood plans have been analysed to see if there is any direct mention of safeguarding sites for rail freight terminals. In addition, a call was made with GBRTT. Summaries of this analysis are provided in Appendix 2.

5.3.2 RL1 – Identification of commodities and potential customers

For this study, engagement was held with minerals firm Imerys as well as indirectly with the consumer goods / supermarket sectors via Russells and Maritime Transport.

Figure 5-2 shows the freight moved by commodity between April 2022 and March 2023. This shows how construction and intermodal were responsible for the majority of commodities moved across the UK rail network. This reinforces why Imerys, and organisations such as Tesco and Sainsburys were highlighted as being potential customers. They all use rail freight in the UK already and hence know its capabilities.

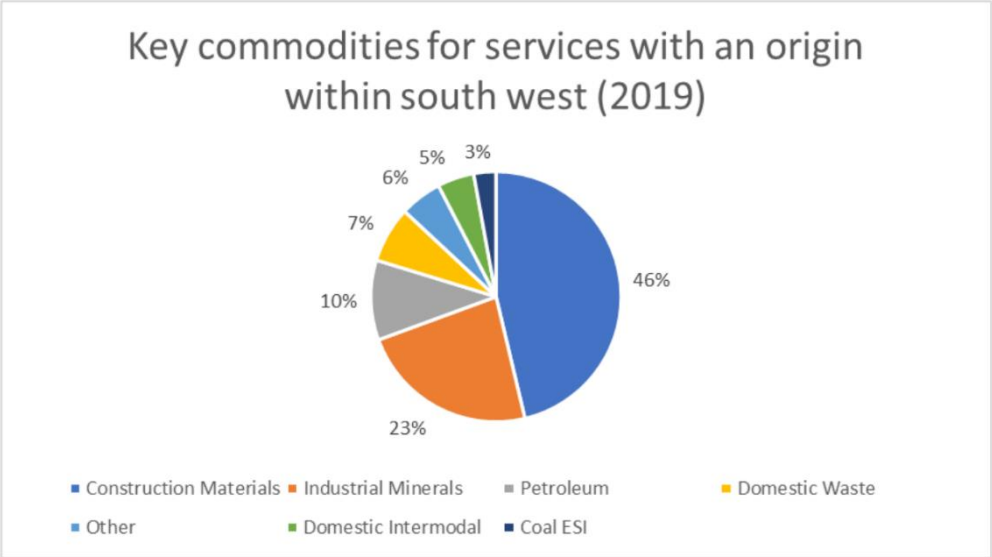
Figure 5-2: Freight moved by commodity April 2022 – March 2023 (billion net tonne kms)



In addition, as part of the full South West Freight Strategy, an investigation was undertaken into the key commodities for services that originated in the South West. This is reproduced as Figure 5-3 below. Construction materials, with 46 per

cent and Industrial Minerals, with 23 per cent, had the highest percentages. This shows why the movement of bulk materials such as by Imerys is suitable for extra volume, especially as they already transport china clay by rail.

Figure 5-3: Key commodities for services with an origin within the South West (2019)

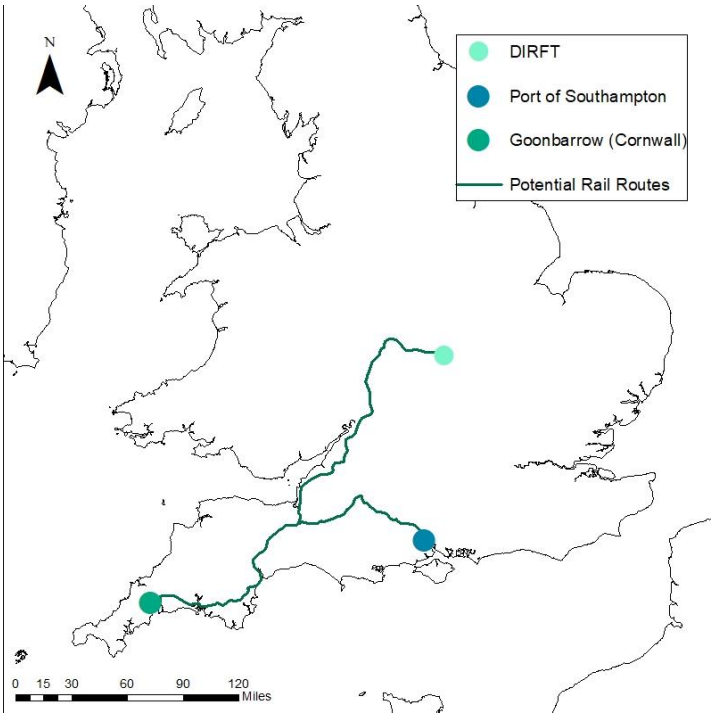


Other key reasons that the chosen potential customers are suitable include:

- The South West Freight Strategy also notes that Imerys are already sending 20ft-30ft china clay boxes to the Port of Southampton, and there is “significant scope” for running imported goods or supermarket products the other way.
- For supermarket products, Tesco already run successful services to South Wales and up to Scotland, and the South West is not too dissimilar in terms of geography. There is also a significant distance between regional and national distribution centres at Bristol and Daventry. There may also be the ability to back load from local suppliers, for example Ginsters at Callington and Rodda’s Clotted Cream at Redruth. These latter companies were not contacted for this exercise but Ginsters were contacted as part of the original South West Freight Strategy.
- For minerals, two separate flows are already operated for Imerys by DB Cargo, running a service to Cliffe Vale in Stoke and also from Goonbarrow to Fowey. Therefore, any future services would be able to complement these existing flows.

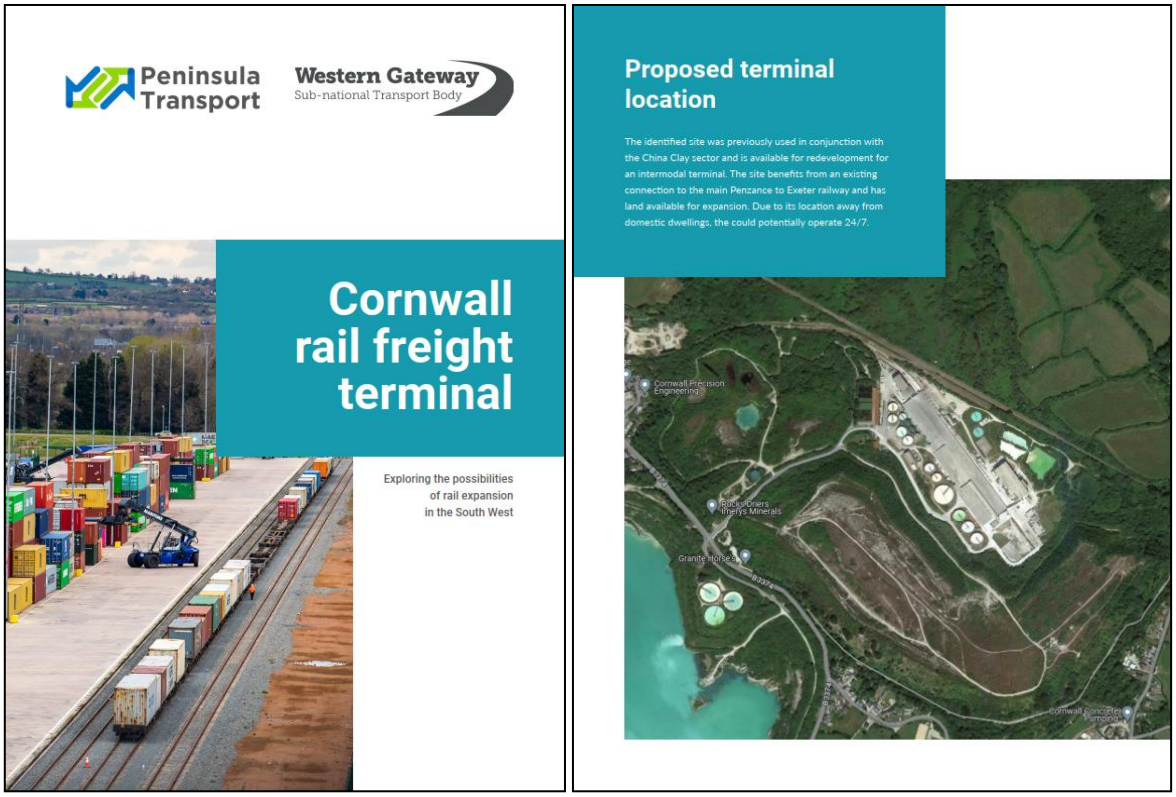
Following the above analysis, Figure 5-4 was developed in order to demonstrate potential flows and to help guide discussion with stakeholders. This shows a terminal in the South West at Goonbarrow in Cornwall, one of the RL7/RL8 shortlisted sites, connecting to the Midlands and Southampton.

Figure 5-4: Map demonstrating potential flows to the South West



A brochure could be developed which looks at exploring the possibilities of rail expansion in the South West. This should outline the case for additional terminals in the South West, including the benefits, concept and showing the Goonbarrow location. Figure 5-5 shows the front page of this example brochure that could be produced to help market the opportunities for rail freight including the proposed Cornwall locations.

Figure 5-5: Example brochure that could be used to help demonstrate potential rail freight locations, including a site in Cornwall



Prior to these stakeholder calls, contact with made with the UK Infrastructure Bank (UKIB) and their involvement and support for the transport sector and with sub national transport bodies and their partners (both public and private) The

UKIB has a dedicated Local Authority and Lending Function that offers both impartial advice to undertaken infrastructure projects and capital at market leading rates (below Public Works Loan Board rates) to public bodies delivering these economic infrastructure projects. The role and involvement of the UKIB is something to be considered in the delivery of this particular intervention.

Stakeholder calls were conducted with three organisations regarding the potential for terminals in the South West. Notes on these are shown below.

5.3.2.1 Russell Logistics

Russell Logistics is based in Scotland and has 250 vehicles, 14 depots and also operates UK rail terminals. They were identified as a key stakeholder due to their presence in the intermodal sector, and their knowledge of operating to and from more peripheral and isolated destinations in Scotland with a similar profile to those in the South West.

Some key points from this discussion included:

- Locations in the Bristol area, such as Avonmouth and Portbury, offer significant opportunities for containerised freight terminals due to their location and potential customer base, but this has not yet come to fruition. There is a significant concentration of supermarkets in the Bristol area.
- Containerised freight terminals in other locations in the South West will be largely dependent on whether there would be enough volume. Would support a location that covers two regions, potentially central Devon.
- Terminals at some locations could become more viable by aggregating services together. This could make terminals in locations like Devon and Bournemouth /Christchurch and Poole more feasible.
- A key issue that should be considered is the condition of roads to serve any terminals, as well as access to sites.
- Worth noting that previous movement of freight out of South West has happened before, such as cider from Cornwall to Scotland and also wood movements. Freight like china clay is running today. Historically Dairy product by rail was also strong.
- Tilbury to Bristol is possibly a more likely flow than from Daventry Intermodal Rail Freight Terminal (DIRFT). However, a flow from DIRFT to Bristol could be viable with a good fill rate.
- There are two key factors that determine whether terminals are a success. The first is having an operation that will be profitable. The second is ensuring that the fixed costs required to develop a terminal has public sector support or a developer building over a bigger area that can finance the scheme by, for example, selling or leasing other plots in the development to potentially make it more commercially viable.

5.3.2.2 Maritime Transport

Maritime Transport is a family-owned transport company who operate nine terminals of their own as well as having a presence at several others. They currently operate around 13 deep sea container trains per day as well as one train per day transporting soft drinks. They were identified as a key stakeholder because of their presence in the sector (they're involved with the Tesco movements), and in particular their knowledge of operating intermodal terminals and their insight into what makes a particular terminal viable.

Some key points from this discussion included:

- Relating to the Bristol area, an issue coming from London Gateway or Felixstowe to Bristol would be the route clearance. This could be overcome with pocket wagons (however they are less train length efficient)
- An intermodal terminal around Bristol/Newport area could be viable, but rail lines are constrained, and route infrastructure is an issue. Concern was also raised about the proximity to the Port of Southampton in terms of being able to make the route viable.
- The Bournemouth, Christchurch and Poole area is unlikely to be suitable for a terminal – arising from its demand density and adjacency of Southampton.
- In central Devon, a location around the Taunton or Exeter area would be required to provide the greatest coverage. Any further South West may be a bit niche from a general distribution angle. (Try to avoid running back on oneself).
- Commodities destined for places like Cornwall could be taken as far as a terminal at somewhere like Bristol or Exeter by rail and then transported by road thereafter.
- The issue with mid-Cornwall for a terminal would be gauge constraints, and there would also need to be sufficient demand.

5.3.2.3 Imerys

Imerys is a multinational minerals firm with pit mines across the UK including in Cornwall, Devon and Dorset. They currently transport china clay between their sites in Cornwall and the Port of Fowey. They were identified as a key stakeholder because of these existing rail operations and the potential to run services from a future Cornwall terminal.

Some key points from this discussion included:

- Imerys would be supportive of a terminal in Cornwall, with sea container flows between Cornwall and the Port of Southampton as well as London Gateway.
- There exists the possibility of developing an already assessed 'operationally viable' service, from a location such as Goonbarrow, with the potential for reengineering of a terminal to get more volume to include 3rd party traffic. This would help underpin the required business case for such a development including any potential funding package from different partners including the public sector. This could include supermarket traffic in containers / swapbodies (on a different train to Imerys operations). So the vision would be a train to the Midlands and another to Southampton and possibly a third to London Gateway.
- A terminal in Cornwall would be a possibility but would require a reasonable commercial offer / investable proposition for a terminal operator to establish such a facility.
- Regarding the potential for a terminal in Devon, this is not ideal as the rail leg to Southampton is already short from Cornwall and would be even shorter from Devon. This would also likely require a road leg which would not be preferred as it adds extra expense.
- Goonbarrow would be the preferred site for a terminal as that is where the majority of containers are going to now. Therefore, there is not so much interest in a site in a location such as Burngullow.
- Imerys were keen to engage further with next steps as part of the Year 3 programme.

5.4 Findings

5.4.1 RL7/8

A summary of the key findings is shown below:

- Each of the terminals that were shortlisted previously are still considered viable, albeit to varying extents. Four additional sites have been added, which is a positive step to developing more terminals in the South West.
- These sites have a significant geographical spread, although some gaps do still exist such as in north Devon. However, areas with the most significant demand are well covered in the prospects list.
- From the perspective of GBRTT, the sites at Gloucester Yard, Poole Harbour and Exeter Riverside offer the highest likelihood for operational sites in the near future. For Gloucester Yard, a possible timescale for the first service of June/July 2024 was given. For Poole Harbour this was 2025. (It is to be noted that discussions between Port of Falmouth and GBRTT / NR are also ongoing).
- Safeguarding of sites by Local Authorities is mixed, as is the reference to rail freight more generally within local plans and similar documents. Local plans range significantly in terms of when they were adopted, and in some cases a significant length of time has elapsed between the date of adoption and the present day. In some cases, sites are safeguarded for industrial land, but not specifically for a rail freight terminal.

5.4.2 RL1

A summary of the key findings is shown below:

- Several different commodity groups are being transported currently across the UK. As part of this, there exists the potential for several of these to be transported by train into the South West, especially the intermodal sector and construction materials. This builds on existing flows, such as china clay to and from Cornwall.
- Support exists for the start of intermodal services to the South West if terminals can be developed and services can be cost-effective.
- There were reservations from some stakeholders relating to congestion on rail routes, gauge clearance and addressable market.
- Key locations that would be favoured from some stakeholders are terminals in the Bristol area, as well as in mid-Cornwall. These could act as hubs in order to reach the rest of the South West. However, the addressable market for a terminal in Cornwall would need to be considered.
- If only one terminal was to be developed, a central location such as Devon would be considered a suitable location, possibly around Exeter.
- Potential origins/destinations serving London Gateway/Tilbury Docks, DIRFT/West Midlands and Port of Southampton to the South West have been considered as both suitable and potentially viable.

5.5 Conclusions

Overall, there have been significant updates within the last year with relation to the potential for new services and the development of terminals. It is positive to see that additional locations of terminals have been shortlisted, and that Gloucester Yard, Poole Harbour and Exeter Riverside in particular are showing especially positive signs.

Additional stakeholder engagement has also helped reinforce that operators feel that services running to and from the South West are considered viable, albeit with some reservations about aspects such as route clearance and addressable markets for some locations. A key variance across the study area is the commerciality of a terminal operation with the far South West being the most challenging in this regard and likely to require an element of public intervention to support otherwise viable freight flows.

Once services are introduced, and terminals operational, this will help with the wider aim of reducing congestion and the impact of the freight sector on the environment in the reduction of CO_2 and other emissions.

5.6 Next Steps

Following the analysis undertaken, the following next steps have been identified in order to help develop these interventions and build on the progress made so far:

5.6.1 RL7/8

- Encourage that Local Authorities are making reference to shortlisted sites when developing or refreshing local plans, and what land is allocated for.
- Where sites are especially close to operating services, ensure liaison between GBRTT/Network Rail and Local Authorities to ensure these priority sites are safeguarded including any potential expansion land.
- GBRTT to continue to provide updates where relevant on the status of shortlisted sites, given that all have the potential for services to be operated.
- Continue to periodically update the map of shortlisted sites as these become unavailable, or as more sites are identified.
- Continue to deepen and broaden the relationship with GBRTT / Rail Freight Group in particular as a central pillar to help deliver the objectives of the South West Freight Strategy Interventions and the wider targets such as the Rail Freight Growth Target at a regional level and ensure that this contribution is additive drawing on the convening powers of the STB and the specific powers and responsibilities of Local Authorities in their place, not forgetting wellbeing functions.

5.6.2 RL1

- Continue to identify and target additional potential operators, and work with them to fully realise the potential of rail freight in the region on an additive basis with GBRTT and local business organisations.
- As potential terminal sites are identified as part of other interventions, work closely with potential operators to ensure alignment at all stages of the process with respect to those in scope of public bodies such as the Local Highway and Planning Authorities.
- Refine the list of routes that would be favoured as additional opportunities become available, and as trial or regular services to and from the South West begin to operate.
- Develop a joint awareness (for Western Gateway / Peninsula) and competence capability within the Sub National Transport Body to act as a technical resource to their constituent authorities (applies also to RL7 / 8).

6. RD2 – Promote resources and training to help operators avoid bridge strikes

Road intervention – RD2	
Intervention name	Promote resources and training to help operators avoid bridge strikes.
Intervention description	Includes working with different organisations to reduce the number of bridge strikes. This includes the mapping of vehicle restrictions and recommend routing plans, support use of Bridge Strike Toolkit, use of technology on commonly struck bridges and potential height constraint removals where feasible. The plan included investigating what can be done on the most frequently hit bridge in the South West, which happens to be in Wiltshire and over a recent four year period was hit 41 times.
Theme	Information and awareness
Timescale	Short term
Intervention owners	Network Rail, National Highways, Local Authority Highway Departments and Road Haulage Association /Logistics UK

Progress to date	Discussions have been held with major stakeholders to talk about applying technology to prevent bridge strikes. Information has been collected on the types of systems available and suggestions have been made regarding how these can be applied to bridges in the South West. Several online discussions and phone calls have occurred during the year. National Highways have made good progress towards planning the installation of new vehicle activated signage at the A36 Wilton bridge for installation in the first half of 2025.
Next steps	Work to implement solutions within the South West, including rolling out a range of technology that can be installed at commonly hit bridges. It is recommended that the top 10 most hit bridges in each STB region are investigated to prevent future strikes.

6.1 Introduction

Intervention RD2 in the South West Freight Strategy aims to help freight operators avoid bridge strikes. This involves working with relevant stakeholders to discuss the issues and to help address them. This includes working with highway authorities, map providers showing vehicle restrictions, recommending routing plans, supporting the use of the Bridge Strike Toolkit, investigating the types and use of technology/signage, investigating further the most commonly struck bridges, and potentially removing height constraints where feasible.

This section explores the reasons why strikes occur and possible solutions that can help to reduce strikes in the future. Cornwall Council reported that in 2019, circa £1m was spent on road and rail bridge repairs for the county. Network Rail has estimated that it costs the UK tax payer £23m each year as a result of nationwide rail bridge strikes and around £13,000 per strike[13]. In addition to the economic costs of bridge strikes, there are costs associated with inspection and repairs to bridges and vehicles, the compensation paid for train delays, the unquantified cost of delays to road users and an increase to insurance premiums.

Following a rail bridge strike, it can take approximately one hour from when the bridge strike is reported to control to train services resuming[14]. This could take longer depending on the extent of the damage, the time of day and the bridge location. If a vehicle has become stuck under the bridge, it can delay a bridge examination until the vehicle is safely removed.

When this project began, Network Rail reported their top 10 most struck bridges in the country, three of which were in the South West. Second on the national list and most frequently hit in the region was a bridge in Wilton, Salisbury which was struck 41 times between 2018 – 2022. The bridge in Wilton is the focus of this study and the research will provide solutions to prevent bridge strikes. One of the strikes at the Wilton bridge was reported to have taken approximately two hours before the vehicle was removed and the traffic flow to resume[15].

Data collected as part of this project listed over 40 bridges that had been repeatedly struck between 2018 - 2022. The top five for each STB are listed below with an estimated delay time and cost for each bridge.

Table 6-1: Top five most hit bridges in the Peninsula region

Location	Strikes	Local Authority	Road type	Bridge Type	Delay time*	Cost*
Saltash Road – B3396	10	Plymouth	Local Highway	Rail Bridge	20 hours	£130k
A38 Telford Road	7	Cornwall	SRN	Rail Bridge	14 hours	£91k
Perry Hill – East Lydford	6	Somerset	MRN	Rail Bridge	12 hours	£78k
Palstone Ln – South Brent	5	Devon	Local Highway	Rail Bridge	10 hours	£65k
Gutt Bridge – B3314	5	Cornwall	Local Highway	Road Bridge	10 hours	£65k

[13] https://www.networkrail.co.uk/communities/safety-in-the-community/railway-safety-campaigns/wise-up-size-up/

[14] https://www.networkrail.co.uk/stories/delays-explained-bridge-strikes/

[15] https://www.wiltshirelive.co.uk/news/wiltshire-news/a36-lorry-crash-live-wilton-7346662

Table 6-2: Top five most hit bridges in the Western Gateway region

Location	Strikes	Local Authority	Road type	Bridge Type	Delay time*	Cost*
Wilton Road Bridge (A36)	41	Wiltshire	SRN	Rail Bridge	82 hours	£533k
Lake Road – Poole	16	BCP	Local Highway	Rail Bridge	32 hours	£208k
Fisherton Street – Salisbury	14	Wiltshire	Local Highway	Rail Bridge	28 hours	£182k
Castle Street – Salisbury	14	Wiltshire	Local Highway	Rail Bridge	28 hours	£182k
Bath Rd – A431 Willsbridge	4	Bristol	MRN	Road Bridge	8 hours	£52k

**Delays calculated as two hours per strike, based on incident at Wilton Road Bridge*
***Cost calculated as £13,000 per strike, based on Network Rail figures*

6.2 Why bridge strikes occur?

A bridge strike occurs when a vehicle collides with a bridge, either because it is too tall to pass under a bridge, or when a vehicle collides with a bridge parapet.

There is no set vehicle height specification in the UK however new bridges in England on the Strategic Road Network (SRN) have a greater height clearance (5.3m) compared to most European standard bridge heights. Other countries throughout Europe have a maximum height specification on vehicles of 4m. Some countries have built their road networks with different height limits, ranging from 4.2m to 5m. This is why Europe have standardised a truck height of 4m, which should be able traverse widely across the Trans-European Network. However, there are still many older bridges throughout the South West with very low height clearance and some of these are on the SRN.

- Research has found multiple reasons why bridge strikes occur
- Drivers not being familiar with the height of their vehicles
- Poor route planning
- Drivers not understanding or seeing signs
- Inadequate signage
- Using incorrect sat nav systems
- Using an old road atlas

For European drivers visiting in their own vehicles, their trailers should fit under most of the bridges in England. However, if they are performing cabotage duties using taller UK trailers, they may not be familiar with the increased heights of the equipment which could result in a bridge strike. Double deck trailers are commonly used in the UK whereas they are not used in mainland Europe.

Figure 6-1: Trailer after striking a low bridge

Source: dailypost.co.uk

6.3 Findings

6.4 Wilton Road Bridge (A36) in Wilton

Following on from the information on the top 10 most hit bridges, desktop research was carried out to identify bridge strikes in the Sailsbury area, including common reasons for the strikes occurring. The rail bridge on Warminster Road in Wilton, Sailsbury was identified as a being a commonly hit bridge. This bridge is on the A36 and is part of the Strategic Road Network and therefore the responsibility of National Highways.

Figure 6-2 shows the rail bridge on Warminster Road (A36), Wilton, which was struck 41 times in a recent four year period. The arched bridge has a maximum height of 4.2m in the centre of the bridge and a minimum height of 3.3m at the edges of the bridge. This means that double deck trailers, at 4.8m tall, are too tall to fit under and standard height trailers, at 4m tall, are required to pass under in the centre of the carriageway, as shown in Figure 6-7.

Figure 6-2: Wilton Road Bridge

Source: Google maps

Figure 6-3 shows signage from the north is approximately 100m from the bridge. This sensor and alerting sign no longer works and there are no points after this sign where a driver of a double deck trailer is able to turn around. The stretch of the A36 approaching this sign is very long and the nearest suitable place to turn an HGV would require the driver to reverse for approximately two miles (South Newton Industrial Estate).

Figure 6-3: Signage from the North

Source: Google Maps

Figure 6-4 shows the location approximately 500m from the bridge. If the driver of a vehicle over 4.2m high has missed this sign and taken the exit, there are no suitable places to turn an HGV between this roundabout and the bridge.

Figure 6-4: Sign on roundabout exit from the South

Source: Google Maps

Figure 6-5 shows the location approximately 100m from the bridge. There are no suitable turning points on this stretch of the A36 and if the driver of a double deck trailer has come this far, they would need to reverse 500m back to the roundabout.

Figure 6-5: Road sign from the South

Source: Google Maps

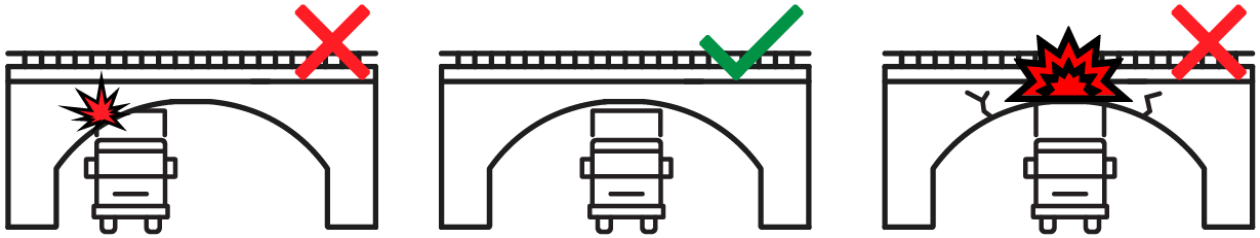
If the vehicle being driven is a single deck trailer and less than 4.2m, it can pass under the bridge using the centre of the carriageway. The driver would have to wait until oncoming traffic was clear before they could position themselves to pass safely.

Figure 6-6 shows markings on the road to indicate the correct driving line to the driver.

Figure 6-6: Driving line

Source: Google Maps

Figure 6-7: Vehicle position and height



Standard height trailers (4m) would collide with the bridge if they tried to pass in the normal lane.

Standard height trailers (4m) should use the centre of the road to be able to pass safely.

Double deck trailers (4.8m) cannot pass safely even if they are in the centre of the road.

Figure 6-8 could have been avoided. This incident occurred on 28th October 2022, causing the road to be closed in both directions and forcing trains to slow down to cross the bridge[16].

Figure 6-8: Incident at Wilton Bridge

Source: Swindon Advertiser

Rerouting once the driver is on this stretch of road is not possible as the approach from the south has no turning options for 500m and the only turning point from the north is a road that would struggle to accept an HGV. Drivers would need to alert the police to stop the flow of traffic so that the HGV could be reversed to the nearest turning point.

The findings suggest a need for improved technology to alert drivers of the upcoming height restriction and to advise them how to proceed. Technology using vehicle sensors and signage systems can help to prevent drivers from using restricted routes but also to alert before a bridge strike occurs.

6.4.1 Stakeholder discussions

To gather information on the issue and brainstorm possible solutions, the project team held multiple discussions with key stakeholders between October 2023 and April 2024. National Highways, Network Rail, Wiltshire Council and Clearview Intelligence (an innovative technology manufacturer) have all been involved in these meetings.

Meetings were held with National Highways, Network Rail and Wiltshire Council to discuss how these systems could be used to alleviate future strikes on the Wilton Bridge and other bridges in the South West. During more recent discussions in early 2024, National Highways presented their plans to replace signage and laser height detectors at the Wilton Bridge. National Highways plan to replace the current signage/system with enhanced laser activated signage to either tell drivers to stop and turn back (for vehicles that are too tall to pass under the bridge for example double deck trailers which

[16] https://www.salisburyjournal.co.uk/news/23084308.a36-crash-lorry-wedged-kingsway-bridge-near-wilton/

are around 16 feet high), or tell drivers to use the centre of the road to pass under the bridge (standard height single-deck trailers which are typically 13 feet 6 inches high). A summary of discussion is provided below:

Engagement	Main points	Additional information
• SWFS Roads Sub-group meeting • SWFS Steering Group meeting • Clearview Intelligence • Project Team	Demonstration of a practical example of a height detection system in Hull.	
• National Highways • Project Team (2 x meetings)	NH plan to replace the North side sensor and digital sign for new vehicle activated signs on either side of the bridge	See Figure 6-11 NH showing the plan for signage and Figure 6-12 showing suggested signage.
• Network Rail • Clearview Intelligence • Project Team	Wilton bridge was presented as a challenge to be resolved due to its complex shape and height restriction. A lengthy detailed discussion followed with questions around how and where the sensors could be used, whether they would activate signs for the drivers or need traffic signals and how the illuminated road studs could help drivers position their vehicles to pass under the centre of the bridge.	See Figure 6-9 and Figure 6-10 – laser activated signage and illuminated road studs.
• National Highways • Network Rail • Wiltshire Council • Western Gateway • Clearview Intelligence • Project Team	Illuminated road studs from Clearview Intelligence could be utilised when the laser detects a vehicle that would need to use the centre of the carriageway. Traffic lights could be used to stop the flow of traffic in the oncoming lane. National Highways explained they had progressed so far with their plan, any changes at this stage would risk delaying the work being carried out, which is due to start in early 2025. They also highlighted that utilities under this section of the road are very close to the surface and suitable points to install signage is limited. This would mean that installing studs would be impossible due to the risk of damaging the utility lines below. Wiltshire Council were asked if it would be possible to extend signage onto their roads to try to stop drivers getting into a position where they would need the police to intervene to help them reverse the vehicle. Wiltshire Council will consider this once the National Highways work has been carried out and whether there is still a need for additional signage afterwards.	See Figure 6-11 – National Highways upgrade plans. See Figure 6-13 – possible use of traffic signals and illuminated road studs.

6.4.2 Solutions

Although the focus has been on the Wilton Bridge, this research has shown that the methods and solutions suggested would be ideal for other bridges in the South West. The systems found during this study comprised of mainly technological solutions which can be easily adapted to suit different locations and different needs. However, driver training could also form part of the solution. Any combination of the systems and solutions below could be picked from to create a bridge strike solution package for other low bridges in the South West.

With National Highways planning to introduce an improved system, it could influence other council road authorities in the South West to also use similar solutions for frequently struck bridges.

6.4.2.1 Technology based solutions

The main systems that were researched highlight the hazard of a low bridge to the driver, regardless of the training they've received, the route that has been planned or sat nav they are using. If a driver is unaware of their vehicle/trailer height, a vehicle activated warning sign will alert the driver how to proceed.

- **Laser activated over-height warning signs** – Clearview Intelligence gave a rough estimation of £115-130k for the supply and installation of two laser activated signs, one on either side of a bridge. They also indicated that if three or

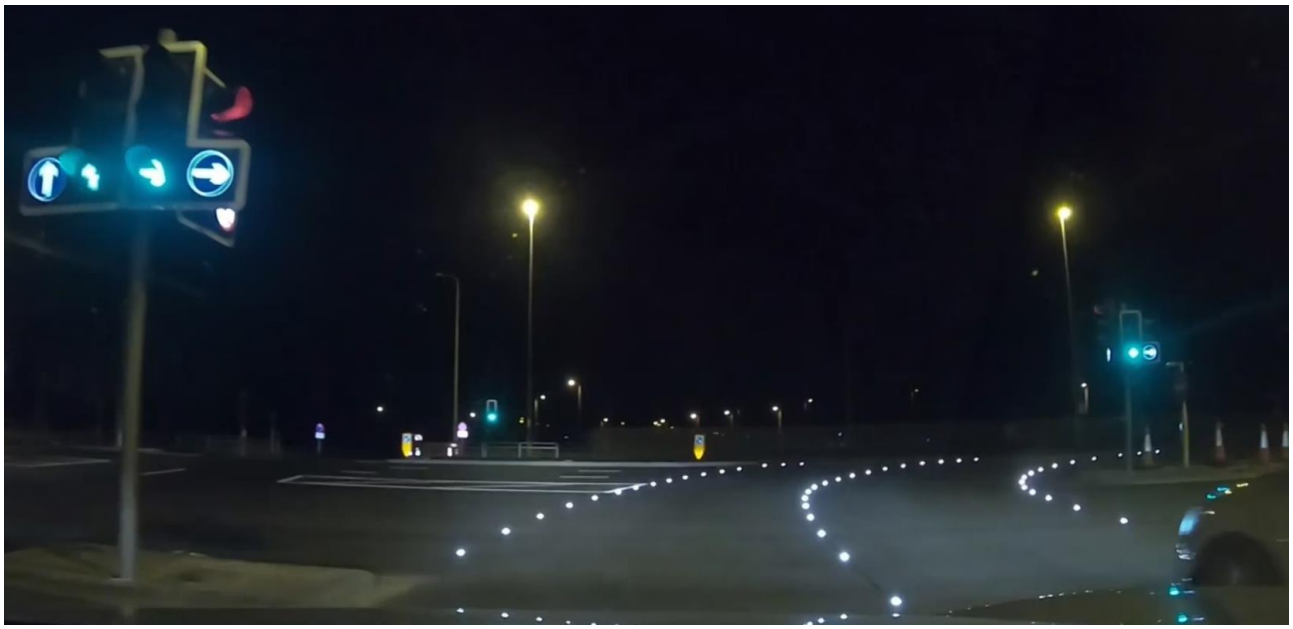
more signage kits were ordered at the same time, a small discount could be negotiated depending on the circumstances of each bridge.

Figure 6-9: An example of laser activated signage from Clearview Intelligence

Source: Clearview Intelligence

- **Illuminated road studs** – Clearview Intelligence gave a rough estimation of £1,000 per stud for supply and instillation. In the case of the Warminster Road bridge as an example, it was assumed that 10 studs would have been required on either side of the road. The total cost for installing illuminated studs at similar bridges would therefore be £20,000.

Figure 6-10: An example of illuminated studs from Clearview Intelligence



Source: Clearview Intelligence

6.4.2.2 Training and non-technology based solutions

The strikes were predominantly being caused by a lack of driver awareness. Driver training is also a consideration of this intervention which is more of a long term, national solution. Network Rail and Transport for London, through their FORS programme, have already developed useful training material for drivers – Prevention of Bridge Strikes Toolkit[17]. This training could be part of the solution if more drivers receive this training as for example part of the compulsory Driver's Certificate of Professional Competence (DCPC). Each driver has to undertake 35 hours of training every five years. International drivers and those visiting from other regions may not have had the right awareness training and may not be aware of the low bridges in the South West. There are transport sector paper atlases and online maps that do show the height of bridges but not every lorry driver uses these. Some satellite navigation systems show these features but not all. With this in mind, the focus was made on introducing smart signage, so that all drivers, whether they have been trained or not, would be aware of the low bridge and how to proceed.

Other, non-technological solutions could be:

- Re-routing with a diversion
- Lowering the road under the bridge (to create more height clearance), depending on whether there are any utilities under the road and level of disruption this would cause
- Raising the bridge itself – an expensive and lengthy process which would disrupt the flow of trains and road traffic

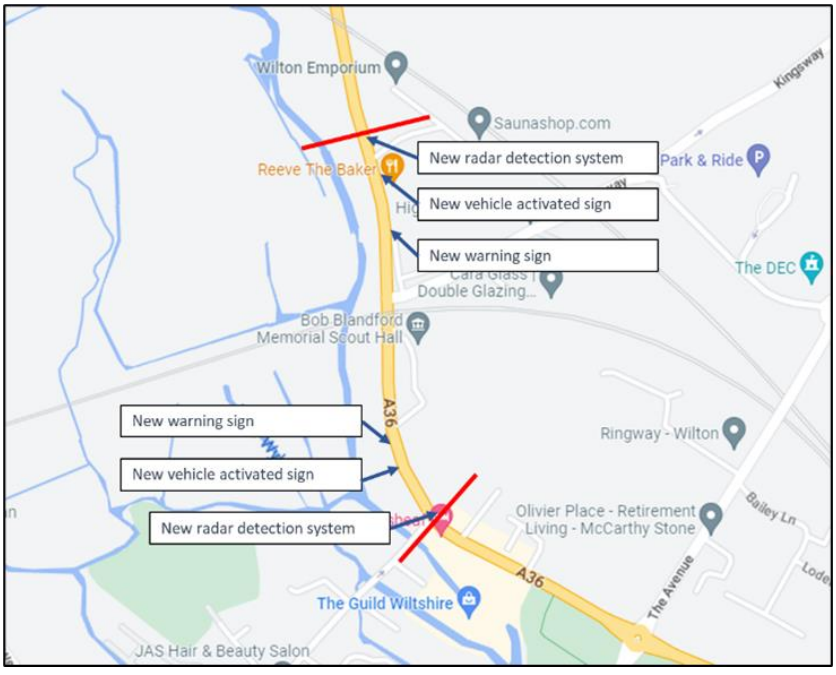
6.4.3 National Highways improvement plan

Figure 6-11 shows National Highways' proposed plan to replace the current signage either side of the bridge and install Vehicle Height Detection systems on both the north and southbound approaches. These detection systems will then trigger the warning message sign with the appropriate message, to either use the centre of the carriageway or to stop and turn back.

There will also be new bridge face warning signs and down lights on either side of the bridge.

There is an intricate network of utility lines under this section of the A36. Some of these pipes and cables are within 200mm of the road surface, meaning installing illuminated studs would be very difficult in this area and restricting the number of sensors and signs that can be installed around the bridge. Solar powered illuminated studs could be installed as they would not require underground cabling and would not need to be drilled as deep into the road surface. This is not something that National Highways have as part of the current plan but is something they may consider in the future.

Figure 6-11: National Highways plan for replaced signage



Source: National Highways

[17] https://www.fors-online.org.uk/cms/wp-content/uploads/2018/07/Prevention-of-Bridge-Strikes-Toolkit.pdf

Figure 6-12 shows the proposed signage being installed by National Highways to help advise drivers traveling through Wilton bridge.

Figure 6-12: Proposed signage being installed by National Highways

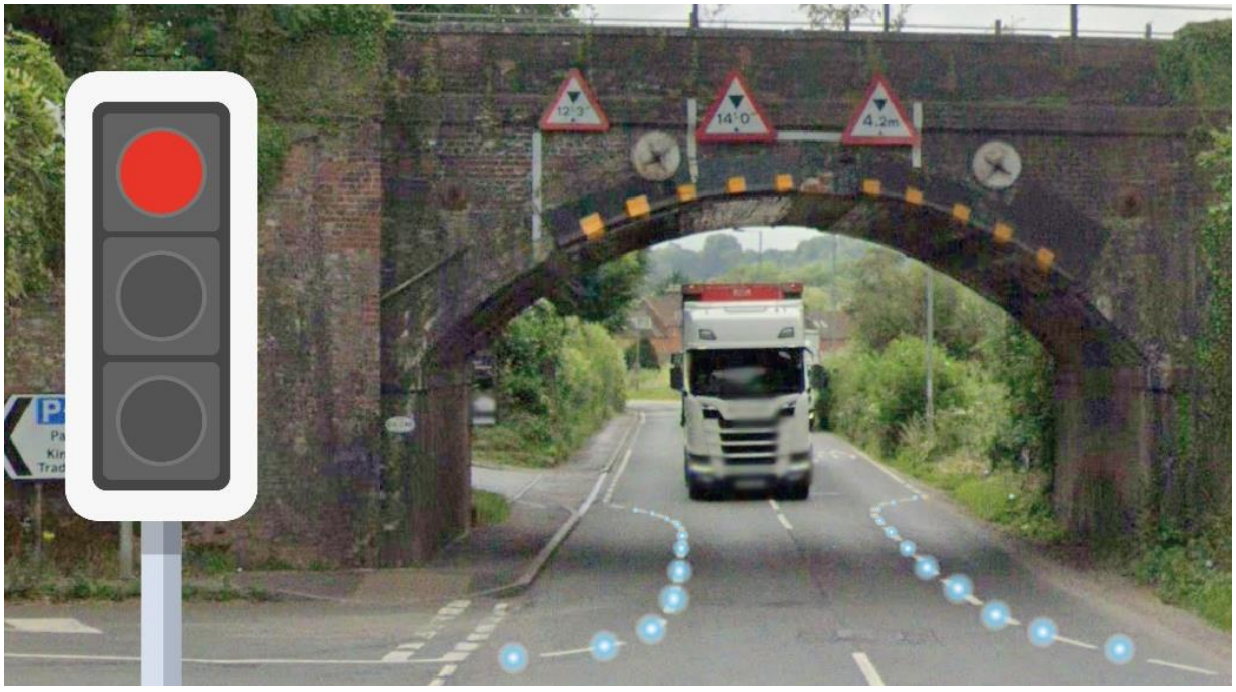
If a double deck trailer (or any vehicle over the height of 4.2m) triggers the sensor, the following message will be displayed to the driver.

If a standard height trailer (or any vehicle up to around 4.2m) triggers the sign, the following message will be displayed to the driver.

As this happens, the message below will be displayed to oncoming drivers to alert them that a vehicle needs to use the centre of the carriageway.

Figure 6-13 provides an illustration of a potential solution for bridge strikes and what the use of traffic signals and illuminated studs could look like to help guide HGV drivers to use the correct driving line for the height of their vehicle.

Figure 6-13: Possible use of traffic signals to control oncoming traffic flow and also illuminated studs to guide HGV drivers to the correct driving line



Source: Google Maps – illustrations overlayed

6.5 Conclusion

Key connections were made with stakeholders during the research and useful discussions were held. Stakeholders were brought together from National Highways, Network Rail, signage manufacturers and Local Authorities. Before this intervention was created for the South West Freight Strategy, these organisations were not aware of the right contacts in the different organisations and hence there is the potential to have sub-optimal solutions proposed. These connections have sparked extra ideas and interest as well as informing stakeholders of solutions to common problems.

The stakeholders involved in the discussions have had an opportunity to make a difference using the suggestions that have been made. Work needs to be done to continue building these connections throughout Local Authorities in the South West.

There are many ways bridge strikes can be avoided but installing preventative technology takes risk away from relying on in-cab information and whether correct training has been provided to drivers. Some drivers, particularly on the A36 route, are from other countries where bridge height training is not carried out.

For Wilton Bridge, National Highways plan to replace signage which will alert more drivers that they could potentially hit the bridge, but it does not alleviate the problem of the double deck operators driving to a point where they are unable to turn around. The proposed detection and signage system is something that can be replicated on other bridges in the South West and suppliers of this technology have now been identified. If a bridge would benefit from an upgraded signage system, it is likely that the cost of £115-130k could not be paid for by the Local Authorities. There could be an opportunity for STB in this case to assist by offering to support for funding bids.

6.6 Next steps

The next steps for this intervention will be to work with other councils in the South West to implement solutions that have been identified as part of the discussions held. The lists of top five most hit bridges in each STB region should be assessed to consider what solutions are required for each. Costings can then be compiled and councils should be contacted with information on how to proceed with each solution, contacting the STBs to help identify and bid for appropriate funding. In cases where the bridges are on the SRN or are rail bridges, National Highways and Network Rail should be contacted to discuss the funding approach.

When working through the top five list for each STB, the following next steps checklist will help to plan the course of action for each bridge:

1. Bridge overview (area, number of recent strikes, height etc.)
2. Identify which STB & council area the bridge is in
3. Identify whether National Highways or Network Rail need to be involved
4. Decide who the possible funders could be
5. Get all funders together on a TEAMS call to outline the problem
6. Arrange a site visit to establish workable solutions
7. Help give information to inform a Business Case
8. Agree the funding ratio
9. Outline the work required
10. Obtain quotes for the work
11. Agree dates that the work can be done to minimise disruption to traffic
12. Appoint contractors
13. Check the work has been done satisfactorily
14. Sign off the job
15. Monitor incidents closely over the next four years to measure success of the scheme

Two other bridges in Wiltshire would benefit from having vehicle activated signage. As conversations have already taken place with Wiltshire Council showcasing this technology, further follow up calls should be made to move this forward.

7. RD5 – Review of lorry parking in the South West

Road intervention – RD5	
Intervention name	Review of current lorry parking in the South West.
Intervention description	To review the current lorry parking work being done nationally by National Highways and DfT and understand the opportunities for the South West. Conduct an audit of lorry parking locations on selected sections of the Main Road Network (MRN) and at key ports and airports.
Theme	Infrastructure
Timescale	Short
Intervention owners	National Highways and Sub-national Transport Bodies – Peninsula Transport and Western Gateway

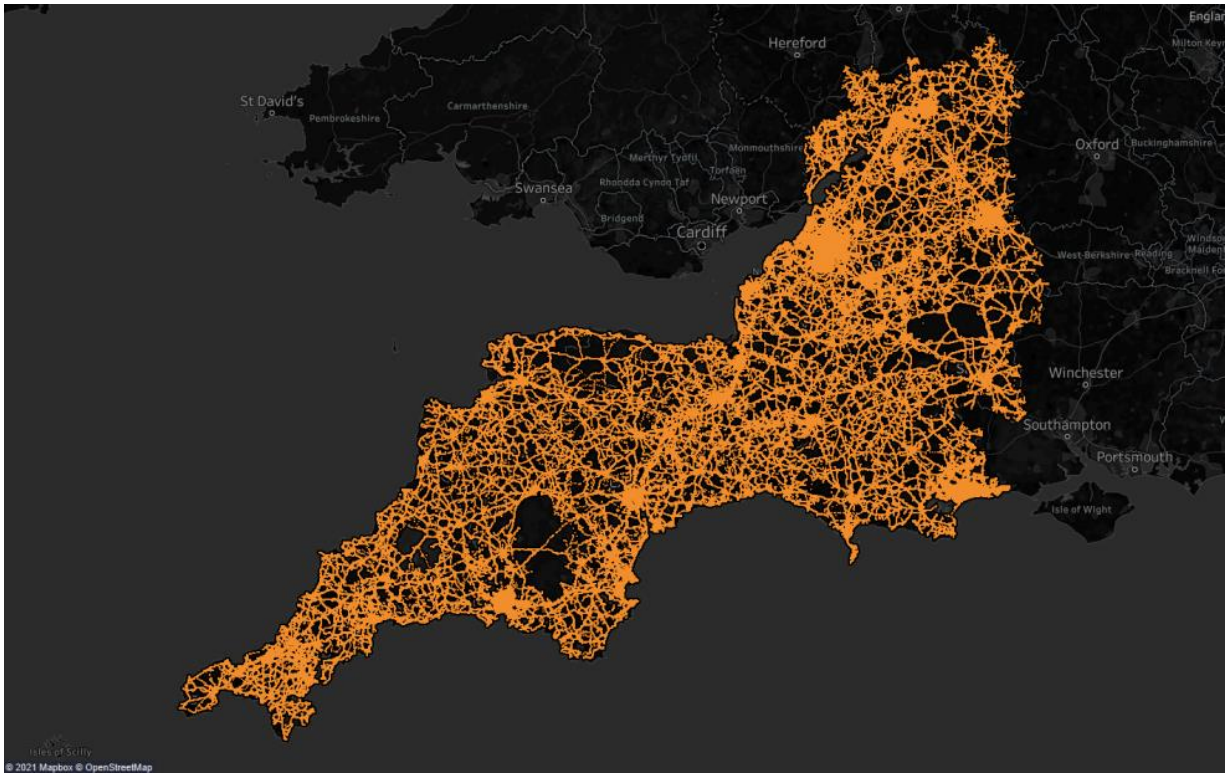
Progress to date	Lorry parking audits have been completed on the MRN, at key ports and airports and some selected sites on the Strategic Road Network (SRN). This has identified parking locations, identified the number of vehicles using those sites and the level of on-site facility utilisation. Opportunities for improving facilities have been identified and engagement with lorry parking operators has happened to encourage applications for funding to improve facilities. A review of lorry parking in Plymouth has been completed.
Next steps	Further engagement with lorry parking operators to encourage them to improve facilities to support driver welfare and safety and explore ways in which drivers can be better supported on the MRN network.

7.1 Introduction

Intervention RD5 in the South West Freight Strategy aims to review lorry parking in the South West. The availability of sufficient lorry parking facilities is a key concern for heavy goods vehicle (HGV) drivers. HGV drivers are required by law to take mandatory breaks during their shifts. Therefore having enough available parking facilities, at an acceptable standard is important. A shortage of parking capacity and poor facilities on the road network can have an adverse effect on the road transport industry including affecting job retention and issues with attracting new drivers to the industry, including more female drivers. A shortage of capacity at on-site locations for overnight drivers can push drivers to park at off-site locations which generally do not even have toilets. On-site locations include truckstops and Motorway Service Areas (MSAs) and off-site locations include laybys and industrial estates.

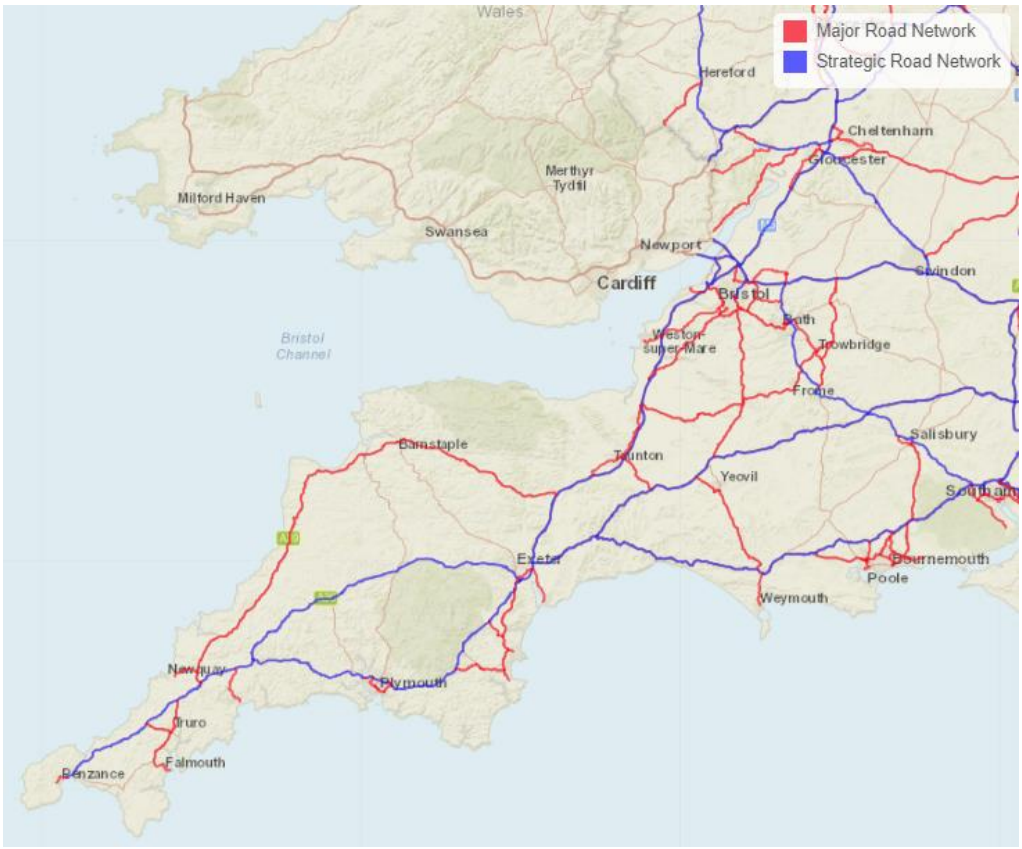
The Department for Transport (DfT) published the National survey of lorry parking (2022), which was a comprehensive study of lorry parking at on-site and off-site parking locations within five kilometres of the SRN. This provided information on the number of types of parking sites, the number of vehicles observed and the on-site utilisation of spaces. The findings from this study included SRN routes throughout the South West. The South West region was identified as having a critical level of utilisation for lorry parking for sites on or near the SRN. This means that more than 85 per cent of the parking capacity for lorry parking is utilised. Whilst the study covers the majority of routes used by HGVs, it does not provide a full picture. Figure 7-1 shows the extent of routes used by HGVs in the South West.

Figure 7-1: Extent of routes used by HGVs throughout the South West



The MRN plays an important role in the movement of goods throughout the South West, in addition to the SRN. The reach of the SRN and MRN throughout the South West can be seen from Figure 7-2.

Figure 7-2: Extent of the SRN and MRN network throughout the South West[18]



To supplement the findings from the DfT, a South West survey of lorry parking was conducted at on-site and off-site parking locations within five kilometres of the MRN. AECOM was commissioned to undertake these surveys in March 2024 to align with the same time periods used for the national surveys (March is an average month and hence representative).

7.2 Methodology

The aim of these additional lorry parking audits in the South West is to identify lorry parking locations on or in close proximity to the MRN, in areas where no lorry parking knowledge is available, at key ports and airports and at selected SRN sites for retest and comparison between March 2024 and March 2022.

Desktop research was carried out to identify a number of sites within these areas. The areas of focus are shown in Table 7-1. This included areas containing MRN sites and also areas lacking in lorry parking knowledge. These include on-site locations such as Trunk Road Service Areas (TRSA), Local Authority Truck Stops and off-site locations including industrial estates and laybys. Table 7-1 and Table 7-2 provides a list of the main roads that were researched and the key ports and airports.

Table 7-1: Areas identified with a lack of lorry parking data and associated road names

Areas	Road name
Bournemouth, Christchurch, and Poole	A338, A348, A349, A350 and A35
Torbay	A380, A385 and A382
Plymouth	A374, A3064 and A386
Torridge	A39
North Devon, Barnstaple, and Ilfracombe	A361
Dorchester to Bristol	A37
Cheltenham	A40

[18] https://maps.dft.gov.uk/major-road-network/index.html#:~:text=The%20MRN%20will%20form%20a,to%20improvements%20on%20MRN%20roads.

Table 7-2: Key ports and airport identified to review lorry parking in close proximity

Ports and airports	
Bristol Port area - Port of Avonmouth - Port of Portbury	Port of Poole
Port of Plymouth	Port of Portland
Port of Falmouth	Bristol Airport
Port of Teignmouth	Exeter Airport
Port of Fowey	Bournemouth Airport

The sites identified were reviewed and shared with the STBs to obtain feedback on the locations. In addition to these, a number of on-site facilities on the SRN were selected for retesting. These included MSAs, TRSAs and independent truckstops. The purpose was to understand how on-site facility utilisation has changed at these selected sites with the March 2024 results from the surveys compared to the March 2022 DfT results.

The sites were inputted into GIS to allow the auditors to record their findings via a mobile app. The survey was conducted between the 18th of March 2024 to the 21st of March 2024. March represents a typical month for logistics activity, avoiding extreme periods such as the lead up to Christmas where logistics activity is greater. This matches the time period used for the National Survey of Lorry Parking (2022). An audit team completed four night time audits across the sites selected. The audits were conducted between the time periods of 18:00 to 02:00, the time periods where drivers are typically parked up for the night for their overnight rest.

7.3 Findings

7.3.1 Lorry parking audit – main road network

7.3.1.1 On-site and off-site parking locations audited

As shown in Figure 7-3, out of the 330 lorry parking sites audited, seven were on-site facilities, 43 were industrial estates and 280 were laybys. Laybys form the highest percentage of sites audited at 85 per cent. Whilst on-site facilities forms only two per cent of the total number of locations audited, they provide facilities that support driver welfare and safety. Three of these are independent truckstops and five of them Local Authority Truckstops. The number of on-site facilities is limited on the MRN in comparison to those on the SRN. This demonstrates the strategic nature of these sites and their locality in relation to demand. Despite the importance of MRN routes for freight flows, the majority of parking locations are laybys, showing the limited facilities that drivers have access to. The geographical spread of these throughout the South West is show in Figure 7-4.

Figure 7-3: Number of on-site and off-site parking locations by type

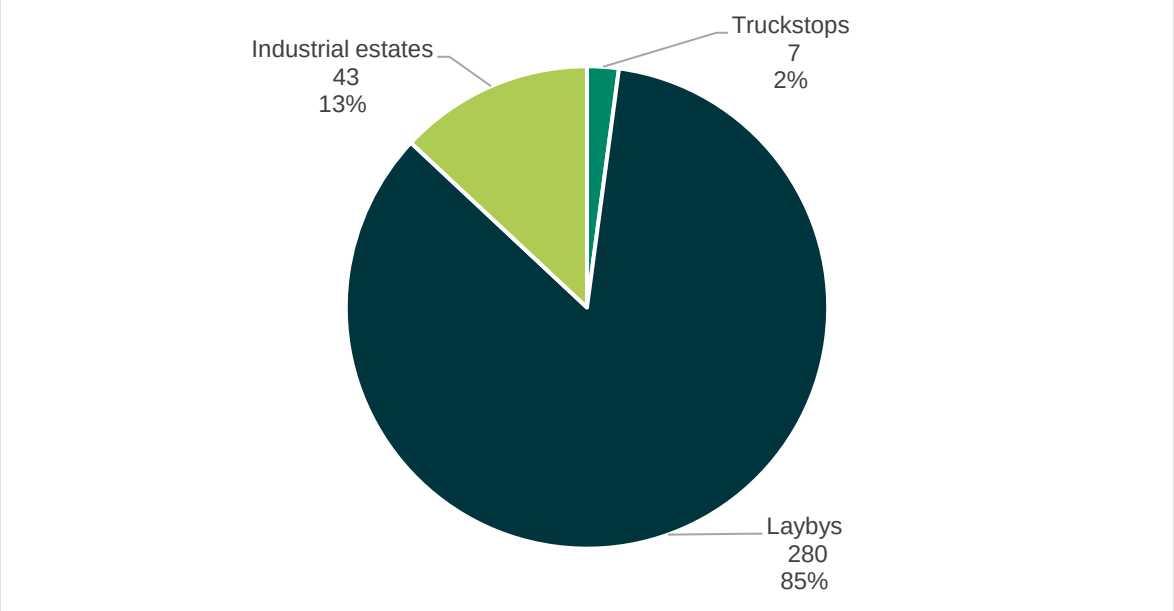
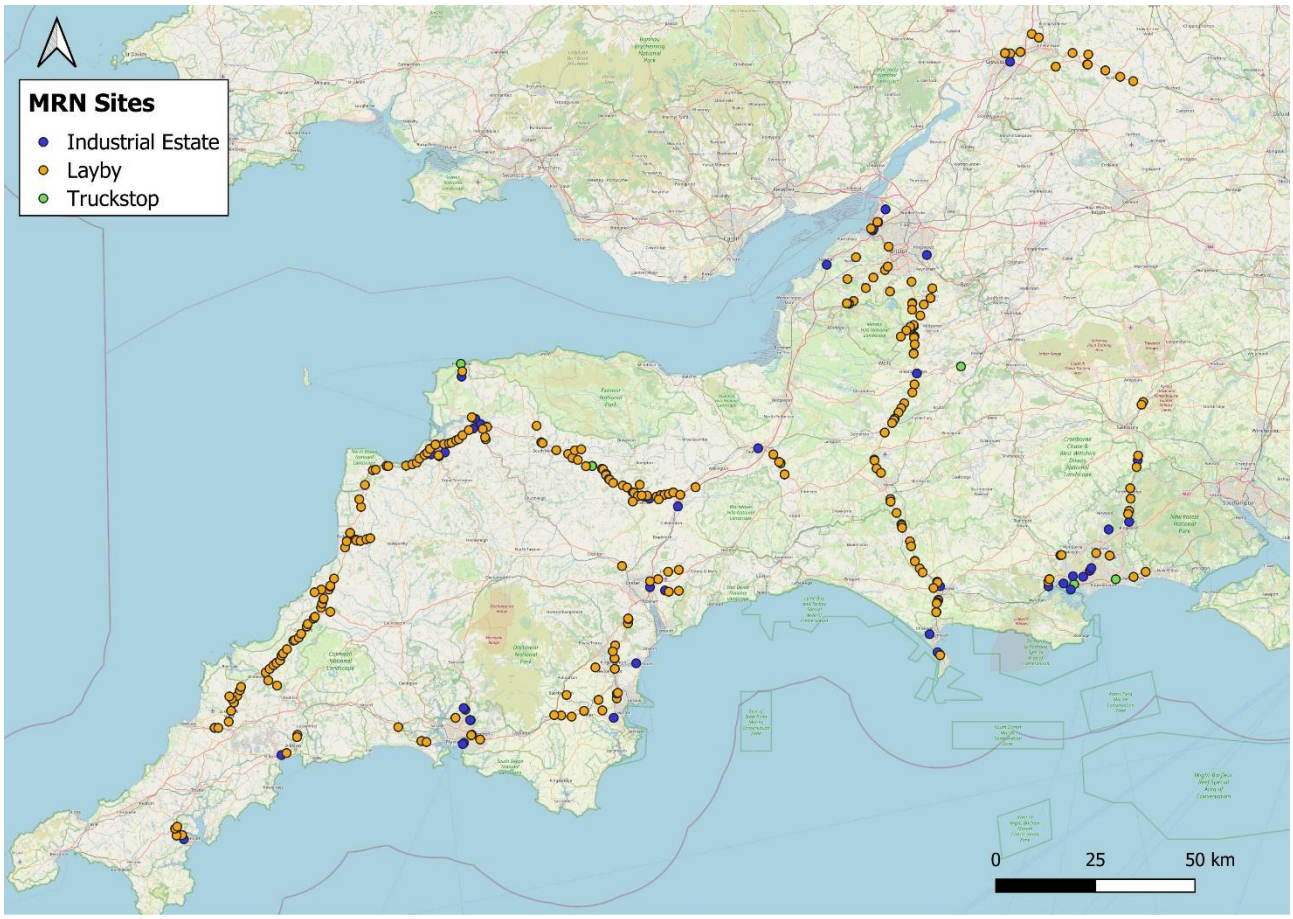


Figure 7-4: Geographical spread of parking locations by type



AECOM auditors were not able to visit one industrial estate and 16 laybys due to road closures on the A39 and A361 at the time of the audits.

7.3.1.2 On-site parking charges

The charge for overnight parking varies depending on the type of on-site parking facility. Two independent and one Local Authority truckstops, out of the total seven on-site facilities, were free of charge to park at. One independent truckstop charged £10 to park overnight and three Local Authority truckstops charged on average £10 to park for 24 hours. These charges did not include any beneficial offers that is often seen at on-site facilities where they may include a meal and shower voucher for the driver.

7.3.1.3 On-site parking facilities ratings

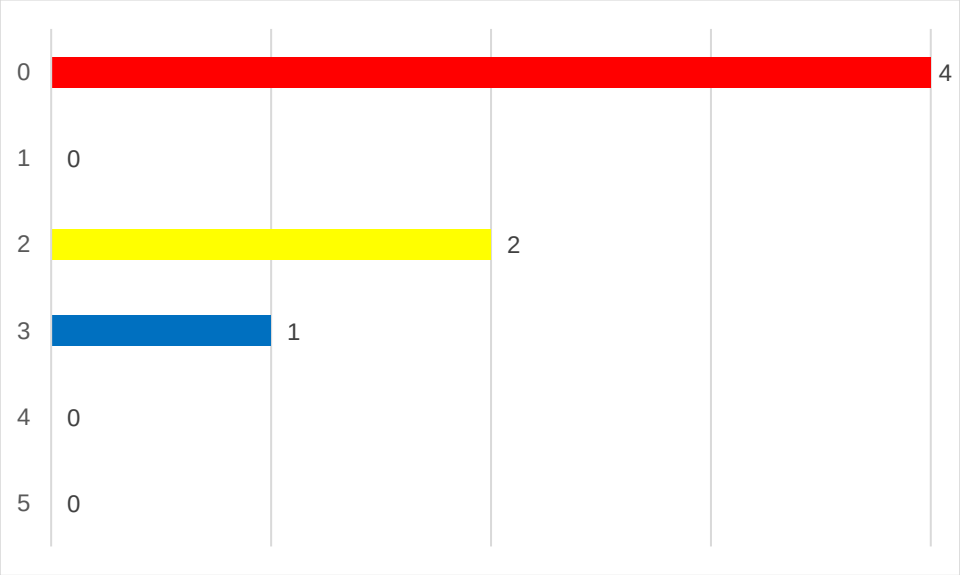
On-site parking facilities vary in what they offer to support the welfare and safety drivers. These include the availability of toilets, showers and café to name some basic examples. On-site facilities can be rated based on a five-point scale to identify the level of facilities available, as shown in Table 7-3. This broadly aligns with LABEL, the European Truck Park Area Certification system, for rating on-site facilities but does not include all criteria.

Table 7-3: Rating system used to measure level of facilities available to drivers at on-site facilities

Site rating	On-site parking facilities	Description
0	No facilities	Basic rest area with no facilities
1	Toilets	Basic rest area offering lorry drivers a place to park and access to toilets
2	Toilets and café	Basic/medium rest area offering lorry drivers a place to park and access basic amenities
3	Toilets, showers, and café	Medium level facility offering lorry drivers a place to park with basic amenities including wash facilities
4	Toilets, shower, café, lighting, and security fence	Medium/high level facility offering a degree of secure and safe lorry parking whilst also offering reasonable facilities for lorry drivers
5	Toilets, shower, café, lighting, security fence, accommodation, and CCTV	High end lorry parking facility offering lorry drivers a place to park security and safely whilst also enjoying extensive facilities

As per Figure 7-5, only one on-site facility scored a rating of three, providing toilets, showers and a place to eat for drivers and two on-site locations scored a rating of two, providing toilets and a place to eat. These sites were independent truckstops. The remaining four on-site locations scored a rating of zero providing only a location to park. These sites were at Local Authority truckstops. This demonstrates not only a lack of locations to park but a lack of facilities for drivers on routes away from the SRN to support their welfare and safety.

Figure 7-5: Number of on-site parking facilities by rating on the MRN



7.3.1.4 On-site capacity

The total on-site capacity observed during the night audits in March 2024 was recorded at 70 spaces. These were observed on the MRN routes and at key ports and airports. There is no capacity for industrial estates or laybys that can be recorded as these sites are not designed for overnight parking.

The capacity for lorry parking at on-site parking facilities varies between the site classifications. Many of the sites were not exclusive to lorry parking and shared the capacity with car and coach users. Capacity can also vary depending on the size of the lorries. Typically, the capacity is determined by the number of marked bays (white lines if used) that are dedicated for lorry parking. The capacity of sites was determined either through desktop research or engaging with sites and then validating the capacity during the on-site audits.

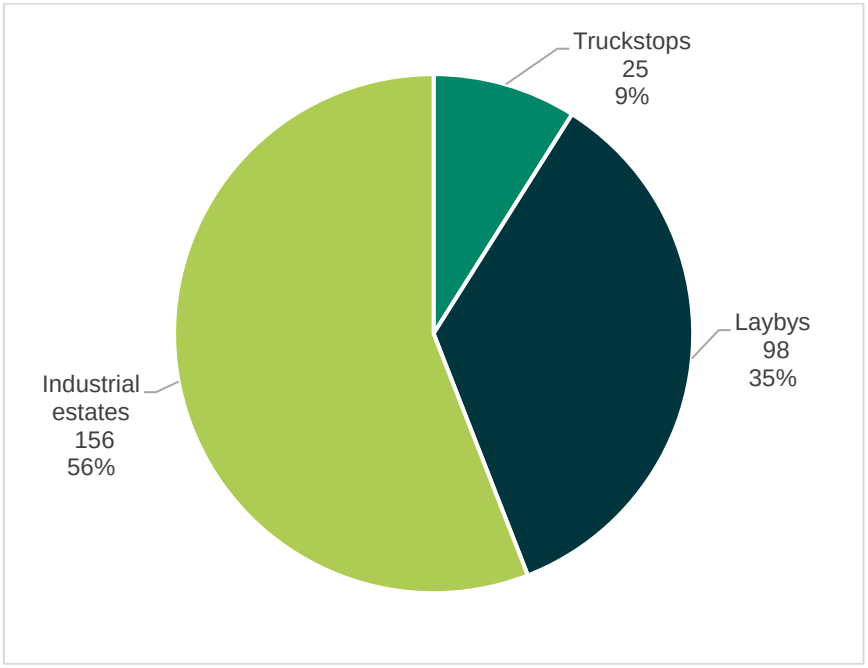
7.3.1.5 Vehicles observed

279 vehicles were observed across all the on-site and off-site parking locations audited.

As per Figure 7-6, 25 vehicles were observed at on-site parking facilities, representing nine per cent of all vehicles observed. Vehicles observed were evenly split between being located at independent truckstops and Local Authority

truckstops. A further 98 vehicles were observed in laybys and 156 vehicles at industrial estates. Industrial estates represented 56 per cent of the vehicles observed. Given the small number of on-site facilities available and the routing of these vehicles being away from the SRN, it suggests that many of the industrial estates are used for destination parking. Vehicles may route to their destination to complete the load prior to resting or are at the destination in readiness to complete their unloading the next day. This is certainly the case for industrial estates near ports and airports. Industrial estates may be the preferred parking location over laybys in terms of access to facilities in close proximity to where drivers are parked.

Figure 7-6: Vehicles observed by parking site on the MRN



Comparing the on-site parking capacity to the number of vehicles observed across all onsite and off-site parking locations on the South West MRN network provides an indication of the number of excess vehicles that cannot park at on-site parking facilities. As per Table 7-4, there is a total of 209 excess vehicles against capacity. This indicates the South West is in need of more on-site parking capacity on the MRN network.

Table 7-4: Capacity at on-site facilities compared with vehicles observed to determine excess vehicles

	On-site capacity	On-site and off-site vehicles observed	Excess vehicles
South West MRN network	70	279	209

7.3.1.6 UK vs non-UK registered vehicles observed

Vehicles observed were recorded as either UK registered or non-UK registered. As per Figure 7-7, out of the total 279 vehicles observed, 242 were UK registered and 37 non-UK registered. Table 7-5 provides a breakdown of the proportional split of UK and non-UK registered vehicles by site type. The vehicles observed were predominantly UK registered vehicles, with the average proportion of UK registered vehicles across the different site types at 89 per cent. Given the geography of the South West and the distance from the arterial international gateways such as of Dover, for road freight, it is expected that the proportion of non-UK registered vehicles observed is small. A higher proportion of foreign registered vehicles use laybys and industrial estates than official truckstops, probably because they are free.

Figure 7-7: Vehicles observed by country of registration

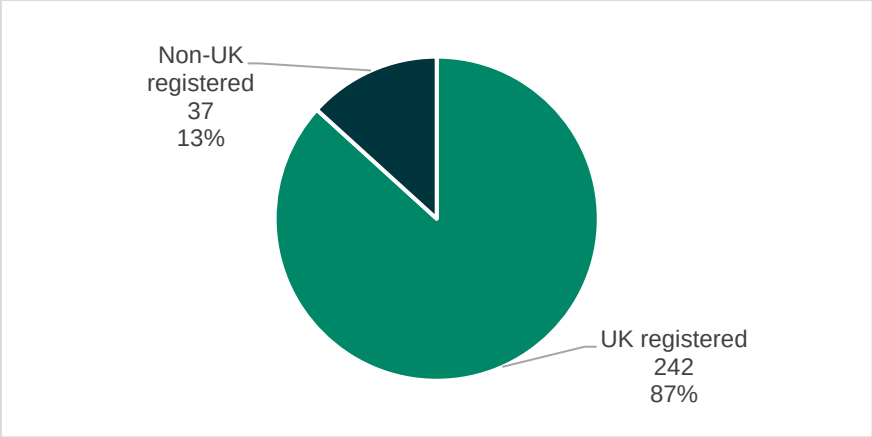


Table 7-5: Split of UK and non-UK registered vehicles by site type

	UK	Non-UK	All
On-site facilities	24 (96%)	1 (4%)	25 (100%)
Industrial estates	136 (87%)	20 (13%)	156 (100%)
Laybys	82 (85%)	16 (15%)	98 (100%)

7.3.1.7 Utilisation

Based on the capacity and number of vehicles observed, the utilisation level can be determined for on-site facilities along the MRN network and sites in close proximity to key ports and airports. As per Figure 7-8, the utilisation level across all on-site parking locations is 35 per cent. In alignment with the categorisation for lorry parking utilisation used by the DfT, this is an acceptable level of parking utilisation (Table 7-6).

Figure 7-8: On-site utilisation on the MRN

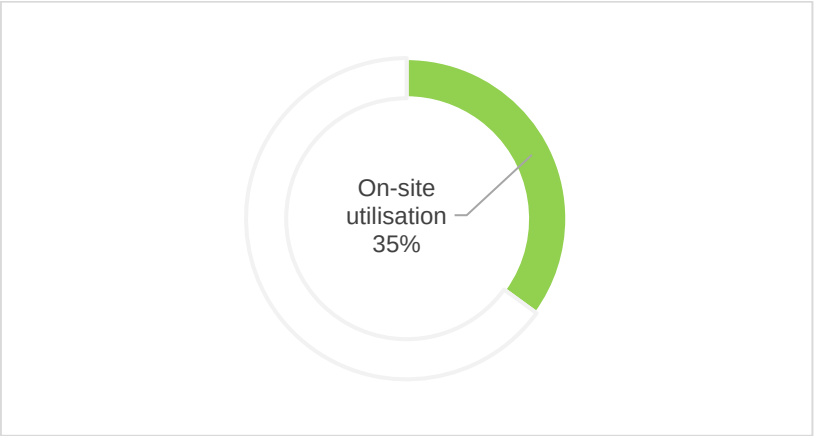


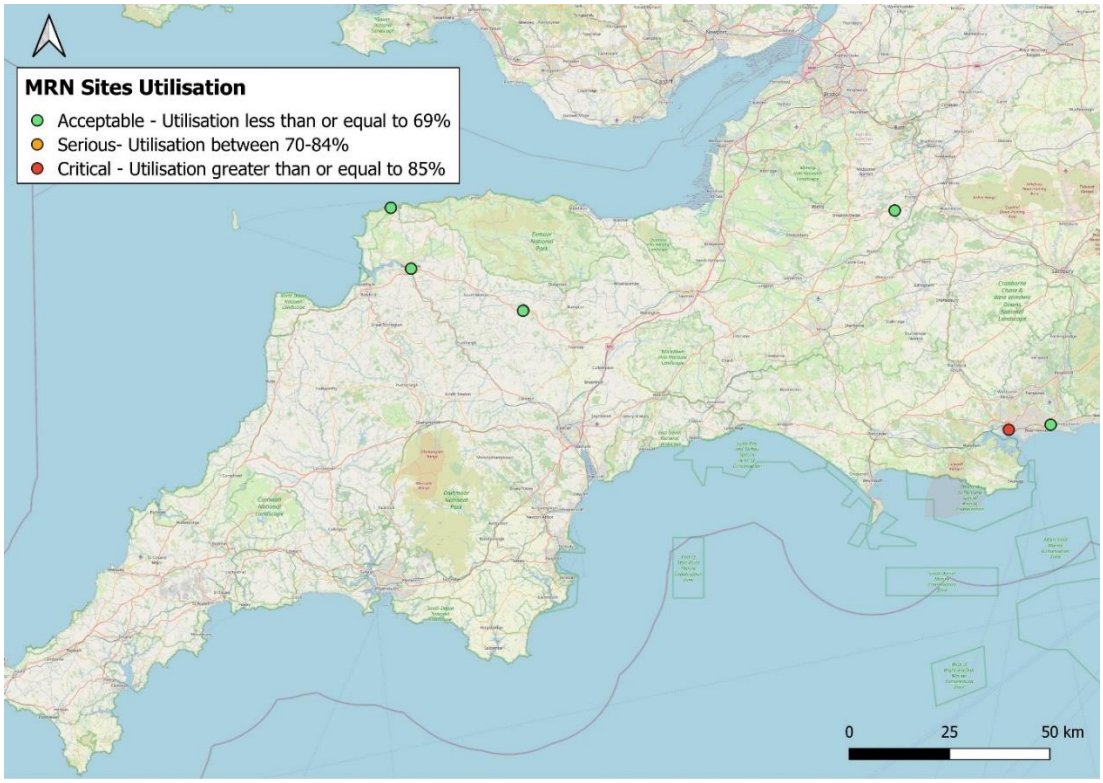
Table 7-6: Utilisation of parking capacity categorisation

Description	Utilisation
Critical	Great than or equal to 85%
Serious	70% to 84% full
Acceptable	Less than or equal to 69% full

Whilst it is positive that the capacity of on-site parking locations is not oversubscribed, it is worth considering the number of vehicles that are parked in off-site locations. Drivers should be encouraged to use on-site facilities to support their welfare and safety. There is a lack of facilities available on the MRN network. This is shown by the low number of suitable on-site facilities that were identified. As a result, the majority of vehicles observed are parked in laybys and industrial estates.

As per Figure 7-9, the majority of on-site parking locations surveyed as part of the MRN network and sites in close proximity to key ports and airports are an acceptable level of utilisation. One site was categorised as critical (90 per cent), which was the Stadium Lorry and Coach Park in Poole. This site is in close proximity to Poole Harbour and the Port of Poole.

Figure 7-9: Utilisation of on-site facilities on the MRN



7.3.2 Lorry parking audit – strategic road network – retest

In addition to the sites audited on the MRN network and sites in close proximity to key ports and airports, 12 sites were selected from the SRN network for retesting to understand how the March 2024 figures compare to the audit data for the DfT completed in March 2022.

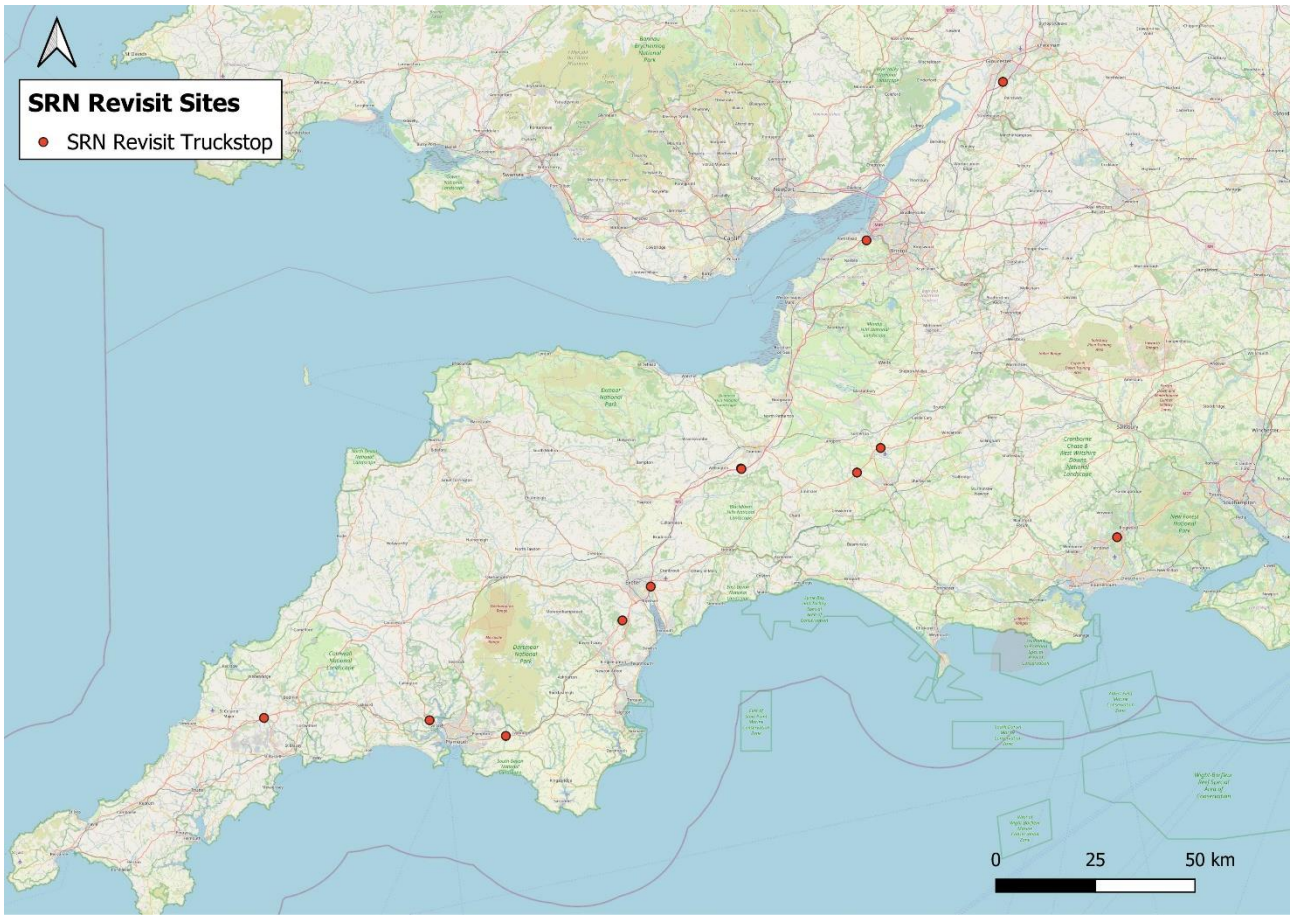
7.3.2.1 Sites

In total 12 sites were selected for retesting. This included five MSA's, four TRSA's and three independent truckstops. As per Table 7-7, a list of the sites visited is shown along with the site type. Figure 7-10 shows the geographical spread of sites retested.

Table 7-7: On-site facilities on the SRN selected for retesting

Site name	On-site parking type
American bar and grill	Independent truckstop
Avonheath HGV Park	Independent truckstop
Cartgate lodge picnic area	Trunk Road Service Area
Cornwall services	Trunk Road Service Area
Gloucester services northbound	Motorway Service Area (MSA)
Lee mills services - Westward Transport Cafe	Independent truckstop
Moto Exeter Services	Motorway Service Area (MSA)
Moto Saltash	Trunk Road Service Area
Podimore (Esso)	Trunk Road Service Area
Roadchef Taunton Deane Services Northbound	Motorway Service Area (MSA)
Roadchef Taunton Deane Services Southbound	Motorway Service Area (MSA)
Welcome Break Gordano Services	Motorway Service Area (MSA)

Figure 7-10: Geographical spread of on-site facilities on the SRN selected for retesting

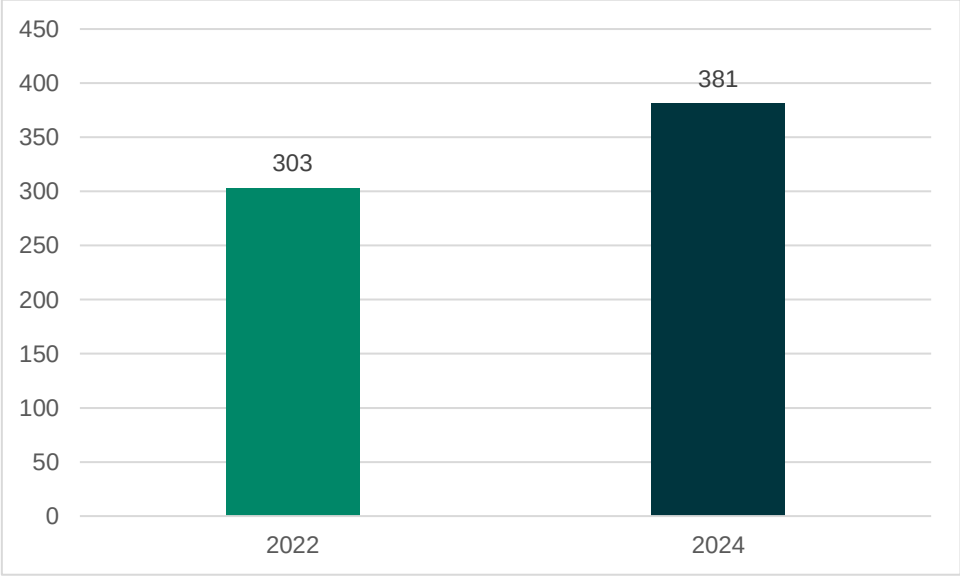


7.3.2.2 Vehicles observed

381 vehicles were observed across the selected on-site SRN sites that were retested in March 2024.

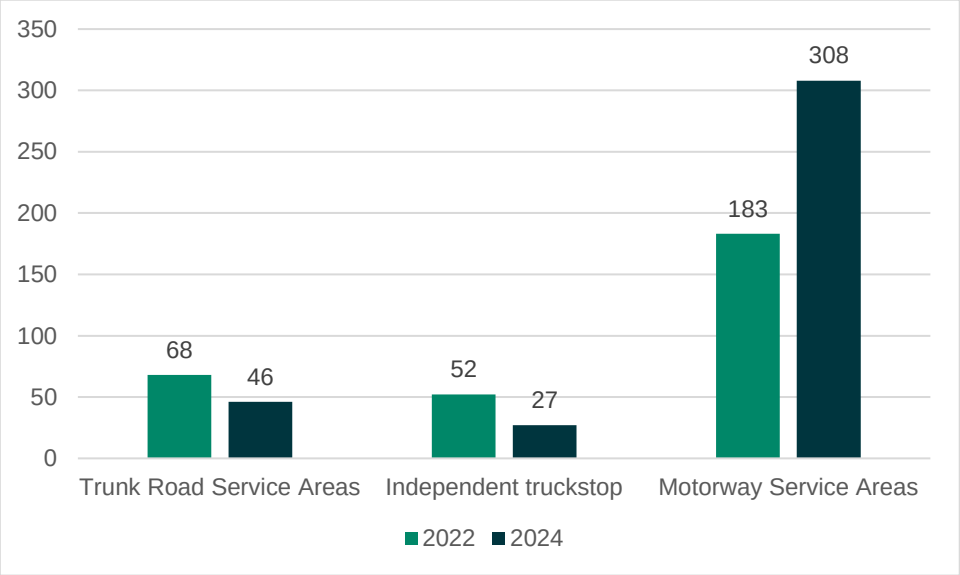
As per Figure 7-11, in 2022, 303 vehicles were observed at the same SRN sites as part of the DfT audits. This represents a 26 per cent increase in vehicles observed (78 vehicles) between 2022 and 2024.

Figure 7-11: Comparison of vehicles observed at selected on-site facilities on the SRN between 2022 and 2024



The increase in observed vehicles is driven by increased demand at Motorway Service Areas, as per Figure 7-12. Vehicles observed at TRA's and independent truckstops decreased when comparing 2024 to 2022.

Figure 7-12: Comparison of vehicles observed at selected on-site facilities on the SRN between 2022 and 2024 by truckstop type



As per Table 7-8, it shows the variation in vehicles between 2022 and 2024. The most notable change is the 145 per cent and 143 per cent increase in HGVs at Roadchef Taunton Deane Services Southbound and Welcome Break Gordano Services respectively between 2022 and 2024.

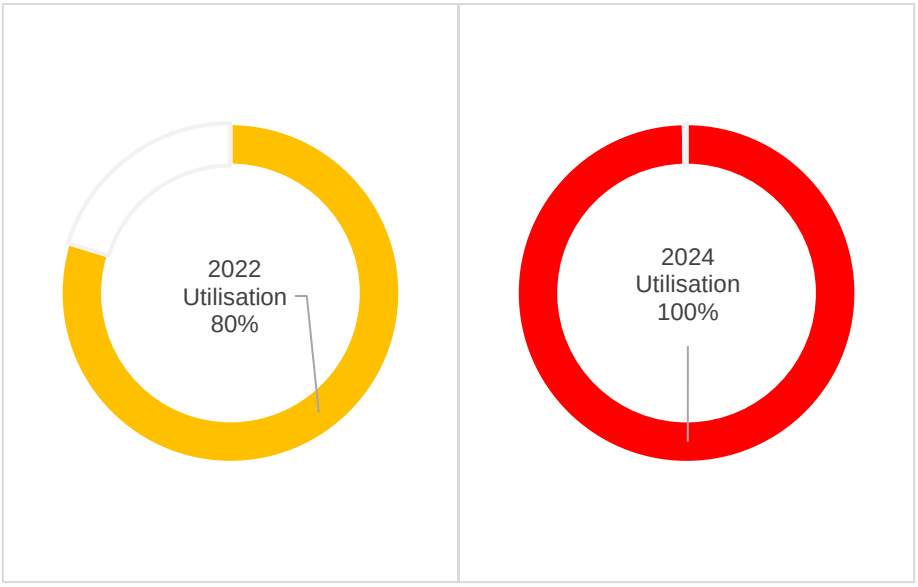
Table 7-8: Breakdown by site of vehicles observed between 2022 and 2024

Site name	On-site parking type	2022 – HGVs observed	2024 – HGVs observed
American bar and grill	Independent truckstop	12	6
Avonheath HGV Park	Independent truckstop	16	4
Cartgate lodge picnic area	Trunk Road Service Area	28	13
Cornwall services	Trunk Road Service Area	29	18
Gloucester services northbound	Motorway Service Area (MSA)	50	35
Lee mills services - Westward Transport Cafe	Independent truckstop	24	17
Moto Exeter Services	Motorway Service Area (MSA)	50	77
Moto Saltash	Trunk Road Service Area	1	0
Podimore (Esso)	Trunk Road Service Area	10	15
Roadchef Taunton Deane Services Northbound	Motorway Service Area (MSA)	17	35
Roadchef Taunton Deane Services Southbound	Motorway Service Area (MSA)	20	49
Welcome Break Gordano Services	Motorway Service Area (MSA)	46	112

7.3.2.3 Utilisation

As per Figure 7-13, the utilisation level for 2024 for the 12 retest sites was 100 percent. This is a 20 per cent increase from 2022. In alignment with the categorisation for lorry parking utilisation used by the DfT, this has changed from a serious to critical levels of parking capacity being utilised. Comparing this to all the on-site parking facilities on the SRN in the South West that were audited in 2022, as part of the national survey, the utilisation of on-site parking facilities was 64 per cent. Given the overall increase on the selected sites, it is likely that the overall utilisation may have increased throughout the South West.

Figure 7-13: Comparison of utilisation at selected on-site facilities on the SRN between 2022 and 2024



As per Figure 7-14, the change in parking utilisation category from serious to critical is driven by the increase in demand at MSAs. The utilisation at MSAs increased by 48 per cent. For TRSAs, the utilisation fell by 36 per cent from a critical to serious level of utilisation. For Independent truckstops, the utilisation fell by 42 per cent from a critical to acceptable level of utilisation.

Figure 7-14: Comparison of utilisation at selected on-site facilities on the SRN between 2022 and 2024 by truckstop type

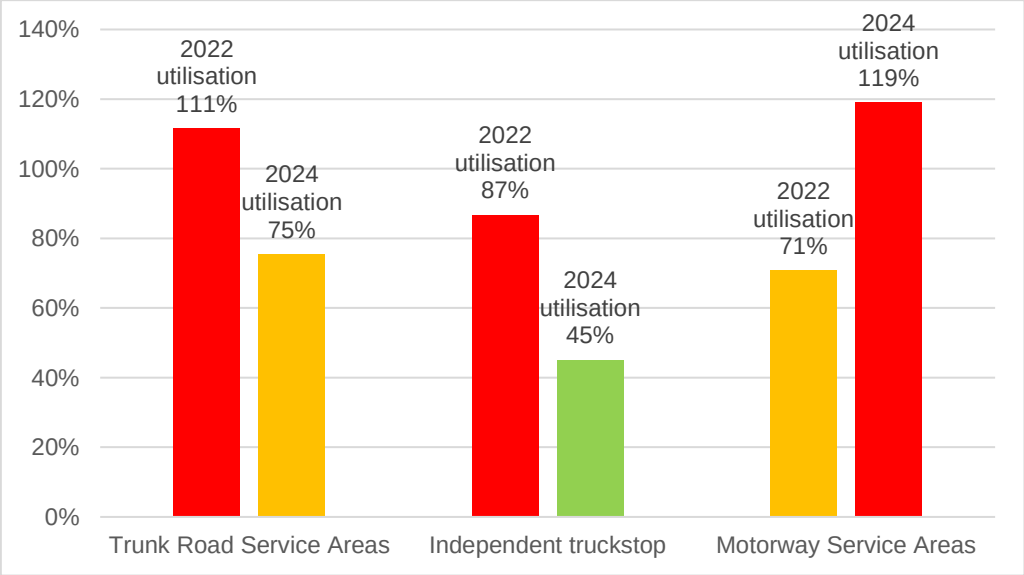


Table 7-9 provides a breakdown site by site comparison of their utilisation level and status between 2022 and 2024. It provides a mixed picture of some sites improving their utilisation meaning that there is more available space for HGVs to park. On the other hand, some sites have observed an increase in demand and therefore their utilisation status has changed, for example, Moto Exeter Services and Roadchef Taunton Deane.

Table 7-9: Breakdown by site of on-site utilisation between 2022 and 2024

Site name	On-site parking type	2022 utilisation levels		2024 utilisation levels	
American bar and grill	Independent truckstop	100%	Critical	50%	Acceptable
Avonheath HGV Park	Independent truckstop	80%	Serious	20%	Acceptable
Cartgate lodge picnic area	Trunk Road Service Area	127%	Critical	59%	Acceptable
Cornwall services	Trunk Road Service Area	138%	Critical	86%	Critical
Gloucester services northbound	Motorway Service Area (MSA)	100%	Critical	70%	Serious
Lee mills services - Westward Transport Cafe	Independent truckstop	86%	Serious	61%	Acceptable
Moto Exeter Services	Motorway Service Area (MSA)	88%	Serious	135%	Critical
Moto Saltash	Trunk Road Service Area	13%	Acceptable	0%	Acceptable
Podimore (Esso)	Trunk Road Service Area	100%	Critical	150%	Critical
Roadchef Taunton Deane Services Northbound	Motorway Service Area (MSA)	38%	Acceptable	78%	Serious
Roadchef Taunton Deane Services Southbound	Motorway Service Area (MSA)	33%	Acceptable	80%	Serious
Welcome Break Gordano Services	Motorway Service Area (MSA)	100%	Critical	243%	Critical

Welcome Break Gordano Services saw an increase in utilisation between 2022 and 2024. During the audits, a utilisation level of 243 per cent was observed. The site was considerably oversubscribed with HGVs. It is widely understood there is a shortage of on-site parking capacity for HGV drivers throughout England. Drivers often struggle to park after a certain period of the evening and resort to parking at off-site locations or park in an inappropriate location such as on a slip road.

There are opportunities, especially at MSAs, to better utilise parking capacity on-site and to flex where vehicles may park. Often spaces dedicated to coaches and cars are empty at night, as the demand for these spaces overnight is considerably less. At Welcome Break Gordano Services, HGVs were observed utilising the capacity of such areas, as per Figure 7-15 and Figure 7-16. As a result of this, over 60 vehicles were able to park at an on-site facility, meaning driver welfare and safety was supported. Had that not been the case, over 60 drivers would have needed to source a new on-site facility or park at an industrial estate or layby. Factors affecting the ability to do this include having enough driving hours to look for a new location and knowledge of suitable industrial estates and laybys in close proximity. Fully utilising the assets and capacity of on-site facilities should be explored further to help support HGV drivers access to safe and secure overnight parking.

Figure 7-15: HGVs utilising spare car spaces at Welcome Break Gordano Services

Figure 7-16: HGVs utilising spare coach spaces at Welcome Break Gordano Services

7.3.3 Improving and funding on-site facilities

Providing safe and secure parking for HGVs is essential to support driver welfare whilst out on the road. Drivers will have a variety of needs but the basic facilities required for overnight parking include having a space to park, access to toilets, access to showers and somewhere to eat. In accordance with the zero to five facility rating scale used by the DfT, a rating of three aligns to those needs. The findings from the MRN lorry parking audit found only one site had a rating of three. In comparison to all the SRN on-site parking facilities throughout the South West, 43 per cent of sites achieved a rating of three, as per Table 7-10. It also identifies a need to improve on-site parking facilities and to get more sites higher up in the ratings and provide those additional facilities for drivers.

Table 7-10: South West – ranking of on-site parking facilities on the SRN [19]

South West	Proportion of all on-site parking facilities on the SRN ranked at each level -					
Level of ranking	0	1	2	3	4	5
South West	5%	23%	27%	43%	2%	0%

7.3.3.1 Funding opportunity

In order to improve on-site parking facilities, it requires on-site facility operators to invest. To help operators, the DfT and National Highways are providing match funding to help support improving HGV driver facilities. These includes looking at ways to increase the HGV capacity of existing assets, driver welfare facilities including toilets, showers, rest areas, security for drivers including CCTV, fencing, lighting and decarbonisation initiatives including electric charging and solar.

There are currently two funding Schemes that are open to help improve lorry parking facilities for HGV drivers. The first Scheme is the National Highways Lorry Parking Facilities Improvements Scheme, which supports lorry parking operators with funding towards the improvement of HGV driver welfare facilities, parking, and security. National Highways will fund up to 50 per cent of the approved total project costs, which will be paid on completion of the works. This opened on 6 March 2023 and operators must be able to demonstrate that the work can be completed by 30 March 2025. There is no limit to the total project costs and all applications that meet the criteria will be considered. For on-site facility operators interested in applying to the National Highways' Scheme for funding to carry out improvements at their lorry parking facility relating to welfare facilities for HGV drivers, HGV driver and site security, and HGV parking capacity, including spaces and layout. Further information can be found online[20].

The second Scheme is the Department for Transport HGV parking and driver welfare grant scheme. Like National Highways, it supports improvements to facilities to support drive welfare. There is a limit of £315,000 per site on this Scheme. Further information can be found online and how to apply[21].

Peninsula Transport and Western Gateway STBs encourages on-site facility operators to make the most of this opportunity and apply for funding to improve lorry parking facilities for HGV drivers.

7.3.3.2 Case study

To showcase the opportunities and success of the grant, a case study from National Highways was developed for York Lorry Park. It highlights the potential improvements on-site facility operators in the South West could deliver for its HGV drivers.

Overview

York Lorry Park is an independent family-owned business, established in 1871 and now in its sixth generation of the Stephenson family. The Lorry Park is located on the A64 (the Leeds to Scarborough trunk road), 13 miles from the A1 and the main arterial road network. It is adjacent to the A1079 (to Hull and Humber Bridge). There is a lorry parking capacity of 74 spaces.

York Lorry Park received funding through the National Highways Lorry Parking Improvement Scheme to enhance driver facilities, safety, and well-being after a successful application in January 2023. The scheme launched in March 2023 and

[19] National survey of lorry parking 2022 – Part one, Department for Transport

[20] https://find-government-grants.service.gov.uk/grants/national-highways-lorry-parking-facilities-improvements-scheme-1#apply

[21] https://www.gov.uk/government/publications/hgv-parking-and-driver-welfare-grant-scheme-guidance-for-applicants/hgv-parking-and-driver-welfare-grant-scheme-guidance-and-online-application#:~:text=The%20HGV%20parking%20and%20driver%20welfare%20grant%20scheme%20provides%20match,rest%20areas%2C%20truck%20wash%20facilities

provides funding of up to 50 per cent of the approved capital cost of an improvement project. Project construction commenced in October 2023 and was completed in December 2023.

In the case of York Lorry Park, funding was granted for general enhancements to welfare, specifically targeting upgrades to toilets and shower facilities. Figure 7-17 shows the facilities before works were carried out in 2023.

Previous facilities

York Lorry Park had dated toilet and shower facilities with a communal changing area. It was agreed that drivers would benefit from individual wet rooms rather than a communal changing area and domestic cubicles. Providing private changing for men and women was considered key for improvements to the safety and well-being of drivers. Features of the previous facilities were:

- 2 small shower cubicles in the men's toilets
- Communal changing area
- 2 toilet cubicles
- 4 urinals

Upgrades to facilities and associated benefits

The upgrades focus on improving drivers' safety and well-being by improving drivers' experience through the upgrade of the showers and toilet block from communal changing and domestic cubicles to individual wet rooms, incorporating private changing for men and women.

Access to showers and toilets is a basic need and known concern for lorry drivers. In a Department for Transport (DfT) driver survey undertaken in 2022, drivers were asked which features they consider most important when parking at an onsite facility with a charge. Well maintained toilets and showers were the key feature of an on-site facility with a charge for respondents, with 99 per cent of drivers selecting this as very or quite important. The new facilities include:

- Two men's wet room showers together with private cubicle changing areas and washbasins
- Four men's urinals and three cubicles together with washbasins
- Ladies' wet room shower together with private changing area and washbasins
- Five ladies' cubicles, and washbasins
- Disabled toilets

Before and after improvements

As per Figure 7-17, it shows the before and after transformation of the facilities that was delivered for drivers as part of the match funding.

Figure 7-17: Before and after images of improvements to York Lorry Park

7.3.3.3 South West engagement

A number of on-site facility operators in the South West are aware of the opportunities around match funding for improving driver facilities. A number of sites in the South West have enquired with the Department for Transport about the funding and are pursuing obtaining the funds to improve their facilities. Table 7-11 provides a breakdown of the lorry parks within the South West to date who have secured funding to improve their facilities. Funding round number three is currently in progress.

Table 7-11: Sites that have secured match funding to improve their facilities from the Department for Transport

Funding round number	Applicant company name	Applicant site name	Applicant site county	Key improvement area
Window 1	F & S Gibbs Transport Services Ltd	Markay Estate	Wiltshire	Multiple areas of improvement
Window 1	Onroute Truckstops Ltd	Swindon Truckstop	Wiltshire	Multiple areas of improvement
Window 1	William Gilder Ltd	Teddington Hands Truck Stop	Gloucestershire	Multiple areas of improvement
Window 2	Moto Hospitality Ltd	Moto - Exeter	Devon	Multiple areas of improvement

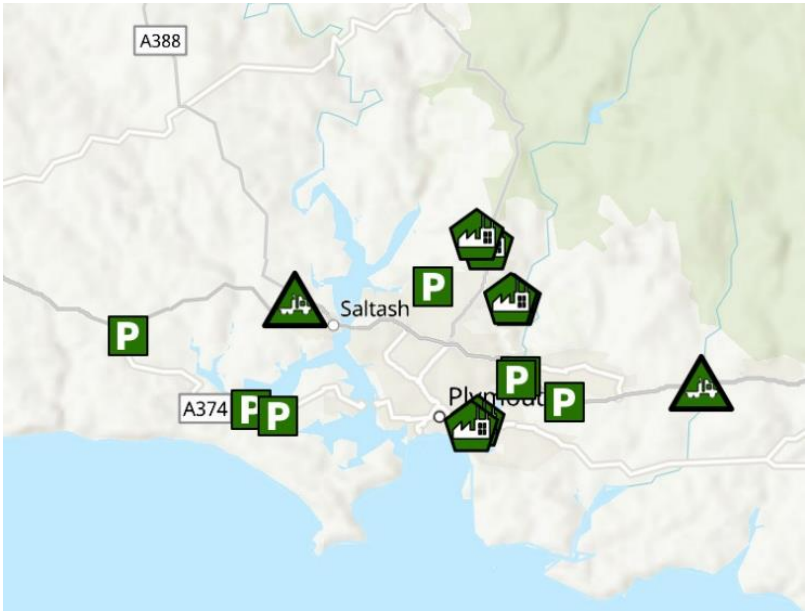
A number of sites in the South West have enquired with National Highways about the funding and are pursuing obtaining the funds to improve their facilities.

In order to further encourage South West truckstop operators to make the most of the funding opportunities available for on-site facilities, a letter was sent out on behalf of Peninsula Transport and Western Gateway to South West based on-site facility operators. This included making them aware of the match funding available, the opportunity to improve their facilities and support driver welfare and directions on where they can find out more information.

7.3.4 Plymouth lorry parking

As part of the lorry parking audits, a review of lorry parking was conducted for the Plymouth area. This was to understand where HGVs were parked given the compact geography of Plymouth and the demand for freight at the ports. This includes identifying opportunities drivers had for parking at on-site parking locations, industrial estates and laybys. A total of 15 sites were visited including two on-site facilities, six laybys and seven industrial estates. Figure 7-18 shows the geographical spread of these sites around Plymouth.

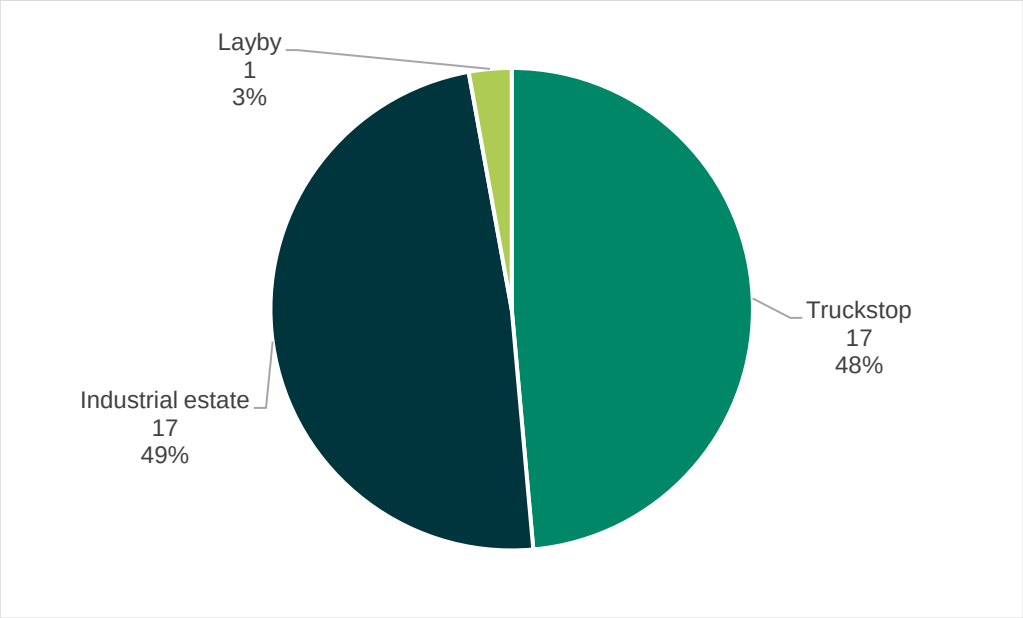
Figure 7-18: Geographical spread of lorry parking sites in the Plymouth area



7.3.4.1 Vehicles observed

In total 35 vehicles were observed at seven out of the 15 sites. As per Figure 7-19, 48 per cent of these were at on-site facilities, 49 per cent at industrial estates and three per cent at a layby. 74 per cent of the vehicles observed were UK registered vehicles.

Figure 7-19: Vehicles observed by parking site in the Plymouth area



7.3.4.2 Utilisation

Two on-site facilities were visited as part of the review of lorry parking in the Plymouth area. Lee Mills Services and Moto Saltash. At Lee Mills Services, a total of 17 vehicles was observed giving it a parking capacity utilisation of 61 per cent, acceptable in accordance with the DfT categorisation for lorry parking utilisation. No HGVs were observed at Moto Saltash at the time of the audit. This is similar to the DfT national survey of lorry parking which identified one HGV during the 2022 audit. On the night of the audit, the majority of the capacity was utilised by coach parking for the adjacent Travelodge hotel located on-site, meaning very limited opportunities for HGVs to utilise the parking capacity. The Tamar Bridge is also in close proximity to the site which charges vehicles to cross the bridge heading towards Plymouth. This may have had a bearing on the presence of HGVs at this site.

7.3.4.3 Observations

As part of the review of lorry parking in Plymouth, desktop research and roving surveys through Plymouth were conducted in order to identify locations where HGVs may be parked. Given the geography of Plymouth and its compact development, there are limited opportunities for driver to find a spot to park overnight. Drivers arriving for the port well in advance of their sailings have limited options on where to park. They will need to park at an on-site facility, industrial estate or laybys away from the port. Five out of the seven industrial estates had a HGV parked overnight, of which 41 per cent of the HGVs parked were non-UK registered, likely linked to the port traffic. In terms of future possibilities for more lorry parking capacity in the area, further exploration is required to understand where these could be located.

7.4 Conclusion

This study has assessed the lorry parking situation on the MRN and at key ports and airports. It is widely understood that HGVs move throughout the whole of the South West region and not just on the SRN. It has brought about a better understanding of lorry parking in the region and helped to fill gaps in knowledge.

330 sites were visited on the MRN. 279 vehicles were observed at on-site parking locations, laybys and industrial estates. It has shown the popularity of parking at off-site locations given the poor number of on-site parking facilities available for drivers. This is backed by their low utilisation score of 35 per cent. The few facilities available at on-site locations will further affect the utilisation scoring. One site had a utilisation scoring of critical, likely due to its proximity to Poole Harbour and the Port of Poole.

In addition to the MRN sites, a number of SRN sites were revisited to understand their level of change from when the surveys were completed for the DfT in 2022. It found that the vehicles observed had increased by 26 per cent between 2022 to 2024. As a result, the on-site parking location utilisation had increased overall from 80 per cent (serious) to 100 per cent (critical). On a site by site basis, the results are variable with some performing better and others worse. A key factor was the significant increase in HGVs at Welcome Break Gordano Services. This was as a result of HGVs using spare capacity in the car and coach parking areas. This prevented over 60 vehicles having to find alternative parking arrangements. This initiative of flexing the assets at on-site facilities and allowing HGVs to park in other destinated locations is a good way to encourage more HGV driver to park at on-site facilities, therefore supporting their welfare and safety.

In addition to encouraging more drivers to park at on-site facilities, there is also a need to improve facilities. Lorry parking operators have the opportunity to improve this through access to match funding to improve their facilities. Four sites in the South West have been successful in securing DfT match funding. Further sites are encouraged to approach the Department for Transport and National Highway to begin the journey of have better facilities to support HGV drivers.

A focus was made on HGV parking in Plymouth. A number of sites were identified with the majority of HGVs parked at on-site facilities and industrial estates. There are limited parking options within Plymouth and in close proximity to the port. Further opportunities need to be explored as to how lorry parking capacity can be increased for the area.

7.5 Next steps

The next step for this intervention will be to continue to support HGVs drivers in the push to improve on-site facilities. Further engagement with lorry parking operators in the region could take place to help in supporting them to apply for the match funding to improve facilities. Furthermore, explore ways in which drivers can be supported on the MRN routes.

8. RD15 – Backloading trial

Road intervention – RD15	
Intervention name	Promote a trial of the use of a load and vehicle matching exchange to reduce empty running for 10 hauliers for a year.
Intervention description	Include how local businesses can benefit from using utilised empty vehicles and using local hauliers to create a circular economy.
Theme	Technology
Timescale	Short term
Intervention owners	Transport Exchange and Sub-national Transport Bodies – Peninsula Transport and Western Gateway

Progress to date	The backloading trial has had a positive start with recruiting members to the trial and starting to obtain feedback. Data provided from Transport Exchange has shown there are significant opportunities for South West Hauliers to fulfil unallocated loads, helping to reduce their empty running. With over 10,000 unallocated loads in the Peninsula Transport region and over 23,000 unallocated loads in the Western Gateway region, there are opportunities in both STB regions. As the trial progresses, feedback will be obtained from the members later in the year.
Next steps	It will be beneficial to feature some of the members at future South West Freight Forum meetings sharing the learnings from the trial. Additionally, it will be positive for Peninsula Transport and Western Gateway to disseminate the learnings from the trial at key events in the presence of other STBs throughout England to show the value of this practical freight intervention. The project team will continue to progress the trial including recruiting members on the trial, reviewing initial results, having a six month review and then reporting the findings after the 12 months has concluded.

8.1 Introduction

Intervention RD15 in the South West Freight Strategy aims to reduce empty running, which is a significant issue for the logistics industry in the UK. This refers to when trucks are running without a load, either because they are going to pick up or have just dropped off a load or are positioning, for example between depots.

With RD15, Peninsula Transport and Western Gateway recognise the benefits of backloading and therefore have made it a priority to offer a trial scheme in the South West to offer 10 small to medium sized operators in the South West a one year free trial access to Transport Exchange backloading platform. This offers a significant benefit to operators who may not have been able to justify the cost of an annual membership fee or had the time to research and assess the investment benefit to their organisation.

The aim is to monitor the use of Transport Exchange platform by the 10 small to medium size hauliers for a year to see if they can reduce their empty running and the impact of this. This includes considering how local businesses in the South West can benefit from using empty vehicles and using local hauliers to create a circular economy.

8.2 Methodology

As part of running the backloading trial, there are a number of steps in place to ensure the success of the trial and maximise its benefits and learning outcomes. These include:

- Liaising with Transport Exchange to find and confirm 10 logistics organisations are trained and suitable.
- Arrange and attend a site visit to Chippenham Call Centre.
- Check figures from month one and hold meetings with Peninsula Transport and Western Gateway, along with invited Local Authorities to review initial figures.
- Check figures after six months and ensure project is on target.
- End of year review of Transport Exchange report to bring out all relevant findings.
- Disseminate results via RHA/Logistics UK/STBs to include a written article and a PowerPoint presentation on the merits and pitfalls of this type of scheme.
- These tasks form part of the ongoing project that will continue into Year 3 as the final organisations join the trial and the results start to come in.

8.3 Findings to date

Throughout Year 2, Peninsula Transport, Western Gateway and AECOM have been progressing the backloading trial, in partnership with Transport Exchange, to bring on board 10 logistics organisations. It is recognised that this practical intervention will help reduce the amount of empty running in the South West and there is opportunity to improve the efficiency of freight being moved by road. Early indications from the platform shows there are opportunities for hauliers in the South West to help fulfil empty loads and improve the efficiency of goods being moved via road.

8.3.1 Transport Exchange and Chippenham site visit

The project team at Peninsula Transport, Western Gateway and AECOM conducted a site visit to Transport Exchange's Chippenham office where their customer support centre is located, the team which will support logistics organisations on the backloading trial. The day consisted of introductions, engagements with the Transport Exchange team, presentations and discussions around next steps.

8.3.1.1 Overview

Transport Exchange has over 8,500 members on the system which are able to choose from around 2.2million bookings per year. This system algorithms are designed to ensure that organisations are offered potential backloads in the geographical areas they are to maximise the chance of becoming fully utilised. Operators on the system cover around 223 million miles per year.

Transport Exchange is heavily focused on environmental impacts and is keen to ensure that empty running is reduced. Around 29.9 per cent of HGVs ran empty in 2022[22]. This has an impact on the level of carbon emissions with unnecessarily burnt fuel. Approximately 19.5 million of CO_2 was produced from the freight and logistics sector in 2019[23]. With this there are opportunities in aggregating journeys by combining part loads, ensuring vehicles are fully utilised and

[22] RFS0125 – Department for Transport 2022

[23] "Decarbonising Transport" – Department for Transport 2021

that smart collaboration is promoted. Where a company might not have a full load, there is opportunity to share loads to ensure the vehicle is fully utilised.

Transport Exchange is keen to connect with the local economy including:

- Supporting for local businesses – growth and sustainability.
- **Reduction of carbon footprint** – shorter delivery routes, reduced fuel consumption and lower carbon emissions.
- **Community engagement** – embedded in the communities they serve.
- **Retention of revenue within the community** – economic growth and stability in the area.

8.3.1.2 South West demand

For the organisations involved in the South West backloading trial, there is significant opportunity to reduce their empty loads using the Transport Exchange system. For example there were 30,785 bookings completed on Transport Exchange between March 2023 and March 2024. This equated to over 4.85 million miles. This was based on vehicles greater than 7.5 tonnes and the loads destined for the South West. This shows that there is significant demand in the South West that trial members can access.

Around 11 per cent (rounded) of loads were completed by South West operators equating to approximately 537,844 miles and 4,492 bookings. This measures to around 592 tonnes of CO_2. Figure 8-1 demonstrates the bookings completed by South West operators for bookings starting outside of the region and destined for the South West. It can be seen that the closer the destination is to the South West the more bookings were completed by South West operators. Some of the key regions include the West Midlands, along with movements within the South West, as reported by Transport Exchange.

Figure 8-1: Geographical spread of bookings completed by South West operators for journeys originating outside of the South West and the key South West routes

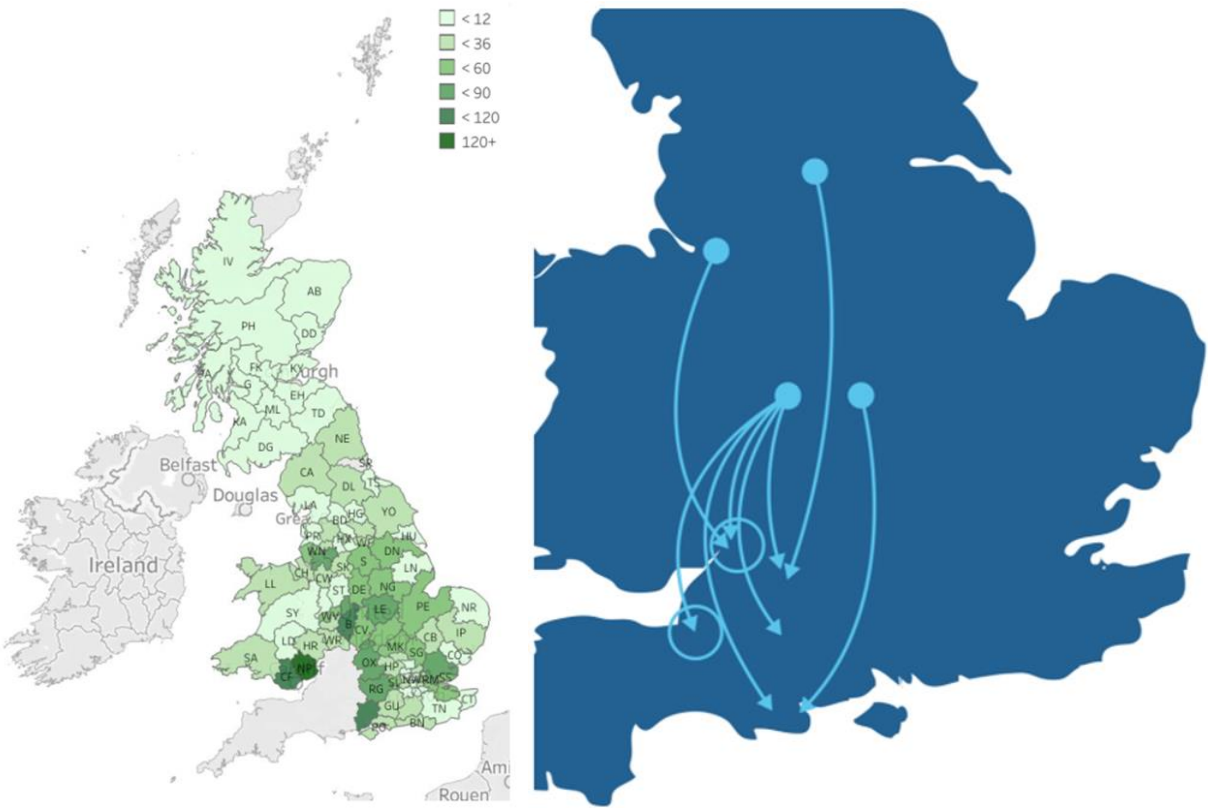
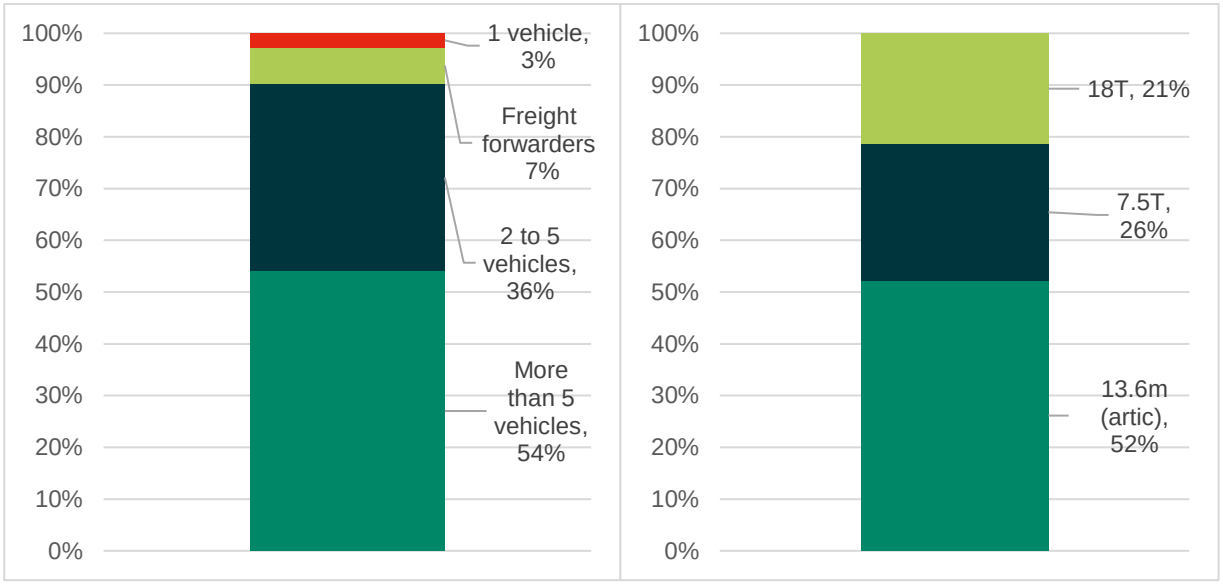


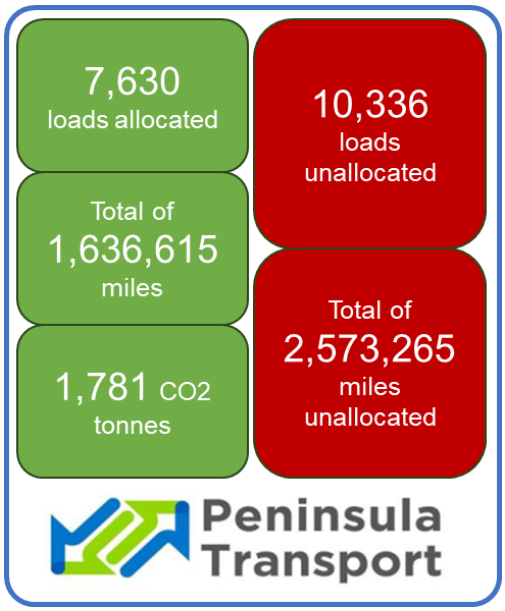
Figure 8-2: Proportional breakdown of miles covered in the South West by fleet size (L) and by vehicle type (R)



8.3.1.3 Peninsula Transport demand and opportunities

Figure 8-3 shows that 7,630 loads were allocated within the Peninsula Transport, which equates to 1.6 million miles. There is an opportunity for more work to be picked up by South West hauliers. Figure 8-3 demonstrates that over 10,000 loads were unallocated and potentially a missed opportunity for operators in the South West to backfill their vehicles. Transport Exchange reported there were opportunities for loads in the East Midlands and West Midlands.

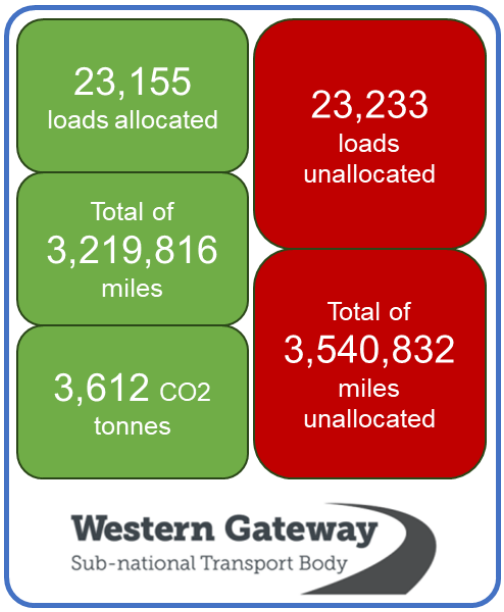
Figure 8-3: Demand and opportunities for back filling loads in the Peninsula region



8.3.1.4 Western Gateway demand and opportunities

Figure 8-4 shows that 23,155 loads were allocated within the Western Gateway, which equates to 3.2 million miles. There is an opportunity for more work to be picked up by South West hauliers. Figure 8-4 demonstrates that over 23,000 loads were unallocated and potentially a missed opportunity for operators in the South West to backfill their lorries. Transport Exchange reported there were opportunities for loads from the Yorkshire and the Humber and West Midlands.

Figure 8-4: Demand and opportunities for back filling loads in the Western Gateway region



8.3.2 Backloading trial members

8.3.2.1 Recruitment and engagement

The aim of this is to preferably have five operators from each of the Peninsula Transport and Western Gateway areas involved in this intervention.

An engagement phase has been undertaken through a series of email and phone conversations to understand the level of interest from operators and to get 10 operators onboarded. This included calls with both the operator and system provider to help familiarise them with the type of system and showcase the benefits of the platform for their organisation.

Transport Exchange has used its extensive social media presence via online searches, LinkedIn and YouTube to advertise the trial and to recruit members. AECOM has provided Transport Exchange with an extensive list of operators in the South West to be approached as part of recruiting members on to the trial. Suggestions from Local Authorities and from the Steering Group have also been received and approached. In total, four companies have been onboarded on to the trial throughout Year 2. Additional companies will be onboarded in Year 3.

8.3.2.2 Trial member feedback to date

To date members have started to provide their feedback on the Transport Exchange backloading system. These will continue to develop over the course of the trial; however, it is positive to hear their experiences of the system to date. These include:

- Long term business opportunities
- Incoming revenue
- Tactical loads
- New business relationships with their existing network

This demonstrates the key aim of the trial of reducing empty running and encouraging a circular economy by using local hauliers.

8.3.2.3 Opportunities to share learnings

With the trial continuing and further reporting on the trial in due course, it provides an opportunity to have members from the trial share their experience with the South West Freight Forum. Peninsula Transport and Western Gateway very much look forward to welcoming trial members. There is also an opportunity for the STBs to showcase this practical intervention that forms part of the South West Freight Strategy at a number of events they attend, including the STB annual conference.

8.4 Conclusions

The backloading trial has had a positive start with recruiting members to the trial and starting to obtain feedback. Data provided by Transport Exchange has shown there are significant opportunities for South West Haulier to fulfil unallocated loads, helping to reduce their empty running. With over 10,000 unallocated loads in the Peninsula Transport region and over 23,000 unallocated loads in the Western Gateway region, there are opportunities in both STB areas. As the trial progresses, feedback will be obtained from the members during the year and reported at the end of the trial in 2025. It will also be beneficial to feature some of the members at the South West Freight Forum meetings to share the learnings from the trial. Additionally, it will be positive for Peninsula Transport and Western Gateway to disseminate the learnings from the trial at key events in the presence of other STBs throughout England to show the value of this practical freight intervention.

8.5 What next?

The project team will continue to progress the trial including recruiting members on the trial, reviewing initial results, having a six month review and then reporting the findings after the 12 months has concluded.

9. A4 – Drones

Aviation intervention – A4	
Intervention name	Review suitability and potential locations that could benefit from drone technology.
Intervention description	Include a review of areas which are labelled as difficult to reach by the supply chains and whether they could benefit from drone technology. Trials could include Isles of Scilly and remote rural areas.
Theme	Technology
Timescale	Medium term
Intervention owners	Sub-national Transport Bodies – Peninsula Transport and Western Gateway

Progress to date	This review has looked to demonstrate some of the key advantages of using drones for deliveries in different industries, especially for hard to reach areas, particularly applicable for the South West given its geography. Drones can also be more environmentally friendly, which can help the South West the region's path towards decarbonisation and can also reduce costs and increase efficiency for businesses and customers. It is noteworthy that the South West has been involved in a number of drone trials, especially those between mainland Cornwall and the Isles of Scilly, and looks set to continue this involvement. The GATES (Governance And Trust in Emerging Systems) project aims to delve deeper into what is needed to see drones in regular operations including what governance is required. This project is a multi-disciplinary analysis of challenges and prospects for UK drone delivery and has been carried out by the University of Bath, University of the West of England and University of Exeter. There are a number of aspects to overcome including the levels of acceptance for drones. Given the recent growth in drones and the GATES project, there is an opportunity for South West to be the driving force for drone use in the future. A variety of stakeholders are involved including government, regulators, freight industry, drone operators, customers and others. A number of workshops have taken place with stakeholders, including an additional workshop specifically to enable members of the South West Freight Forum to contribute towards the project. This workshop took place on the 20th May 2024 and was attended by the STBs, Local Authorities, Connected Places Catapult and AECOM.
Next steps	The next step for this intervention will be to continue to develop the opportunities of drones and to collaborate with industry. The challenges around drones need further discussion amount various stakeholder groups to look at how best drones can be regulated, managed and implemented for the benefit of the freight sector. There are some key areas within the South West that would benefit from drones. Establishing which areas would be useful to start to build up the use case for drones.

9.1 Introduction

Intervention A4 in the South West Freight Strategy aims to review the suitability of drones and the opportunities for the region. More and more goods are taking to the skies using the Advanced Air Mobility (AAM) ecosystem, often referred to simplistically as drones. The expanding and disruptive technologies representing AAM encompass larger Electric Vertical Take-off and Landing (eVTOL) aircraft, helicopters, airships, automated air traffic control systems, and today includes both manned and unmanned aerial systems.

These aircraft provide value in a number of ways. They are able to service areas not traditionally included within the air transportation network due to the innovative way they take off and land, in a vertical fashion, reducing the ground footprint required. Uncrewed drones can move cargos into areas of high risk, including for humanitarian support and in adverse environmental conditions, providing a previously unachievable level of access to services and critical logistics systems in these areas.

Speed of service, in both remote areas with no or little-developed transportation networks or in urban environments is even more advantageous. Instead of battling traffic, the aircraft can fly point-to-point, meaning the turnaround time and delivery service levels can far exceed today's next-day customer expectations.

This review includes looking into the governance of drones in order to make drones a viable option, looking at drone operations, policy, planning and regulation. Case studies have been put together to help identify where drones have been tested, trialled and studied. In recent years there has been significant interest in the potential of drones for several different uses, including for deliveries. There have been many different trials that have taken place both within and outside the South West to help further understand the capabilities of drone technologies as well as considerable additional research that has been undertaken.

9.2 Methodology

This review provides an overview on drones including looking into aspects around governance in order to make drones a viable option for last-mile deliveries, through desktop research and stakeholder engagement. The University of the West of England (UWE) has been doing work on drones which included some industry workshops. This was part of UWE's GATES project to which members of the STBs and AECOM attended and contributed towards the project findings. A workshop on drones was set up on the 20th May 2024 and the members of the South West Freight Forum were invited to join. The findings from the workshop are included as part of this review.

9.3 Findings

9.3.1 Opportunities and limitations of drones

There are considered to be several opportunities of using drones as part of freight and logistics operations. These include[24] [25]:

- Deliveries can be faster and more efficient – Drones can navigate obstacles faster than traditional delivery methods which can speed up delivery compared to more traditional delivery methods, especially for time-sensitive deliveries.
- Drones can be more environmentally friendly – Due to being electrically powered, drones emit zero emissions, which can make them a greener option compared to conventionally-fuelled vehicles.
- Easier access to remote or hard to reach areas – Drones can make deliveries to hard to reach areas, such as islands, much faster than conventional delivery methods.
- Real-time tracking – Drones that are fitted with a global positioning system (GPS) can be tracked in real-time, meaning customers and businesses know where deliveries are at all times whilst being transported.
- Reduced cost – Drones can require minimal infrastructure and can be operated remotely which can reduce costs of personnel involved in operating them.
- Increased convenience – Where drone deliveries are specifically timed, this can mean that customers do not need to wait around for parcels to arrive in the same way they may need to for conventional delivery methods.

There are also a number of limitations. These include:

[24] https://discoveryoftech.com/benefits-of-drone-delivery/

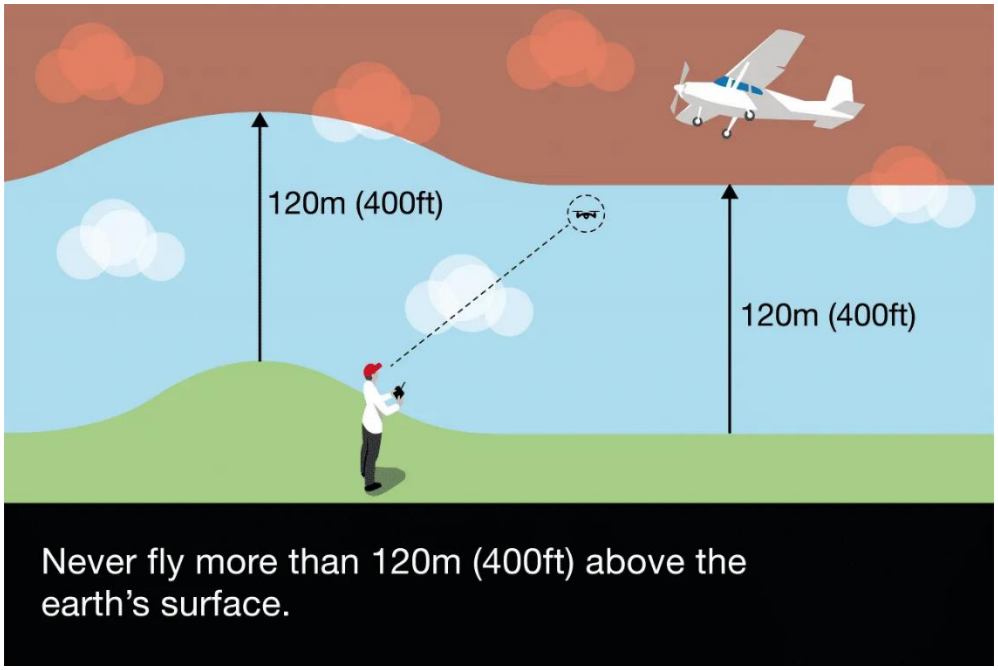
[25] https://www.droneup.com/2022/07/01/3-big-benefits-drone-powered-retail-delivery

- **Weight capacity** – Depending on the size of the drone will determine the weight capacity it can carry. For many of the smaller drones, the weight capacity will be limited.
- **Limited range** – There is a limited range drones can travel due to the limited battery life. Other factors affecting range include the weight of the cargo and the size of the drone.
- **Weather dependency** – Poor weather conditions can prevent drones from operating, which in turn can delay the delivery of goods. A particular issue for regions where the weather is unpredictable.

9.3.2 Drone regulations

Under the Air Traffic Management and Unmanned Aircraft Act 2021, the UK police have powers to regulate the use of drones. As of 2024, the Civil Aviation Authority of the United Kingdom (CAA), the nation's governing body for aviation matters, has implemented a comprehensive and robust set of drone laws. In the UK, the legal drone height limit for drone flying is 120m (400ft) (Figure 9-1).

Figure 9-1: Legal drone height limit



The below provides a breakdown of the UK 2024 drone laws:

- Drone operators must be at least 12 years old to fly independently.
- Drones are not permitted to fly higher than 400 feet (120 meters).
- Operators must maintain a line of sight with their drone at all times.
- Permission is required before flying in restricted airspace.
- Do not fly your drone within a 5-kilometer radius of airports.
- A minimum distance of 50 meters must be maintained from uninvolved persons.
- Drones below 250 grams are permitted to fly closer and over people.
- Drones weighing 250 grams or more must be operated at least 150 meters away from parks, industrial areas, residential zones, and other built-up locations.
- If a drone is equipped with a camera, the operator must register for an Operator ID with the CAA.
- Insurance is mandatory for commercial drone use.
- Compliance with these regulations is required during both daytime and nighttime operations.

9.3.3 Drone technology

As discussed, drones currently have weight, size and range limitations that restrict their use for freight across many potential applications. As the technology improves there may be potential for further use.

The other key limitation is cost. Although the infrastructure costs can be low for drones, the overall cost is higher in comparison to other forms of transport because of the limited carrying capacity of drones. The freight sector is highly competitive with very narrow profit margins. Any means of transportation which is more costly is likely to be rejected by customers and freight operators. With freight being a derived demand there is constant pressure to ensure that costs relating to the transport of goods are low. This favours road transport, with lower fixed costs and which can provide

greater flexibility in terms of route options and directly link depots to customers. Drones would initially require goods to be transferred to a road vehicle and then to the drone for the last mile delivery.

There are also costs associated with handling and storing goods. For example, transferring a consignment of goods from one vehicle or mode to another incurs time and cost penalties. If any process involving drones requires a first and last 'mile' road leg for example, then this may result in higher costs when compared to a single movement. This is as a result of additional infrastructure being required, handling costs, administration and other costs such as insurances.

As the journey using an eVTOL is more direct, the overall mileage is lower, however the costs are higher. Despite a predicted significant drop in costs for eVTOLs and those associated with vans remaining similar, by 2035 they will still exceed road transport costs. This remains the case even when societal costs relating to reduced CO_2 emissions are factored in.

This represents a significant barrier to take up of the technology and one which is likely to remain in place into the medium/long term.

Figure 9-2 compares the use case cost of using drones compared with the counterfactual costs i.e. the cost of using traditional delivery methods. In 2025, this shows the estimated costs of using drones to be 112 per cent higher compared with the cost of using traditional delivery methods.

Figure 9-2: Change in Cargo Delivery use case and counterfactual cost[26]

9.3.4 Weather

Weather events can help strengthen the case for the use of drones or hamper their effectiveness. For example, in the events of floods (and resultant landslides and other impacts) drones can cross affected terrain, where road and rail freight may be unable to pass. This provides resilience to the supply chain when transport infrastructure is affected by weather events (or maintenance issues).

However, drone flights may be affected by high winds and as such may not be able to take off in certain conditions, depending on the model. In this event drones would be less reliable than alternative means of transport.

Reliability is crucial to the supply chain and to ensure resilience, organisations may be required to hold larger inventories if they cannot rely on regular replenishment, with associated costs passed onto the customer.

9.3.5 Sector analysis

In this section the main freight commodity sectors are considered and whether there is a likelihood of drones being used to support goods movement. Table 9-1 and below explores the likely industrial sectors drones may be operational within.

Table 9-1: Industrial sectors and the likely application opportunity of drones

Likely applications	Less likely applications
Pharmaceuticals – urgent drugs / blood supplies	Containers (Intermodal)
Surveys for Construction sector	Construction sector movement of materials
Agricultural surveys and crop spraying	Agricultural supplies

[26] Advanced Air Mobility – UK Economic Impact Study, PwC

Parcels/Mail – hard to reach areas e.g. islands	Retail Home delivery – not for most deliveries
Retail Home delivery – hard to reach areas	Food and Drink – trunking
Food and Drink – fast food delivery	Food and Drink – regular home deliveries
Automotive – urgent components	Automotive – not for most parts / finished cars
Manufacturing – urgent components	Chemicals/Fuel
Military/Defence – niche applications	Manufacturing – most of the supply chain
Off-shore Wind Farm or Oil rigs	Logistics - not for most deliveries
Ship repair / maintenance	
Infrastructure providers	
Emergency Services	
Weather data collection and reporting	

Table 9-2 provides a summary of commodities/goods sector that align to drone capabilities. Further information can be found in Appendix 3.

Table 9-2: Commodities/goods sectors that align to drone capabilities

Sector/Commodity Groups	Nature of Freight	Applicability to Drones	Opportunities	Barriers
Parcels/Mail	Challenging delivery windows, often light high value goods. Highly competitive sector	Potentially high, with drone technology well capable of transport associated consignments quickly	Short term – time sensitive deliveries and harder to reach places. Middle mile parcel movements are also likely. Longer term - Household deliveries	Costs are generally lower for road freight and supply chains are well established and offer direct B2C, B2B links
Pharmaceuticals/Medical	High value, light, often personalised consignments. Often very time sensitive and may be temperature controlled.	Potentially high, with drone technology well capable of transport associated consignments quickly	Short term – time sensitive deliveries and harder to reach places. Middle mile parcel movements are also likely. Longer term - Household deliveries	Costs are generally lower for road freight and supply chains are well established and offer direct B2C, B2B links
Construction	Bulky, heavy goods that are often not time sensitive or are stored in bulk	Limited. Many types of drones would be able to transport payload	If a particular tool was required on site	Goods often too heavy, typically large inventory and not always time sensitive
Retail	Established supply chains. NDC>RDC>Store. Usually, consolidated loads from suppliers	Limited given nature of supply chain, however higher capacity drones may have a role	Could be used for quick inventory replenishment	Established supply chain, large consolidated loads, inventory often kept in store.
Intermodal	Containers used to shift goods long distances and between modes. Facilitates international trade.	Limited given dimension, weight and supply chain.	Where transport connections, topography are poor or there are natural barriers there may be a business case for drones.	Dimensions and weight of containers. Long range requirements.
Agriculture/Livestock	Goods may be time sensitive. Value varies by commodity type but can be very time sensitive. Seasonal supply chain. May be temperature controlled.	Relatively low applicability given nature of produce.	Areas of production can be in areas with poor transport links, which may benefit from quicker routes to market	Loads are often high volume. Challenges around transporting livestock.
Food/Drink	Similar to retail. Agricultural outputs brought in and processed into finished products. These generally enter the grocery supply chain. May be temperature controlled.	Some potential where goods are particularly time sensitive (e.g. high value, very time sensitive seafood)	May benefit from agricultural outputs arriving in timely fashion.	Often heavy (particularly liquids), large consolidated loads. Some ambient temperature goods have long shelf lives and can be stored for long periods

Chemicals/Hazmat/Fuel	Often moved in tankers or by pipeline, often in liquid form	Low applicability given hazardous nature of goods	Minimal, potentially emergency use (e.g. fuel)	Potentially issues around transporting associated good by air. Heavy and often in liquid form.
Automotive	Previously highly JIT, now higher inventories. Complex supply chain, often crossing international borders multiple times.	Certain components are often lighter and high value (e.g., semi-conductors).	Should a production line need a component quickly, drones could deliver this to a site to ensure associated targets are met.	Multiple vehicles are usually moved in single consignments. Vehicles can weigh several tonnes and often need to travel long distances to customers.
Manufacturing	Varied, often highly complex with components crossing international borders multiple times.	Certain components are often lighter and high value (e.g., semi-conductors).	Should a production line need a component quickly, drones could deliver this to a site to ensure associated targets are met.	Often heavy large consolidated loads.

9.3.6 GATES project and drone workshop

The GATES project is a multi-disciplinary analysis of challenges and prospects for UK drone delivery and is a collaboration between the University of Bath, University of the West of England Bristol and the University of Exeter. GATES is establishing an understanding against a number of key questions including:

- Thinking of large-scale applications, how will these drone movements be regulated? New standards and regulations?
- Who is going to use them? To deliver what? When? How?
- How are these going to be integrated within the transport system?
- What policies need to be in place to enable drones to be used safely and efficiently (and sustainably)?
- Who holds the power to enable the uptake?

The research teams aim is to understand 'how to design an appropriate governance to make drones a viable (e.g., operations, policy, planning, regulation) option for last-mile deliveries'. To explore this, a number of workshops have taken place with stakeholders, including an additional workshop set up to enable members of the South West Freight Forum to contribute towards the project. This workshop took place on the 20th May 2024 and was attended by the STBs, Local Authorities, Connected Places Catapult and AECOM. Within the workshop attendees were asked to contribute towards three key questions:

1. What are the most important factors to design an appropriate governance for drone last mile deliveries?
2. What are key uncertainties about the future that might have an impact on the governance?
3. Who has got an interest and/or an influence to shape the governance?

A summary of the key outcomes from the workshop is shown below:

9.3.6.1 Emerging factors

- **Growing number of drones** – the UK is a very congested airspace and at the start of 2024, over 500,000 drones registered in the UK and is growing fast.
- **Public safety, cyber security and privacy** – concerns around drone operations in populated areas and impact of incidences. A need for a risk assessment model for drone use.
- **Public acceptance** – is using drones for medical and urgent purposes likely to gain more public acceptability for them?
- The role of various stakeholders (regulators, operators, businesses, beneficiaries etc.) and the coordination between them – questions around who will be responsible for the management of drones.
- **Business cases** – establishing the use case at the time when traditional van use is cheaper. Business case needs to link back to public acceptance and the problems they will solve i.e. to reach hard to reach areas.
- **Commercial use** – likely to work on a "hub & spoke" basis from set approved sites. Drones are recognised in being useful for delivering to islands and estuary areas where it takes a long time to get from one side of the wide river estuary and the other.
- **Airspace** – questions around who owns the space above your house and to what level?
- **Training** – what training requirements need to be in place for pilots, operators and end users of the service.
- **Local Authorities** - they will need to take some action on drones in their regions and there may be government advice in the Local Transport Plan guidance.

9.3.6.2 Key uncertainties

The highest uncertainties around drones that were established from the workshop include:

- Public acceptance level
- The benefits of using drones for last-mile deliveries
- Who decides the use of airspace
- Safety, liability, and spatial aspects in relation to the planning of landing/take-off platform
- The use of drones in urban-rural areas

9.3.6.3 Key stakeholder groups

There are number of key stakeholder groups that need to be involved in the development of drone governance. Certain relationships between these need to be established and who is responsible for what aspects of drone operations and regulation.

- Government
- Regulators
- Freight industry
- Drone operators
- Customers
- Others

9.3.6.4 Next steps

The findings from GATES project is in the process of being collated and processed. Further findings will be presented in due course. The next steps however will be to continue engagement with stakeholders to discuss the key aims of the project. These conversations will continue with:

- Local Authorities (Local Government Association)
- Industrial stakeholders
- Regulators
- Logistics operators
- Users (e.g., retailers)

9.3.7 Case studies

A series of case studies have been put together to demonstrate practical examples of some of the operations where drones are being utilised.

9.3.7.1 Case study – Land's End to Isles of Scilly drone trials

Figure 9-3: First commercial drone flight between Land's End and the Isles of Scilly (Cornwall Live)

In December 2020, the first freight drone flight between two UK commercial airports took place between Land's End Airport and the Isles of Scilly. This flight carried an NHS supply box to the islands on the outbound leg before returning with a load including local produce from the islands.

The flight was a collaboration between the Isles of Scilly Steamship Company and Unmanned Aerial Vehicle (UAV) supplier Flylogix, who are based in Hampshire. This flight helped to pave the way for future trials to and from the Isles of Scilly, as well as in other areas of the South West and the rest of the UK. In June 2021, £200,000 of funding was secured for further trials. This included daily flights carrying time-critical items such as medicines and blood samples.

9.3.7.2 Case study – NHS chemotherapy between Portsmouth and the Isle of Wight

Figure 9-4: NHS Drone trials (Apian)

In July 2022, it was announced that chemotherapy would be delivered by drone as part of a trial, where it would be flown between the pharmacy at Portsmouth Hospitals University NHS Trust to St Mary's Hospital on the Isle of Wight. Drones will cut the usual delivery time from four hours to 30 minutes, saving money, fuel, and time with each delivery.

Each drone will also replace at least two car journeys and one hovercraft or ferry journey per delivery which makes it more efficient compared to conventional methods Drone deliveries have also started being trialled in other areas, such as Northumbria, which began trials in February 2023.

9.3.7.3 Case study – Orkney

Skyports Drone Services is a provider and operator of electric vertical take-off and landing (eVTOL) drone solutions for cargo drone deliveries, survey and monitoring. The company is expert in the operation of long-range and Beyond Visual

Line of Sight (BVLOS) autonomous flight for a multitude of use cases, including ship to shore and maritime applications, medical and dangerous goods deliveries, and AI driven surveys for the agriculture and infrastructure sectors.

The drones by Skyports have temperature alarm systems so that they can monitor the cargo so that it doesn't overheat. This is particularly important for medical uses and the transportation of samples. Furthermore, the drones are certified to carry UN3373 dangerous goods which is one of the main requirements that would be needed by the hospital for moving samples and goods.

Skyports have proven experience of operating drones and run a service in Orkney for Royal Mail. The drones fly themselves and are supervised automatically as well as supervised by an operator at certain points on its journey. This includes checking if the landing space is clear and no helicopter take offs nearby. The operator cannot control the drone but can make it do four things such as hold in position (until a helicopter is out of the way or until the landing pad is clear).

9.3.7.4 Case study – Drones in Warwickshire

BT is partnering with various organisations to advance commercial drone operations, with a particular focus on healthcare applications. This initiative is part of BT's broader involvement in Project Skyway, which aims to create the world's longest automated drone superhighway. The company's vision includes significant contributions to the future of drone technology.

A significant milestone in this effort is the UK's first medical delivery drone trial, conducted between two Midlands hospitals: University Hospitals Coventry and Warwickshire NHS Trust sites in Coventry and Rugby. This trial represents the first over-land Beyond Visual Line of Sight (BVLOS) operation in the UK, successfully navigating complex and urban airspace. The project, led by Skyfarer Ltd. in partnership with Medical Logistics UK, utilised BT's drone connectivity solutions powered by the EE network to ensure efficient and safe drone operations.

The 32km route between the hospitals saw a total of 130 flights, covering over 1,900km without any incidents. The trial demonstrated the potential for drones to revolutionise medical deliveries, highlighting substantial reductions in delivery times, costs, and carbon emissions. Specifically, the study noted a 99.98 per cent reduction in CO_2 emissions compared to diesel vans and a 90.5 per cent reduction compared to electric vans.

The success of this trial underscores the potential economic benefits of drone technology in healthcare, with projections suggesting a possible increase in GDP by over £4bn by 2030 and savings of around half a billion in costs. BT ensures secure and optimised drone communications, prioritising data traffic for real-time control and compliance with UK regulations. The collaboration between BT's Etc. and partners like Skyfarer is crucial for the ongoing development and real-world testing of safe, efficient drone operations.

In May 2021, Royal Mail conducted drone trials between the Cornish mainland and the Isles of Scilly as part of a government-funded 'air bridge'. This used a fixed-wing Unmanned Aerial Vehicle (UAV) to deliver several items including PPE, Covid testing kits and mail. The drones used carried up to 100kg of mail on two daily return flights between the islands, with deliveries to properties and businesses then being made by postal workers. Using drones in circumstances like this enables more reliable deliveries as they can be made in foggy conditions and also is a more environmentally friendly option.

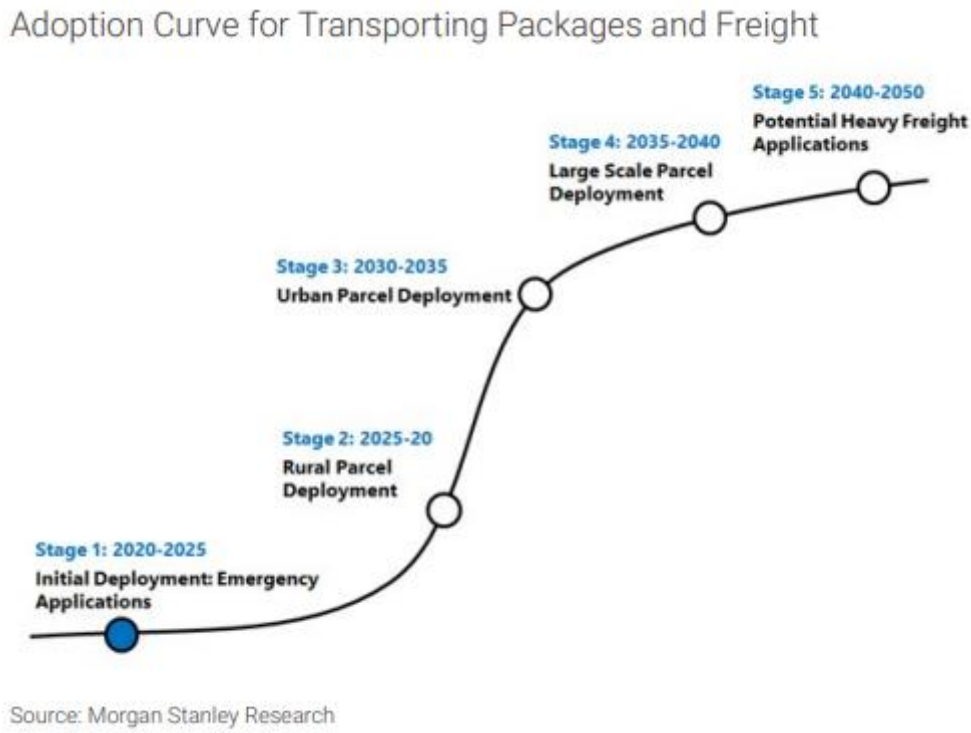
9.4 Conclusions

This review has looked to demonstrate some of the key advantages of using drones for deliveries in different industries, especially for hard to reach areas, particularly applicable to the South West given its geography. Drones can also be more environmentally friendly, which can help the South West region's path towards decarbonisation and can also reduce costs and increase efficiency for businesses and customers.

The expected improvements in technology and changes to legislation required to support the wider adoption of drones for freight movements have been outlined by Morgan Stanley Research [27]in Figure 9-5.

[27] Urban Air Mobility. Morgan Stanley

Figure 9-5: Adoption Curve for Transporting Packages and Freight



In the short term, as the use cases have demonstrated, the constraint in the UK on where drones can operate means that the most viable initial service will be for deliveries to hard-to-reach places such as the highlands and islands for small items such as post or small parcels as well as time critical deliveries such as pharmaceuticals or medical samples. These are likely to be direct business to customer activities covering routes that do not require the drone to operate over urban areas. It is likely at this point that the manufacturers of drones will need to be involved in the operation but over time while operations are in their infancy, which may lead to competition between different types of drones based on functionality.

While these initial activities are operating in the final mile space, it is likely that regional cargo freight will be the next viable service to be offered. This would be a replacement for some of the regional movements of parcels or light goods such as manufacturing or automotive parts between sites. These would be for goods movements where the ability to fly directly between the sites without flying over urban areas would make this type of service more cost effective than a road vehicle equivalent. In these scenarios, these movements would be either business to business or internal business movements.

Over the longer term as technology and legislation developments allow for drones to safely make deliveries to urban environments then this would open up a full delivery service, which could cover sectors such as mail, food, retail as well as food and drink. This would be mainly business to customer deliveries but would also allow business to business movement of small items.

It is noteworthy that the South West has been involved in a number of drone trials, especially those between mainland Cornwall and the Isles of Scilly, and looks set to continue this involvement.

The GATES project aims to delve deeper into what is needed to see drones in regular operations including what governance is required. There are a number of aspects to overcome including the levels of acceptance for drones. Given the recent growth in drones and the GATES project, there is an opportunity for South West to be the driving force for drone use in the future.

9.5 What next?

The next step for this intervention will be to continue to develop the opportunities for drones and to collaborate with industry. The challenges around drones need further discussion among various stakeholder groups to look at how best drones can be regulated, managed and implemented for the benefit of the freight sector. There are some key areas within the South West that would benefit from drones. Establishing which areas would be useful to start to build up the use case for drones.

10. O4 – Demystifying freight

Other intervention – O4	
Intervention name	Agree the role of Sub-national Transport bodies with regards to the freight industry. Once established carry out an awareness campaign – demystifying freight
Intervention description	Include understanding how the STBs can support the freight industry and stakeholders within the South West to achieve regional goals e.g. decarbonisation.
Theme	Information and awareness
Timescale	Short term
Intervention owners	Sub-national Transport Bodies – Peninsula Transport and Western Gateway

Progress to date	Training material for Local Authority officers and interested stakeholders has been put together to help educate on the freight industry. A note has been put together to provide an overview of information relating to the four modes of freight transportation: maritime, air, rail, and road freight to provide a greater understanding of how different areas of the freight sector work and how they interconnect with each other. For each mode of transport, reference has been made to some key examples from the South West of how each particular mode is impacting the region. Overall, it is important for governments, Local Authorities, and companies to understand the importance of freight, intermodality and how the utilisation of each mode in the transportation of freight can improve efficiencies and sustainability, and the future opportunities and interventions that can be made to lower emissions and improve the sustainability of the transportation of freight.
Next steps	The next steps for this intervention will be to deliver this training material in the form of a presentation and workshop to interested stakeholders including Local Authority officers. This will help to establish a better understanding of how the freight industry works and its impact on society. It will educate on how freight needs to form an integral part of transport and spatial planning. This could be delivered as a 60-minute workshop.

10.1 Introduction

Intervention O4 in the South West Freight Strategy aims to help raise awareness of the freight industry. This includes providing a greater understanding of how different areas of the freight sector work and how they interconnect. This includes both current trends and also potential future developments. The purpose of this is about ensuring that freight is not an afterthought but forms an integral part of decision making and thought processes when it comes to spatial and transport planning in the region.

The scale of the logistics sector in the UK is astounding, employing over seven per cent of the UK's workforce. In 2024, there were approximately 1.6 million people employed in the transport and storage sector across the UK[28]. Jobs in the sector are less likely than others to be based in densely populated London. The Midlands is a favoured location, accounting for 21 per cent of all UK logistics employment, compared to the North West of England, Yorkshire and the Humber, the East of England, and the South East of England each being home to around 10 per cent of the industry's jobs[29]. In comparison, the South West region only accounts for approximately four per cent of UK employment in the transport and storage sector.

10.2 Methodology

This note provides an overview of key information relating to aviation, maritime, rail and road freight. It is geared towards educating a wide range of stakeholders including Local Authority officers. This information will be used to deliver training sessions for Local Authority officers in due course. For each mode of transport, reference is also made to some key examples from the South West of how each particular mode is impacting the region.

10.3 Findings

10.3.1 Aviation

10.3.1.1 UK airports and cargo handling

The top five airports in the UK based on cargo handling tonnage in 2023-2024 are London Heathrow, East Midlands, London Stansted, London Gatwick, and Manchester (in descending order). London Heathrow is the main cargo handling airport in the UK which handles over 1.5 million tonnes of cargo each year, and accounts for more than 50 per cent of the country's total air cargo tonnage. The airport is served by over 80 airlines, including significant cargo carriers such as DHL, FedEx, and UPS.

The East Midlands Airport is the second highest in terms of cargo handling and handles over 440,000 tonnes of goods each year. East Midlands Airport also has a dedicated freighter apron with parking bays for up to six Boeing 747 aircrafts, and is a hub for carriers such as DHL, UPS, FedEx, and Royal Mail.

10.3.1.2 Air freight technical terms

Table 10-1 provides a list of technical terms and definitions used in the air freight sector.

Table 10-1: Air freight technical terms

Term	Definition
Air Freight Corridors	Trade routes between major hubs
Bellyhold Freight	Cargo that goes in the hold of passenger aircraft
Breakbulk Cargo	Also known as general cargo; goods that are stowed on board in individually counted units
CAA	Civil Aviation Authority
Dedicated Freighters	Cargo only aircraft
IATA	Internation Air Transport Association
ICAO	International Civil Aviation Organization

[28] https://www.statista.com/statistics/1385961/uk-transport-workforce/#:~:text=Number%20of%20people%20employed%20in%20transport%20and%20storage%20UK%201997%2D2024&text=As%20of%20the%20first%20quarter,the%20first%20quarter%20of%201997.

[29] https://www.frontier-economics.com/uk/en/news-and-insights/articles/article-i9409-keep-on-movin-the-logistics-of-local-economic-growth/#:~:text=The%20Midlands%20is%20a%20favoured,10%25%20of%20the%20industry's%20jobs.

10.3.1.3 Types of freighter aircraft

- Widebody dedicated freighter (Boeing 747, Boeing 777, Airbus A330 B4F)
- Narrowbody dedicated freighter (Boeing 757, Boeing 737, Airbus A321)
- Combi-Aircraft (Passenger and cargo switch-out)
- Heavy Lift (Airbus Beluga, Boeing DreamLifter, Antonov AN-124 Ruslan)
- Passenger aircraft (bellyhold freight)
- Feeder passenger aircraft with bellyhold freight (propellor aircraft, regional jets)
- Helicopters / cargo drones

10.3.1.4 Future of air freight

A key trend is likely to be the use of drones for last mile deliveries. It is estimated that by 2030, 76,000 drones are to be in use within the UK, with 11,008 operating in the transport and logistics sector alone[30].

Drone technology can be utilised in many different industries including, but not limited to, the transportation of parcels, pharmaceuticals, use in construction and inspection, and the transportation of containers. These drones can be powered by renewable and sustainable energy including solar powered and hydrogen powered drones.

10.3.1.5 Focus on the South West

Bournemouth Airport is the main cargo handling airport in the South West region and handles 4,319 tonnes of freight per year. In comparison to other airports in the region, Bristol Airport only handles one tonne of freight per year, and Exeter Airport and Cornwall Airport Newquay do not have any air cargo handling operations.

Cargo First Logistics Park operates air cargo facilities at Bournemouth Airport, enabling fast and efficient cargo operations and processing times on site by providing uncongested and unrestricted airspace and airfield operations. In addition, EU Cargo Limited is a British cargo airline that is based at Bournemouth Airport. Lastly, Maersk is a Danish company which operates flights from Bournemouth Airport and has launched flights between Bournemouth, Billund, and China.

Some key opportunities include:

- **Local distribution centres**: Prospective air freight clients are considering building local distribution centres and networks, capitalising on the airport's strategic location for combining air and sea freight from nearby ports.
- **Sustainability efforts**: The airport is progressing on initiatives for net-zero operations, including solar power generation and supporting electric and sustainable aviation fuel (SAF) flight.
- **Air cargo growth**: Bournemouth Airport is experiencing a surge in air cargo volume, primarily between China and the UK, focusing on e-commerce goods and supporting UK-manufactured exports to China.
- **Access point for time-sensitive goods hub**: Bournemouth Airport aims to establish itself as a key, congestion-free entry point for time-sensitive goods, including e-commerce and perishables, due to its efficient access and location.
- **Local processing and distribution**: There is a shift from transporting goods from Bournemouth Airport to London for processing and redistribution. Client led demand for processing at or near the airport, reducing transport emissions and creating local job opportunities.
- In addition, aviation is vital to the Isles of Scilly in the South West region. Land's End Airport is considered the gateway to the Isles of Scilly and is heavily utilised for transporting air mail and light goods. There is a dedicated Skybus freight aircraft which flies between Land's End Airport and St Mary's Airport and operates six days a week (Monday to Saturday) to transport a wide range of freight, from medicines to car parts to the post for Royal Mail. Land's End Airport has witnessed a 228 per cent uplift in freight tonnes moved over the last decade.

10.3.2 Maritime

10.3.2.1 UK commercial shipping and ports

The UK's registered trading fleet was the 24th largest in the world by Deadweight Tonnage (DWT) in 2021. DWT is the measure of how much weight a ship can carry. In addition, the UK port industry is the second largest in Europe, handling 500 million tonnes of freight each year across its 120 commercial ports. In 2022, an estimated 86,600 cargo vessels arrived at the UK's major ports.

In 2022, intermodal road freight journeys accounted for 125 million tonnes of domestic road freight, and of these journeys, 76 per cent (95 million tonnes) were carried on journeys that began or ended at a shipping dock.

[30] aircargonews.net/monthly-exclusive/supply-chain-spotlight-the-future-of-flight/

The Port of Felixstowe is the UK's largest container port, dealing with 48 per cent of Britain's containerised trade. It handles over 2.5 million containers annually and over four million Twenty-Foot Equivalent Units (TEUs) of cargo each year. The next largest shipping ports in the UK include the Port of Southampton which handles around two million TEUs of cargo per year, and the Port of London which handles 1.5 million TEUs of cargo each year (the second-largest port by tonnage with 50 million tonnes of cargo each year).

10.3.2.2 Maritime freight technical terms

Table 10-2 provides a list of technical terms and definitions used in the maritime freight sector.

Table 10-2: Maritime freight technical terms

Term	Definition
Shipping corridors	Trade routes between major port hubs
Artificial channels	Human-made channels of water designed for shipping and trade
Freeport	Usually located near ports or airports, where business can be carried out in a country, but where different customs rules apply.
Deadweight tonnage (DWT)	Measure of how much weight a ship can carry (cargo, fuel, fresh water etc)
Twenty-Foot Equivalent Unit (TEU)	The standard twenty-foot equivalent unit of measuring the carrier's capacity and efficiency of a port (i.e., a 20ft freight container).
Breakbulk cargo	Also known as general cargo; goods that are stowed on board ships in individually counted units
Bulk cargo	Commodity cargo that is transported unpacked in large quantities
Dry bulk cargo	Solid commodities that are transported in large quantities without any packaging
Liquid bulk cargo	Large quantities of liquid commodities transported in bulk
Tonnes	Weight of goods transported (t)
Tonne kilometres	The transport of one tonne of goods over the distance of one kilometres (tkm)

10.3.2.3 Types of cargo ships

- **Container ships -** Carries its load in truck-size intermodal containers (containerisation)
- **General cargo ships -** Designed for the carriage of non-bulk cargo (loose or packed)
- **Oil tankers -** Designed to transport large quantities of liquid cargo over long distances
- **Dry bulk carriers -** Designed to transport non-liquid and non-containerised bulk cargo
- **Roll-on/roll-off ships -** Designed to transport wheeled cargo that can be rolled on and off without lifting equipment (often used to move vehicles e.g. trucks or machinery)
- **Ocean liner -** Used for transporting goods, containers, pallets, and passenger
- **Reefer ships -** Designed to transport cargo requiring temperature control, used to move perishable/frozen goods

10.3.2.4 Advantages of water freight

- **Cost-effective** - lowest cost per-ton-mile due to the massive economies of scale
- **Lower environmental impacts and fuel efficiency** - technological improvements and the high carrying capacity encourage a lower carbon footprint
- Transport heavy and bulk freight
- **Lower maintenance costs** compared to rail and road transport

10.3.2.5 Disadvantages of water freight

- **Slow transition times** - slower delivery times, congestion at ports, and weather conditions
- **Requires access** to navigable waterways and accessible ports
- Not appropriate for perishable goods
- **Environmental impact** - oil spills and ballast water can harm marine ecosystems

10.3.2.6 Green credentials of maritime freight

- Maritime transport has lower emissions compared with other transport modes (shown in Figure 10-1)
- Improvements in engine efficiency and hull design, and the use of ships with larger cargo carrying capacities have led to a reduction in emissions and an increase in fuel efficiency
- In terms of CO_2 emissions per tonne of cargo transported per kilometre, shipping is recognised as the most efficient form of commercial transport. The European Commission established that international shipping produces less greenhouse gases for every ton transported per kilometre than road or air transport
- However, the enormous scale of the industry means that it is nevertheless a significant contributor to the world's total greenhouse gas emissions (around three per cent of total global CO_2 emissions)

- Green shipping corridors are specific decarbonised maritime routes where zero-carbon emission ships (e.g., all-electric autonomous ships or hydrogen fuel cell powered boats) and other emission reduction programmes are implemented.
- These corridors would allow policy makers to implement regulations and financial incentives to help mobilise green shipping

Figure 10-1: Carbon Comparison with Different Forms of Transport

Comparison of typical CO_2 emissions between modes of transport, in grams/tonne-km
Source: ICS Fuelling the Fourth Propulsion Revolution: Full Report, based on IMO, Second GHG Study, 2009
**AP Møller-Maersk, 2014*

10.3.2.7 A focus on the South West – the potential for short sea services

Given the geography of the South West, there are many strategic ports around the South West which interconnect the freight industry. These ports are vital for the movement of a number of commodities including materials for the construction sector. The South West is also home to several marine and maritime and ocean science focussed enterprise zones. These include centres of excellence aimed at marine manufacturing, ocean science, marine autonomy and offshore renewable energy.

Some key opportunities include:

- **Coastal shipping opportunities**: Utilising the coastal water across the South West to shift freight away from road and onto ships; some commodities could be moved by coastal shipping to reduce the requirement for road freight and the associated benefits that come with this shift in transportation mode.
- **Green corridors and alternative fuels**: Demonstrating the potential to decarbonise the sector and what opportunities there are for alternative fuels in the maritime sector.
- **Offshore wind**: Opportunity for the South West to lead on offshore wind and the benefits this will have to the local economy in terms of decarbonisation and job creation in the region including the maritime sector for deploying the infrastructure needed for offshore wind projects.
- **Freeports**: Opportunity to explore the benefits of freeports and the potential to expand this into further markets, as well as support a shift to using ships to move goods more efficiently. Additional benefits in terms of contribution to the local economy and job creation in the region.

10.3.3 Rail

10.3.3.1 UK rail freight

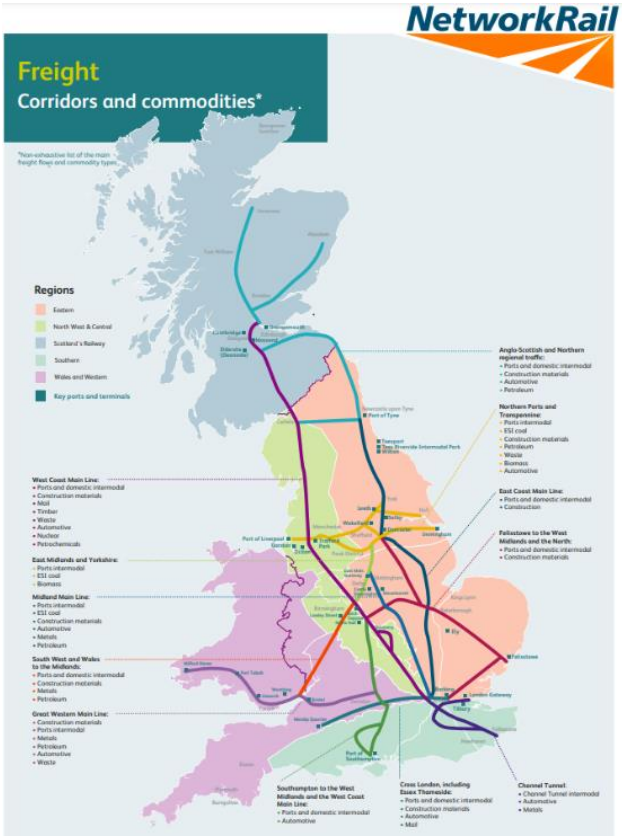
Rail freight is a major contributor to the UK economy, providing an efficient, green, safe and reliable way of transporting goods and commodities around the country, whilst alleviating road congestion. Each year, rail freight contributes £2.45bn to the UK economy.

In the UK, between 2022-2023, rail had a five per cent market share of inland freight based on tonnes lifted (the weight of goods transported), and lifts around six million tonnes every month. In terms of tonnes kilometres (the transport of one tonne of goods over a one-kilometre distance), rail had around a 10 per cent market share of inland freight in the same years. Between 2022 and 2023, the total volume of freight moved was 3.92 billion net tonne kilometres per quarter[31], which equates to one billion each month.

Approximately 600 freight trains operate every day on the UK network. These run across a variety of lines but much of the freight is carried on a specific set of strategic corridors (shown in Figure 10-2).

[31] https://dataportal.orr.gov.uk/media/bzkisg2o/freight-rail-usage-and-performance-apr-jun-2023.pdf

Figure 10-2: UK rail corridors



10.3.3.2 Rail freight technical terms

Table 10-3 provides a list of technical terms and definitions used in the rail freight sector.

Table 10-3: Rail freight technical terms

Term	Definition
Gauge	The internal distance between two rails
Bogie	A framework carrying wheels which are attached to coaches or wagons
Couplings	A mechanism that connects locomotives and wagons together to form a train
Trailing weight	The sum of weights of the cars and wagons within a train that are not providing propelling power
Axle weight	The total weight that is transmitted to the ground by all the wheels on one axle
Headshunt	A short section of track used for storing and manoeuvring locomotives or rolling stock
Passing loop	A location of double track on a single-track railway, where trains are able to pass each other
Runaround loop	A track arrangement that enables a locomotive to attach to the opposite end of a train

10.3.3.3 Types of Freight Trains

- **Boxcars** – have an enclosed structure typically used for transporting general cargo
- **Flatcars** – flat and open design with no roof or enclosed sides for transporting oversized cargo
- **Tanker cars** – backbone for transporting liquids (from crude oil to liquified petroleum gas)
- **Hopper cars** – designed with a bottom opening for quick unloading, and used for transporting bulk commodities like coal, grain and iron ore
- **Refrigerator cars** – to transport perishable goods as equipped with cooling systems
- **Gondolas** – open top suitable for bulk cargo and commodities such as minerals or scrap metal

10.3.3.4 Intermodal terminals

Intermodal terminals are designed to allow a smooth transfer of units and commodities between rail and other modes of transportation such as road and shipping ports. For example, containerised cargo that arrives at a port can then be

transported inland via rail. These include Strategic Rail Freight Interchanges (SRFIs), port based intermodal terminals, and other inland intermodal terminals. This can help to reduce logistics costs and facilitate a faster, safer, and more efficient transport service. In 2022, there were 59 active intermodal terminals in Great Britain across several sectors; examples can include the automotive sector, building materials, coal, parcels/mail and waste.

This concept of intermodality allows the transport sector to take advantage of all modes of transport during the transport chain, such as the economies of scale offered by maritime shipping which can then be transported inland by rail.

10.3.3.5 Advantages of rail freight

- Low greenhouse gas emissions
- Efficiency due to high cargo capacity
- Safe mode
- Intermodality

10.3.3.6 Disadvantages of rail freight

- Low level of flexibility in terms of time and location
- Noise emissions
- Transport costs
- Infrastructure in need of expansion

10.3.3.7 Green credentials of rail freight

- Rail freight service estimates to take 1,000 lorry journeys off the road in London each day
- It reduces air quality pollutants by 81 per cent per tonne compared to road
- Rail freight services reduced carbon emissions by 76 per cent per tonne compared to road

10.3.3.8 DfT rail freight growth targets

DfT has set a rail freight growth target of 75 per cent by 2050, based on five priority policy interventions to increase rail freight. This is estimated to take 12 million HGV movements off roads each year. The five priority policy interventions are:

1. Address the widening gap between road and rail costs to create a level playing field between freight modes. Make rail affordable by considering taxes and incentives across modes.
2. Maintain and expand successful grant schemes that support modal shift to rail, such as by expanding successful incentives like the Mode Shift Revenue Support scheme, which already removes 900,000 HGV movements from roads.
3. Offer long term access to the rail network. Give businesses the confidence to invest in rail freight facilities, and technology, by offering certainty around future access rights to the railway.
4. Provide reliable infrastructure necessary to support rail freight growth.
5. Deliver a reformed railway - create a Strategic Freight Unit within any new arm's length body to ensure freight is adequately represented.

10.3.3.9 Focus on the South West – Imery china clay

China clay traffic is mined in the far South West and is then carried locally within Cornwall for export via the Port of Fowey, as well as over longer distances outside the South West region; 7,200 tonnes are moved by rail every week, removing the equivalent of 11,000 lorries per year from Cornwall's roads. Therefore, rail represents a reliable and sustainable means of moving bulk cargo across the region.

This example demonstrates the importance of rail connections to ports, helping to support regional ports such as Fowey and facilitating trade outside of the South West with rail services running to the Midlands. It also demonstrates the way rail connections help the South West region, and the UK as a whole work towards achieving a route to net-zero.

10.3.4 Road

10.3.4.1 UK road freight

Road freight is an inland solution for transporting cargo; it is the most common mode for last-mile delivery as its connectivity is unparalleled with other modes of transport. Therefore, it can facilitate intermodal transportation, as containers from other modes can be loaded onto the back of a truck.

With over 40 million vehicles on UK roads today, around 500,000 of them are HGVs. In 2022, HGVs accounted for 1.64 billion tonnes of goods lifted, 175 billion tonne-kilometres of goods moved, and 19.5 billion vehicle kilometres of vehicle

distance[32]. In 2015, it was measured that 76 per cent of domestic freight was moved by road in comparison to nine per cent being moved by rail, and 15 per cent moved by water. Therefore, road freight plays a large role in the transport sector and remains the largest emitting sector in the UK. For example, in 2022 the transportation sector was responsible for emitting 112.5 million tonnes of CO_2 equivalent, a four per cent increase from 2021[33].HGVs account for approximately 20 per cent of the transportation emissions[34].

10.3.4.2 Road freight technical terms

Table 10-4 provides a list of technical terms and definitions used in the road freight sector.

Table 10-4: Road freight technical terms

Term	Definition
Heavy Goods Vehicle (HGV)	A vehicle with a Gross Vehicle Weight of more than 3.5 tonnes
Light Goods Vehicle (LGV)	A vehicle with a Gross Vehicle Weight of up to and including 3.5 tonnes
Gross Vehicle Weight (GVW)	The combined weight of the vehicle, crew, equipment load
Goods lifted	The weight of goods carried, measured in tonnes
Goods moved	The weight of goods carried, multiplied by the distance hauled, measured in tonne kilometres.
Road haulier	Provides road transport services from one location to another

10.3.4.3 Main types of HGVs

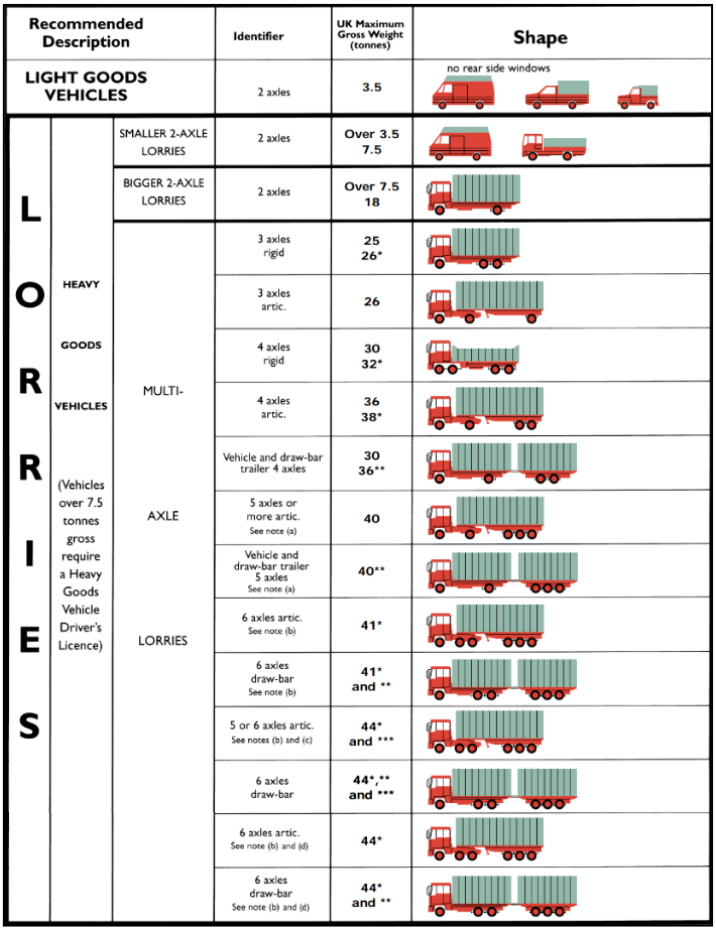
- **Rigid** – lorry with a cab and load-space the same chassis
- **Articulated** – lorry with a separate tractor unit (engine and cab) and a trailer
- **Drawbar trailer** – a rigid lorry with a trailer
- **Refrigerated** – lorries that have a refrigerated compartment to keep goods cold or frozen
- **Flatbed** – lorries that have a flat platform with no sides or roof
- **Tankers** – lorries that carry liquids or gases, such as fuel, water, or milk

[32] https://www.gov.uk/government/statistics/road-freight-statistics-2022/domestic-road-freight-statistics-united-kingdom-2022

[33] https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023/transport-and-environment-statistics-2023

[34] https://www.statista.com/statistics/486069/co2-emission-from-freight-transport-by-road-including-removal-services-uk/#:~:text=Road%20freight%20transportation%20and%20removal,percent%20of%20UK%20transportation%20emissions.

Figure 10-3: Key types of LGV and HGV vehicles[35]



10.3.4.4 Road freight in Europe

In 2022, total EU road freight transport accounted for more than 13.6 billion tonnes and 1,920 billion tonne-kilometres; the freight transported by road in terms of tonnes was the highest in Germany for the same year.

Road freight transport accounts for a high proportion of the overall CO_2 emissions from road transport. In 2019, while trucks accounted for less than two per cent of vehicles on the road in Europe, they made up a staggering 23 per cent of the CO_2 emissions from road transport. Therefore, transporting freight by road has a large role to play in reducing carbon emissions. This is an argument supporting investments in modal shifts towards other modes of transporting freight.

10.3.4.5 Road freight green credentials

Road freight transport contributes to high levels of overall CO_2 emissions; for example, while HGVs account for less than two per cent of the vehicles in Europe, they made up around 23 per cent of the CO_2 emissions. Therefore, transporting freight by road has a large role to play in reducing carbon emissions. There are many emerging innovations which are introducing alternative fuel solutions for road transport. These can include:

- Battery-Electric Lorries
- Hydrogen Fuel Cell Trucks
- Methane Gas Trucks
- Hybrid Trucks; these operate using both the electric powertrain and the traditional combustion engine powertrain, to provide a vehicle that can run emission-free when needed

[35] https://assets.publishing.service.gov.uk/media/5a74dbd340f0b65f61322ceb/simplified-guide-to-lorry-types-and-weights.pdf

In 2023, according to the European Automobile Manufacturers' Association (ACEA), EU Registrations of electric trucks reached 5,361 units[36]. This shows the efforts being made to try and make road freight transport more sustainable due to its high contributions to greenhouse gas emissions.

In addition, a shift towards multi-modal supply chains which include electric trains can help to reduce the emissions from road freight transportation and improve the green credentials in this transport sector. This will play a major role in improving the sustainability of transporting freight.

10.3.4.6 Focus on the South West

- **Alternative fuels and their uses**: Bennamann is producing compressed fugitive methane gas (CFM) and liquid fugitive methane fuel (LFM) from livestock manure in Cornwall.
- Backloading:
  - Around 22 per cent of the vehicle kilometres in the South West run empty
  - Opportunity for 10 operators in the South West to trial a backloading scheme for free
- **Bridge strikes:** This is a key issue across the country, including in the South West. In Cornwall, £240,000 is typically spent in most years on bridge strikes.

10.4 Conclusion

The four modes of freight are interconnected through the use of intermodal transportation solutions. Intermodal terminals are designed to allow a smooth transfer of units and commodities between different modes of transport, for example from maritime to road. Intermodality allows the transport sector to take advantage of all modes of transport in order to deliver freight quickly, sustainably, efficiently, and safely whilst also reducing the logistics costs. For example, containerised cargo that arrives at a port can then be transported inland via the transport modes of road or rail, and vice versa. Road freight is an inland solution for transporting cargo; it is the most common mode for last-mile delivery as its connectivity is unparalleled with other modes of transport. In addition, rail offers a lower greenhouse gas emission alternative to road transport in order to help deliver freight in a sustainable way.

This note has provided an overview of information relating to the four modes of freight transportation: maritime, air, rail, and road freight to provide a greater understanding of how different areas of the freight sector work and how they interconnect with each other. For each mode of transport, reference has been made to some key examples from the South West of how each particular mode is impacting the region. Overall, it is important for governments, Local Authorities, and companies to understand the importance of freight, intermodality and how the utilisation of each mode in the transportation of freight can improve efficiencies and sustainability, and the future opportunities and interventions that can be made to lower emissions and improve the sustainability of the transportation of freight.

10.5 What next?

The next steps for this intervention will be to deliver the demystifying freight training material in the form of a presentation and workshop to interested stakeholders including Local Authority officers. This will help to establish a better understanding of how the freight industry works and its impact on society. It will educate on how freight needs to form an integral part of spatial and transport planning in the region. The training needs to be tailored to the interests and needs of Local Authority officers and STB members in terms of what freight means to them, why they need to plan for it and how the STB can help support them. This could be delivered as a 60-minute workshop. In addition, a trainer pack should be developed containing the key learning objectives and outcomes, trainer notes, and PowerPoint slides, and the Q&As and interactive sessions.

[36] https://market-insights.upply.com/en/the-trend-in-heavy-goods-vehicle-registrations-in-2023

11. Concluding remarks

The South West Freight Strategy has reached its second year of implementation since July 2022. Its core aim is to champion freight and logistics as an opportunity and not as an afterthought. It is centred around the three sustainability pillars of environment, economy and society. The sustainability pillars are supported by Peninsula Transport and Western Gateway vision statements.

Over the course of the year two implementation phase, various levels of progress has been made across the 46 freight interventions. To date, 74 per cent of the interventions have seen good and excellent levels of progression. This is a great achievement for a multi-modal Freight Strategy, unique amongst other freight strategies across England.

At the heart of the Freight Strategy is the South West Freight Forum. This platform has been instrumental in bringing together organisations from across industry to help inform them of the Freight Strategy and to build up a networking environment. Over the course of the 12 Year Two Freight Forum sessions, (nine sub-group sessions and three main group sessions), the Forum has had over 20 guest speakers and several regular speakers. These have provided informative sessions on a wide range of topics, including updates from key industry partners who are essential for pushing along many of the interventions.

Throughout Year Two a number of interventions have been prioritised. A variety of activity has taken place to progress these interventions, ranging from desktop research and stakeholder engagement to very practical interventions including the backloading trial for 10 operators. What is encouraging to see is a push for freight across all modes of transport including engagement on drones, identifying opportunities for coastal shipping, identification of potential rail freight services and sites in the South West and variety of road based interventions covering lorry parking analysis, backloading trials and bridge strike prevention interventions. An education piece to demystify freight and establish a greater understanding of the freight industry brings to the forefront the importance of freight in the region for both the economy and society.

Peninsula Transport and Western Gateway would like to thank all the Freight Forum speakers and attendees including National Highways, Network Rail, GBRTT, ports, airports, trade associations, LEPs and many others for helping to progress the Strategy. The variety of attendees has been of great benefit to the Freight Forum and it has been witnessed on a number of occasions the further engagement taking place as a result of the Forum. This includes where organisations have felt they wanted to find out more about a topic or to collaborate with an organisation as part of progressing freight interventions in the Region. The attendance and engagement levels of the Freight Forum remain strong and continue to grow, showcasing its value to members.

Peninsula Transport and Western Gateway are keen to continue the strong progress of Year Two into Year Three as part of the implementation process for the South West Freight Strategy. Stakeholders are encouraged to continue their involvement and engagement, along with their peers, on the freight interventions and the South West Freight Forum. Ongoing collaboration across freight stakeholders will ensure the South West's current and future freight needs will continue to be recognised and addressed.

12. Appendices

12.1 Appendix 1 – Summary of freight interventions

This section provides a summary of progress by intervention, including industry updates and discussions.

12.1.1 Aviation interventions

12.1.1.1 A1 Support for sustainable aviation and aerospace sector - Airports and air freight operators

There has been significant development in both aircraft propulsion technology and also in alternative fuels. SAF (sustainable aviation fuel) is a liquid fuel increasingly being used in commercial aviation which reduces CO_2 emissions by up to 80 per cent. It can be produced from a number of sources (feedstock) including renewables and waste. It is a similar concept to the use of HVO (hydrotreated vegetable oil) in HGVs and trains. At the start of 2024, SAF has already been used on 490,000 flights. As an alternative to the use of SAF, some companies are developing electric aircraft and this is thought to be likely for short-haul flights. Hydrogen is also being developed as an aircraft fuel and Airbus is planning the first hydrogen aircraft to be flying by 2035, see https://www.airbus.com/en/innovation/low-carbon-aviation/hydrogen/zeroe. Bristol Airport is looking to have a hydrogen fuelling point for a variety of applications including on-site vehicles, access vehicles and potentially aircrafts.

12.1.1.2 A2 Further develop business / employment zones around airports - Local Authorities in conjunction with private developers

There are business parks around several of the South West's airports including Bournemouth, Bristol and Exeter. In addition to this, there are significant aviation sector companies centred around Filton in Bristol including Rolls Royce and Airbus which employ over 5,000 workers. The aviation work of the LEP has been taken over by Somerset County Council.

12.1.1.3 A3 Work with operators to understand future opportunities for carrying air cargo - Operators

The biggest opportunity for air freight in the South West was outlined by Bournemouth Airport which has grown its volume over the last four years to over 4,000 tonnes in 2022 and has an inbound capacity of 500 tonnes per week which equates to 25,000 tonnes per year. There is additional interest in serving a number of customers in the South of England. There is spare capacity on the outbound direct flights to China.

12.1.2 Maritime interventions

12.1.2.1 M2 Explore opportunities to diversity ports into renewable energy production - Port authorities

Several ports in the South West are investigating installing "shore power" for vessels while they are berthed. At the moment vessels tend to have to run either the main vessel engines or auxiliary generators onboard to run ship services. This can create local air quality issues.

12.1.2.2 M3 Awareness campaign of coastal shipping opportunities for supply chains - Port authorities

Maritime UK South West is active in promoting the shipping sector in the area and showing how many jobs exist within the region either on vessels, within ports or in support sectors. There are new services starting such as the import of orange juice concentrate through the Port of Portland for processing in Somerset and national distribution from there.

12.1.2.3 M4 Develop and expand growth into new sectors at ports - Port authorities

There are new growth developments such as the movement of aggregates and building materials through the ports such as at Falmouth and Poole. Also, the support sector for offshore windfarms requires significant port support facilities. There are more shipbuilding opportunities emerging for example at Harland & Wolff Appledore. In 2022 the shipyard won a £55m contract to refit and former Royal Navy mine-hunter ship for the Lithuanian navy.

12.1.2.4 M5 Investigate improvements in road and rail links to Port terminals - Port authorities, highway authorities and Network Rail

There are active discussions aimed at reconnecting both the Port of Poole and Falmouth back to the national rail network. There has been a disused branch line via Hamworthy Junction to Poole and there are advanced talks on reintroducing rail freight on to this line from the port in the next couple of years.

12.1.2.5 M6 Review of ports in the South West - STBs

The fact sheets for each of the ports from the WP12 International Gateway Study have been added to the STB websites for information.

12.1.2.6 M7 Review of ports planning guidance - Local Authorities

The national policy statement for ports was published in 2012 and continues to provide an appropriate framework for planning decisions in relation to ports infrastructure development and associated development, such as road and rail links. But in March 2023 DfT announced a review of the national policy statement for ports under the provisions of the Planning Act 2008. This review will include a thorough examination of the modelling and forecasts that support the statement of need for development, and the environmental, safety, resilience, and local community considerations that planning decisions must take into account. Once this review is published the implications for the commercial ports in the South West need to be considered.

12.1.3 Rail interventions

12.1.3.1 RL2 Support electrification and gauge enhancement of the core rail network - Network Rail and FOCs

The South West has not had a fair share of electrified routes and hence is still very reliant on diesel traction. Nevertheless, now that London to Cardiff is electrified there are plans to connect Bristol to the wires. There are longer term plans to electrify to the Somerset Mendip quarry locations as these are the source of some of the heaviest freight trains in the country, namely the Jumbo aggregate trains to London. Apart from being more sustainable, electric locomotives have better traction performance and hence can pull heavier trains at faster speeds. This helps freight trains fit into the congested timetable better.

12.1.3.2 RL3 Pursue rollout of new alternative fuel locomotives and wagon technology - Network Rail and FOCs

There are several newer types of locomotives on trial or on order with several Freight Operating Companies. Rail Operations Group (ROG) has ordered 10 ‘93s’ from Stadler as part of a framework agreement for up to 30 new locos. The 110mph trimode locos have overhead electric capability, a Caterpillar C32 diesel engine and two Lithium Titanate Oxide (LTO) traction battery packs to supplement the main engine and enable last-mile emission-free shunting operations. So far one ‘93’ has been delivered to the UK for testing while others are in testing elsewhere in Europe. Freightliner are understood to be interested in trialling these Class 93s. Another type, the Class 99 has been ordered by GB Railfreight and this has powerful electric and diesel engines. It is due for testing in 2025 and a fleet of 30 locomotives will be based at Leicester.

12.1.3.3 RL4 Support and signpost businesses and Local Authorities to transition to rail freight. - STBs

Each of the main 13 Local Authorities in the South West have been written to during Spring 2024 to ask about the most suitable locations for rail freight terminals in their area. This indirectly may prompt interest in rail freight.

12.1.3.4 RL5 Understand the availability of grants to help facilitate modal switch to rail - Network Rail and FOCs

GBRTT mentioned that as part of their consultation in 2023, they were considering a range of options to support the rail freight growth target of a 75 per cent increase by 2050. One of the options is to reconsider introducing Freight Facility Grants. There has also been a project in the last year to review the Mode Shift Revenue Grant Scheme (MSRS) and see if it is still fit for purpose and whether it needs amendments. This provides a modest subsidy where the cost of rail is slightly more than road and there are wider environmental benefits of using freight trains rather than HGVs.

12.1.3.5 RL6 Partnership working with stakeholders to promote South West priorities - STBs

Having a rail freight sub-group helps with bringing together various stakeholder groups including Network Rail, GBRTT, Local Authorities, potential customers, the Rail Freight Group and other interested parties.

12.1.3.6 RL9 Allocate sufficient freight train paths on the main line and diversionary routes - Network Rail

Network Rail Freight Managers say that a perceived lack of freight paths on certain routes should not dissuade companies from looking for a suitable train path. A recent case in point has been the proactive mini-study to look for potential freight trains paths to support the development of a new rail freight facility at Gravity Park in Somerset. Although it is very early days, Network Rail has already secured some train paths for various types of trains that might serve a new facility. This proactive approach is very helpful and will allow positive discussions to take place in the months to come.

12.1.4 Road interventions

12.1.4.1 RD1 Strategically plan network of alternative fuel stations and promote existing sites. Development of new sites by private sector - Private sector

There are several companies planning investment in new charging points and service stations. Also, the STBs are working on where these locations should be, following a study completed in 2023. The RHA mentioned their members have recently spent £2.2 billion on upgrading vehicles to meet NO_x emissions standards in several cities.

12.1.4.2 RD3 Promote solutions to driver shortages - Logistics UK and RHA

The RHA highlighted that the problem has eased slightly. Driver's wages have gone up by around 20 per cent over the last two years and this has encouraged more into the sector, albeit some transferring from the bus and coach sector. UWE has also been working on an evaluation project into driver shortages. They highlighted the objectives of the evaluation (short and long term), notably the team undertook interviews with key stakeholders such as HGV drivers and trainees on their perspective of the issues. They specifically mentioned insurance issues, the fact young drivers cannot obtain a license and several unintended outcomes. UWE are due to report back findings later in the year.

12.1.4.3 RD4 Work with hauliers to understand how they can be supported in the uptake of alternatively fuelled vehicles - STBs

Several logistics companies including Wincanton have discussed the issues relating to the uptake of alternatively fuelled vehicles. Around 1.5 per cent of new commercial vehicles are alternatively fuelled vehicles, mostly battery electric, although there are some biomethane and a small number of hybrids. A piece of work is due to be commenced later in 2024 looking at fuelling hubs.

12.1.4.4 RD6 Support for infrastructure improvements and investment where suitable - National Highways

National Highways highlight activity in the region, the funding RIS process, and ongoing as well as emerging schemes into the next road period. The key pointers highlight RIS 3 which commences from March 2025 onwards, but there are other schemes ongoing including M4/M5 Almondsbury interchange upgrades and M5 J16-15 deck refurbishments, A417 missing link (on-going) aims and next steps, M5 J20-19 bridge cluster which is part of the emerging schemes.

12.1.4.5 RD7 Continue support for routine road maintenance activities but broadcast plans so hauliers can better plan - National Highways

Emerging South West operations schemes include resurfacing the Prince of Wales Bridge, and M32 Eastville viaduct, which involves significant renewal of the structures around M32 Junction 2.

12.1.4.6 RD8 Identify cluster locations where logistics plans are needed along with facilities for last mile logistics - STBs

Although no specific project work is underway many logistics companies are looking at more environmentally friendly ways of making deliveries in town and city centres. Several cargo bike operations have commenced in Bristol and Plymouth. Electric vehicles are becoming more widespread in the van sector particularly where there are low emission zones such as in Bath and Bristol.

12.1.4.7 RD9 Promote use of swap trailers to reduce demands for long distance trunking between regions - Logistics UK and RHA

No action yet on this although a few hauliers are doing some swap trailers at Motorway Service stations. An example would be a lorry from Plymouth to Birmingham could swap trailers near Bristol and return south with a corresponding unit in the opposite direction. This could be a useful model when looking at electric tractor units which have a limited distance range.

12.1.4.8 RD10 Feasibility study on consolidation sites for last mile logistics - Local Authorities and logistics operators

There is no action yet on the subject of consolidation, but work is going on nationally and in Ireland on the subject. This is something that can be organised grouping consignments together to reduce transport journeys into a city centre. A good example is Vaxjo in Sweden which is the greenest city in Europe. The Local Authority encourages the use of an out-of-town consolidation centre and electric HGVs serving the centre. Most government institutions and schools all use the consolidation centre and this saves having more than one truck arriving at a school on any given day which improves safety and reduces vehicle emissions.

12.1.4.9 RD11 Promoting suitable alternative routes in the event of adverse weather - National Highways and Local Authorities

The Government is currently consulting on a document entitled Adapting to Climate Change. The call for responses ended on 31st May 2024. It is understood that National Highways are making a submission as are other organisations such as the Chartered Institute of Logistics and Transport. The South West is very reliant on a small number of roads and railways which can be subject to floods and bad weather. The disruption on the railway at Dawlish is recognised at a national level and Network Rail has done a comprehensive rebuilding of the seawall in recent months. There are road based sites noted for example Western Gateway in their May 2024 published "Strategic Plan to 2050" report stated the "vulnerability of the road and rail networks to future weather events, including in the upper Severn area (fluvial flooding), Somerset Levels (coastal/fluvial flooding), Salisbury environs (groundwater flooding), along the South Coast at Poole and Weymouth (tidal flooding), Swindon-Bristol Parkway (pluvial flooding) and crossings of the Severn (wind, pluvial flooding)."

12.1.4.10 RD12 Review options to deliver smarter during quieter periods of the day or week - Local authorities and logistics operators

West of England Combined Authority (WECA) is doing a trial with parcels on coaches during the off-peak when the baggage compartments of the vehicles have some spare room. The nominated coach is met by cycle couriers at each end. The service between Bristol and Plymouth has been one of the test routes as there is a cycle courier Zedify operation in both cities.

12.1.4.11 RD13 Support improvements to strategically important roads that require better journey time reliability - National Highways

Some of the counties of the South West have little or no motorway and a low percentage of modern dual carriageway. Slow moving vehicles can impact the journey time reliability, resulting in delays. There is an ongoing project to consider better connectivity between the M4 and the South Coast and in particular Dorset as journey times are quite long and many A roads are not very suitable for large commercial vehicles.

12.1.4.12 RD14 Review suitability of technologies from trials and their potential for the South West - National Highways

There are several trials of new technology underway including the use of larger battery electric HGVs, a trial of an electrified road system using lorries with a catenary pick-up on the cab roof and hydrogen trucks. Also, a recent trial called Helm investigated the use of lorries in platoons from a technology point of view. This is where the driver in the front truck has the control of not only his/her vehicle but also those immediately following. All of the trials will produce useful findings and it is important the results are discussed at future freight steering groups to establish how best the new technology can be rolled out in the region.

12.1.5 Other interventions

12.1.5.1 O1 Develop engagement on logistics schemes and partnerships. STBs

The Freight Strategy covers the period to 2050 and this is one of the areas that has not been started yet.

12.1.5.2 O2 Lead by example by implementing low or zero emission vehicles in Local Authority fleets - STBs

The 13 main Local Authorities across the region were contacted to learn what each of them are doing to decarbonise their own transport fleets. Not all councils have responded yet but of those that have, the trend seems to be replacing small diesel vans with electric equivalents where suitable and for more caution in replacing the bigger vehicles with alternatively fuelled options. Although there have been many larger rigid HGVs coming on to the market in 2023 and 2024, they are very expensive to purchase, typically double the price of a diesel equivalent. Although operational costs are cheaper, such as lower energy and maintenance costs, caution is being exercised until clarity is available on whole life costing.

12.1.5.3 O3 Establish and promote a South West Freight Steering Group - STBs

The Steering Group and sub-groups meetings have been well supported over the last year. Over 20 speakers have presented at the Freight Forum and there is a summary of each of their main points in a section of the Monitoring Report. Comprehensive Minutes of each of the meetings are on the STB websites. More information is covered in section 3.

12.1.5.4 O4 Agree the role of Sub-national Transport bodies with regards to the freight industry. Once established carry out an awareness campaign - STBs

The STBs are becoming more well established with additional staff and as a result, there will be more resources to address this issue. What is clear however is that the efficient movement of goods is one of five core areas as evidenced by Western Gateway's new Strategic Plan for the period from 2024 to 2050 published in May 2024. More information is covered in section 10.

12.1.5.5 O5 Assist with targeted recruitment campaigns for the freight industry - RHA and LUK

Although the trade associations say the lorry driver shortage is easing slightly there are still many vacancies in the South West as a web-search reveals. Apart from agency adverts, there are jobs on a government website, with wages ranging from £13 to £20 per hour and some salaried positions, see
https://findajob.dwp.gov.uk/search?cti=full_time&cty=permanent&loc=86392&q=hgv%20driver

12.1.5.6 O9 Consider creating an information sharing platform in conjunction with the Freight Steering Group so that for example best practice case studies can be featured. STBs

Enabling access to the latest freight information for the South West, sharing best practice, acting as a repository for intervention updates and being a location to access the content of these sessions at a later date for those unable to attend are all features that have been developed on their websites by the STBs over the last year.

12.2 Appendix 2 – Analysis of potential sites from neighbourhood plans and engagement with GBRTT

This section provides a summary of the analysis of potential sites from neighbourhood plans and engagement with GBRTT.

Council area	Site	Local Plan Notes	GBRTT Notes
Gloucestershire	**Gloucester Yard**	• The Gloucester Local Transport Plan[37] notes that although there are no commercial rail freight terminals in Gloucestershire, "infrastructure such as sidings exist which could be used as small-scale terminals for specific types of freight" and "these include Gloucester Yard". • However, within the Gloucester City Plan[38] there is no mention of rail freight terminals, including Gloucester Yard, or whether sites will be safeguarded. • Gloucestershire Council did note that the adopted Local Transport Plan (LTP) identifies Gloucester Yard and other rail freight facilities in the county on the Advisory Freight Route Map. LTP policy (PD3.6 – Rail and Water Freight) recognises the limitations for existing and potential 'transmodal' freight facilities within the county and supports suitable third party promoted schemes for the increased use of rail or water freight, where a valid business case and funding proposal can be provided. LTP policy does not safeguard existing rail or water freight facilities.	• Work is ongoing looking at bringing a former loop back into existence. The first train is expected within next few of weeks/months. First service planned for June/July. The main cargo is likely to be aggregates from the Somerset Quarries.
Swindon / Wiltshire	**South Marston (Former Honda Site)**	• The Swindon Local Plan 2026 was published in 2015 whilst the site was being used for manufacturing Honda cars. Therefore, reference within this document is made to this site being a key employment site, as it once was, but not as a potential rail terminal. • Following the sale of the site, local media reported in 2023 that the site was being sold. However, there is no reference to site safeguarding within planning documents that were reviewed. • Wiltshire Council also noted that there may be implications from the end of metal raw iron production at Port Talbot and its conversion to electric arc furnaces with scrap metal inputs, and links to the track recovery facility at Westbury where scrap metal travels by road to Newport. The council also noted that there may be other wider regional flows that could be considered. • In addition to sites over the border in Swindon the former cement works at Westbury, in addition to service as a staging point for Freightliner, also serves as a rail-connected facility for distribution of cement products. This could be considered in the future as it has a signalled main line connection.	• Panettoni have purchased the site next door and so far have not expressed a desire to do anything with rail. One of tenants may be available and could handle cargo for several sectors including bulk, vehicles, small scale containers and/or express parcels.
Bristol	**Chittening**	• An emerging Bristol Local Plan for Bristol was published in 2023[39]. Policy E4 relates to the Avonmouth Industrial Area and Bristol Port, noting the area is close to the national rail freight network. Around 640 hectares is "designated and reserved for the retention, development and redevelopment of land for industrial, distribution, energy and port related uses", although there is no direct reference to the safeguarding of land for use as rail freight terminals.	• Not much has happened at Chittening. There is potential for development, and there is advertised land for sale. Any potential site could handle both bulk and intermodal freight. • At Avonmouth, there are silos that are due for demolition this summer and there is a scheme that may create a small bulk terminal. This would create the possibility for a couple of trains per week. Alternatively, there is interest from an international cement company who may be interested in keeping the silos. There would not be enough width to handle intermodal freight.
Bristol	**Avonmouth Docks (Ex BHTT Site)**		

[37] https://www.gloucestershire.gov.uk/media/p5melmok/ltp-policy-document-final-v132-2.pdf

[38] https://www.gloucester.gov.uk/media/ynedezpg/gloucester-city-plan-low-res.pdf

[39] https://www.bristol.gov.uk/files/documents/6894-bristol-local-plan-main-document-publication-version-nov-2023/file

Council area	Site	Local Plan Notes	GBRTT Notes
North Somerset	**Portbury Docks (Ex coal terminal)**	• The North Somerset Local Plan 2039 Pre-submission plan[40] dedicates policy LP11 to Portbury Dock. This notes that sustainable developments will be permitted subject to several conditions, including that the potential uses require a port location and that benefits to the local community and economy are maximised. • Whilst the document notes that Portbury Docks is "conveniently linked…by rail routes" there is no other mention of rail freight or more general safeguarding of the site for use as a rail freight terminal.	• For Portbury Docks, the Port is open for people to present ideas. Large areas of the site are currently used for car storage. A potential terminal could handle both bulk and intermodal cargo.
Bournemouth, Christchurch and Poole	**Poole Harbour**	• The Poole Local Plan was adopted in 2018[41]. The plan notes that there are already rail freight uses associated with the Port rail link, and that with this link there is an opportunity to increase freight handling at the port. • Policy PP19 notes that "development will not be permitted where it would prejudice the use of the rail link for freight handling". In addition, Policy PP36 notes that The Port, Hamworthy will be safeguarded for strategic transport infrastructure. However, this does not appear to specifically safeguard a site as a rail freight terminal. • Additionally, the Bournemouth, Dorset and Poole Minerals Strategy[42], adopted in 2014, notes a railhead that previously brought crushed limestone from the Mendips. However, this site continues to be safeguarded. • In addition to the above, the council noted that within the new draft local plan, the council would aim to ensure that the use of the rail link for freight handling is not impacted by any proposals. In addition to the draft local plan, the council has also recently consulted on Strategic Transport Priorities for the BCP Council area, which included priorities for a Port of Poole expansion and the re-opening of the Hamworthy Branch Line. The consultation outputs showed that both of these strategic priority schemes received good levels of support from the public.	• Final drawings are currently being sorted, with both the harbour authority and a customer is on board. There may be potential to run freight from here from 2025 with a refurbished Hamworthy branch. Cargo is likely to be just bulk, mostly marine dredged aggregates.
Dorset	**Winfrith site**	• The Purbeck Local Plan[43] notes that the Dorset Green Technology Park used to support nuclear research. This is being phased out, whilst the Nuclear Decommissioning Agency (NDA) still maintain the facility to the west of the site. There is no mention of the site having potential use as a rail freight terminal. • The Purbeck Local Plan notes that there is a policy, MN20A, which was carried forward from the 2004 Purbeck Local Plan Final Edition (PLPFE) that designates "Protection of Land for Rail Freight Use". However, it is not clear where this refers to. • Dorset Council noted that this site has not been safeguarded for development as a rail freight terminal or any other type of development in the emerging Dorset Local Plan. • Dorset Council also noted that a section of track was included in the relatively recent resignalling work between Poole and Wool. Early on in the establishment of Dorset Innovation Park, there was a discussion about whether it could be used as a freight hub. It was felt at the time that this would not sit well with the defence / security requirements of the site as it would involve regular lorry movements through the site. In the past Dorset Council have had a discussion with Natural	• Up until recently the site was handling low-level nuclear waste, and GBRTT are reaching out to see what the potential is for the site.

[40] https://n-somerset.gov.uk/sites/default/files/2023-11/North%20Somerset%20Local%20Plan%202039%20-%20Pre-submission%20Plan%20%28Reg%2019%29.pdf

[41] https://www.bcpcouncil.gov.uk/documents/planning-and-building-control/Final-version-28.11.18.pdf-for-web.pdf

[42] https://www.dorsetcouncil.gov.uk/documents/35024/283152/minerals-strategy-2014-chapters-1-8-compressed.pdf/9022e767-ff8a-d94b-14de-9c3a5279f961

[43] https://www.dorsetcouncil.gov.uk/documents/35024/292199/Purbeck+Local+Plan+Part+1+-+Planning+Purbeck%27s+Future.pdf/2946f863-fc1a-49ca-9842-2e4b4bae67fd

Council area	Site	Local Plan Notes	GBRTT Notes
		England about that area and were told that because of the restoration back to heathland it wouldn't be able to build anything over 5m, that would mean only stacking two containers on top of each other. Until recently there has been a road / track that runs from the Police Headquarters along the northern boundary of the site, outside of the fence. If this could be used for lorries / freight transfer, then this could get round the security requirements of the DIP site.	
Devon	**Gravity Park**	• The Sedgemoor Local Plan for 2011-2032 was adopted in 2019[44]. There are several references to the Gravity site, although not directly referring to the use of the site as a rail freight terminal. • The Gravity site was designated as an enterprise zone in 2015, with the site "specifically allocated for renewable or low carbon energy uses and associated green technologies". Outline planning consent had been issued, including an access road to the A39. • Whilst within the Local Plan Policy D13 is to "Encourage efficient, safe and sustainable freight transport", however this does not appear to have direct relation to the Gravity site. • More recently, in 2022, the Local Development Order for Gravity was published[45]. The development permitted by this included "rail infrastructure including terminals, sidings and operational infrastructure and change of use of land to operational rail land" as well as a "multi-modal transport interchange". The description of development also includes "restoration of the railway line for passenger and freight services, rail infrastructure including terminals, sidings and operational infrastructure". The parameter plans also showed the currently disused rail link on the west edge opened to passengers and freight.	• This site would need a connection to the mainline network funded. It is understood that an agreement with a battery plant looking to develop the site means there are to be motorway upgrades, but no money is currently set aside for rail upgrades. Any site could handle both bulk and intermodal goods.
Devon	**Exeter Gateway**	• A full draft of the new local plan for Exeter (named the Exeter Plan) was published in October 2023[46]. Within it, there was no reference to freight, goods movement or rail freight terminals. • The existing Devon Local Transport Plan was published in 2011[47], however, it is currently undergoing a refresh. This document notes that planning permission for an intermodal freight terminal has already been granted, with a key element of the strategy being to "deliver the intermodal rail freight terminal at Cranbrook [Exeter Gateway]". This site also appears on maps of key developments; therefore it can be assumed the site was safeguarded at the time of publication. However, development at the site did not proceed. • Unlike Exeter Gateway, there was no mention of the safeguarding or development of a terminal at Exeter Riverside in the documents reviewed.	• Exeter Riverside is looking like it may be particularly suitable for use as a terminal. Final drawings have been prepared, with a potential tenant to operate the site and signalling already in place. There would be intermodal potential, with a bulk tenant on site looking to upgrade, for example with dedicated product bays. • Exeter Gateway was a historically proposed site. There would be challenges in access from the Salisbury direction, as well as capacity constraints and the potential for reliability issues with single line running. This site could serve a role being closer to the airport, which would make it complementary to Riverside. However, it was also noted that Exeter is unlikely to be able to support two terminals. Light logistics with one siding would also be more space-efficient here rather than parallel tracks with a runaround. Also there are lower weight limits from the Exeter direction due to the 1 in 37 gradient between Exeter St Davids and Exeter Central.
Devon	**Exeter Riverside**		
Devon	**Hackney Yard**	• The Teignbridge Local Plan Policy HT1 notes "support for rail improvements" including "increased use of freight on rail and safeguarding of sidings at Hackney Marshes". However, whilst the sidings are safeguarded there is no further mention of a wider rail freight terminal.	• This has handled timber and aggregates recently. There is also potential for this site to be used as a staging post as part of longer routes. This would be a site for bulk, but the potential would be limited for intermodal.
Devon	**Meldon Quarry**	• Meldon Quarry does not appear to be mentioned in the Plymouth and South West Devon Joint	• This site location is close to the A30, with lots of space available. The state of the connecting infrastructure may be an issue if the site is to be

[44] https://www.somerset.gov.uk/planning-buildings-and-land/adopted-local-plans/?district=Sedgemoor

[45] https://www.somerset.gov.uk/business-economy-and-licences/gravity-enterprise-zone/gravity-local-development-order/

[46] https://exeter.gov.uk/media/xmenkshx/exeter-plan-full-draft.pdf

[47] https://www.devon.gov.uk/roads-and-transport/traffic-information/transport-planning/devon-and-torbay-local-transport-plan-3-2011-2026/

Council area	Site	Local Plan Notes	GBRTT Notes
		Local Plan[48], including in relation to safeguarding for future rail freight use. • More widely, policy SPT8 looks at "improving connectivity and supporting the development of future rail freight opportunities between Cornwall, Plymouth, Exeter and the rest of the country"	used as a terminal, however, if this can be overcome there is potential for bulk handling.
Plymouth	**Tavistock Junction**	• The Plymouth and South West Devon Joint Local Plan was adopted in 2019[49]. This was produced by Plymouth City Council, South Hams District Council and West Devon Borough Council. • Policy SPT8 looks at "improving connectivity and supporting the development of future rail freight opportunities between Cornwall, Plymouth, Exeter and the rest of the country", demonstrating a general rail freight policy. • More specifically, as part of policies PLY57 and PLY53, Tavistock Junction is safeguarded for "improved rail/freight facilities" as part of the infrastructure schedule. However, these sites are not included as part of any mapping within the local plan, as opposed to some other sites which are shown as safeguarded. • The sites at Plymouth Friary and Meldon Quarry do not appear to be mentioned in the Plan, including in relation to safeguarding for future rail freight use.	• Tavistock Junction is a site with a Network Rail Freehold, with the site on a long lease to DB Cargo. There is a customer base, and in the short term there is likely to be more bulk than intermodal. Additionally, the way that the site is laid out currently isn't useful. It requires remodelling and could be reconfigured to handle both bulk and intermodal services. There is a good A38 road connection (and wider network). The Plymouth area re-signalling (principally focused on Plymouth-Liskeard) is looking at rationalisation of assets in the area and may also include looking at improved access into the site. • There is less information on Plymouth Friary, but there would be potential for freight as well as stabling of passenger stock and express logistics.
Plymouth	**Plymouth Friary**	• Plymouth City Council noted that their local plan was due for upgrade in 2024 but this has been delayed. However, overall, the council noted that the contents of the existing local plan are still considered as relevant.	
Cornwall	**Goonbarrow**	• In the Cornwall Local Plan[50] there are no references to the Burngullow or the Goonbarrow sites. There is a note, however, that there should be growth for "logistics related activities across central Cornwall optimising the combined opportunities between the mid-Cornwall growth corridor of Newquay –Bodmin – St Austell/Clay Country". • Policy 18 in the Cornwall Council Minerals Safeguarding Development Plan Document[51] notes that mineral safeguarding areas will be identified for the bulk transport of minerals by rail. This report also notes that "It is mainly the St Austell China Clay Area which contains rail links as china clay and its associated products are transported by rail. Indeed, the data on china clay indicates that 13 per cent of clays are transported by rail". The Burngullow to St Dennis China Clay Railway is noted as being safeguarded infrastructure, however there is not a mention of a wider terminal at Burngullow, or any direct mention of Goonbarrow. • The Falmouth Neighbourhood Development Plan[52] was published in 2020. Whilst there is no direct reference to safeguarding for a rail freight terminal, the plan does include "support for the development of the Docks to facilitate marine engineering and marine tourism benefits". More generally, there is also reference to freight traffic leading to "significant levels of congestion". • Falmouth Port Masterplan[53] was published in 2011, and therefore is relatively outdated. However, the potential for a rail freight terminal is mentioned for certain commodities:	• For Goonbarrow, Imerys have aspirations for this site with regard to lithium type activities. This would link with potential flows between Southampton and Goonbarrow for clay movements.
Cornwall	**Burngullow**		• For Burngullow, the biggest challenge is the network capability, with limits on weight and length. However, if this could be overcome, there is potential for bulk and intermodal handling. •
Cornwall	**Falmouth Docks**		• GBRTT noted that if used as a terminal, this site still requires reconnection to the main line as this was taken out. There are a number of internal workstreams that are being looked at, with the aim of building up reasons to reconnect the line.

[48] https://www.plymouth.gov.uk/sites/default/files/JLPAdoptedVersion.pdf

[49] https://www.plymouth.gov.uk/sites/default/files/JLPAdoptedVersion.pdf

[50] https://www.cornwall.gov.uk/media/ozhj5k0z/adopted-local-plan-strategic-policies-2016.pdf

[51] https://www.cornwall.gov.uk/media/h21hc0ni/minerals-safeguarding-dpd-adoption-december-2018e.pdf

[52] https://planforfalmouth.info/wp-content/uploads/2020/05/falmouth-neighbourhood-development-plan-post-examination-version-optimized-003-reduced-size.pdf

[53] https://planforfalmouth.info/wp-content/uploads/2016/12/Falmouth-Harbour-Masterplan.pdf

Council area	Site	Local Plan Notes	GBRTT Notes
		• *"There may be potential to increase the use of rail freight in the future, so reducing the number of vehicles that need to access the Docks and/or increasing the Docks capacity. There may be potential to extend the length of the line into the Docks to create a usable terminal for freight, including secondary aggregates and biomass".* • This would require the currently disused rail spur to be put back into use, as well as the potential lengthening of the spur to ensure rail services are viable. • Overall, for all these sites in Cornwall, from a policy and strategy point of view both the Council's Local Plan and Local Transport Plan states that they will look to identify potential rail freight enhancements to the rail network and safeguard land for rail freight where appropriate. The Council's Climate Emergency DPD also states "Former railway track beds and other railway land should be protected from development that would be prejudicial to the re-use of the railway, creation of new travel or distribution networks or the creation of sustainable transport links and facilities. The council would definitely be interested in working on securing freight terminals and Council policy (see above) enables them to safeguard strategic areas.	

12.3 Appendix 3 – Drone sector analysis

This section provides a summary of the drone sector analysis.

12.3.1 Containers (Intermodal)

A significant proportion of global freight movements are undertaken using shipping containers, typically either 20ft or 40ft in length. This provides significant advantages in the swift transfer of goods between modes, tracking, storage and transport. This has resulted in a more efficient and lower cost supply chain reducing delivery times, resource requirements and helping prevent theft/losses. Containers can also be refrigerated should the consignment require being temperature controlled.

Given the weight and dimensions of a container, there are significant l barriers to the movement of containers by drone. Even an empty container weighs over three tonnes.

12.3.2 Parcels/Mail

Whilst the number of letters handled by the Royal Mail is in long term decline, the growth in e-commerce has helped drive a rise in parcel deliveries. As such home deliveries are now commonplace and although reduced, a significant number of letters are still posted each year.

Drones have been used to transport parcels and mail in real world trials, and these items are seen as being most applicable to deliveries by this technology. Parcels are often light and small and can easily be transported by a variety of drones. They are also often time sensitive, with shippers keen that goods reach customers in tight delivery windows.

Where the road network is less developed, there is challenging topography or natural habitats or there is a body of water to cross, drones can be a way of providing direct routes for freight in a timely manner.

The parcel supply chain is fast moving and complex. Parcels will typically be collected from a customer or posted by a customer and transported to a depot for sorting and then rapid transfer to a depot closer to the recipient. The ‘last mile’ will generally be undertaken by the operators own vehicles (usually a Long Wheelbase van) or in some business models a consignment of parcels is taken to a (often self-employed) affiliated distributor for delivery in their own vehicle (often a private car). Aside from goods entering and leaving the country via airfreight, the entirety of the supply chain is undertaken by road. This contributes to congestion, poor air quality and carbon emissions. There may also be a negative impact on road safety and the amenity of areas which have seen an increase in such traffic due in part to the rise of e-commerce. Drones could help reduce these negative externalities.

However, there are several issues to address should this be developed at scale. One of the primary issues is cost, with drones typically more expensive than the alternative road transport. Further issues relate to consignment integrity, particularly questions relating to how the parcel/mail is delivered to recipients and if there is no one to receive the goods, where the parcel is stored or if it is returned to depot.

There is also a question of public acceptability, with some people uncomfortable with drones flying close to or over their properties. There may be conflict if drones deliveries were frequent, with noise and visual intrusion causing issues.

12.3.3 Pharmaceuticals

Pharmaceuticals are often highly time sensitive and high value goods. Many people rely on them daily and often cannot easily get to a pharmacy to collect their prescriptions. Medicines are also often highly personalised, with doses specific to a particular patient. Some medicines have a short shelf-life and can decay quickly, even with optimum temperature-controlled storage.

This requirement to get medicines and other treatments to patients quickly means that the potentially rapid solution provided by drones could be beneficial to health supply chains. Medical facilities such as hospitals are often large sites which could accommodate a drone facility. Many hospitals currently host helipads for emergency transport of patients. Hospital to hospital movements of medicines and medical equipment is also likely to be advantageous in terms of time.

As with parcels, real-world drone trials have been undertaken that prove this can work operationally, however as discussed, the costs when compared to the traditional road-based supply chain can be greater. In this instance however, the time savings offered by drones could be critical, overriding cost concerns. Issues around public acceptability can be satisfied by the need for patients to get medicines quickly.

12.3.4 Construction

The construction sector supply chain is typified by large bulky items and low value, non-time sensitive goods such as aggregates. Current drone technology would struggle handling the payload and dimensions of construction material and the ability to stockpile inventory on site means that this sector would be less applicable to drone technology.

There may be potential for delivery of smaller items required on building sites if the development was in a difficult to reach area or the road network was not yet complete. There may also be scope for emergency delivery of tools or other items required in short timescales. Regardless, this is unlikely to be a significant proportion of the construction logistics supply chain. However, drones have a role in the construction sector in surveys for example taking topographical images and monitoring progress.

12.3.5 Retail

Traditionally, the retail sector involves goods brought by suppliers to a National or Regional Distribution Centre, typically in a central location in the UK such as the 'Golden Triangle', an area of the Midlands which is a key centre for freight and logistics in the UK.

These are then consolidated and transported by HGV on regular trips to regional distribution centres or stores, to ensure in-store inventories are maintained.

However, the growth of e-commerce has greatly impacted on that model, with delivery direct to households. This has significantly increased the volume of parcels delivered and often involves vans and cars, depending on the supply chain model.

It is anticipated that drones could have a limited role in this supply chain, other than rapid inventory resupply.

12.3.6 Food and Drink

Food and drink can be highly perishable, particularly temperature-controlled items. The integrity of associated goods is paramount to ensure the health and wellbeing of consumers and that products can be sold and not wasted.

Raw agricultural products are often processed and then packaged for sale by grocers, with multiple product types involved in the production of a single finished item. Therefore, the supply chain can be complex, with the grocery sector working to tight delivery windows and short shelf life of goods. For example, supermarkets selling pre-made sandwiches often need delivery by the early hours of the morning for sale the next day.

Products such as beer and spirits may be produced in one location and bottled in another.

Associated consignments can be heavy (for example root vegetables or liquid), but for some products often exceed the dimensions of (for example) a trailer before exceeding the maximum permitted weight. These could include items such as boxes of light savoury snacks.

For high value, low weight items which need to reach market quickly there may be isolated cases where drones are an effective means of delivery. There are parallels with the mainstream aviation sector which transports selected higher value perishable goods which are produced in hotter climates and brought to the UK. This may include seafood to high end restaurants (acknowledging that where seafood is brought ashore is often far from such locations and potentially out of the range of many drone types).

There may be a role for deliveries of takeaway meals to households, given the range required from restaurant/hot food outlets to customers which is typically less than five miles. Orders are often relatively light and given that customers will expect their food hot, are time sensitive. The market in "convenience meals" brought to the door has grown rapidly over the last five years. However, costs compared to a traditional delivery driver in a car or motorbike, lack of understanding of the technology amongst potential users and current regulatory barriers are likely to be barriers, at least in the short term.

Where households or communities have been cut off or need emergency supplies, drones may be the most effective means of meeting this requirement.

12.3.7 Chemicals/Fuel

Chemicals are often hazardous and transported in tankers (or tanktainers) in liquid form. Usually heavy, these goods are generally transported by pipeline, road, rail and maritime transport, with obvious potential hazards associated with transportation by air.

Products are often stored on site in tanks for use when required and are therefore not always time sensitive, with resupply undertaken by large bulk movements.

Therefore, the use of drones for chemicals and fuels is not considered feasible.

12.3.8 Automotive

The automotive sector production process is highly complex, with raw materials, components and products moving across international boundaries multiple times. Factories are often served by suppliers based locally but, in most cases, also rely on parts from various global supply chains.

Whilst previously the sector had moved to a 'Just In Time' approach, with low inventories and components and finished vehicles being moved quickly in and out of factories, recent supply chain issues have led to a shift back to keeping higher inventories, to ensure that vehicles can be finished and provide resilience in the supply chain.

Products are often transported to and from factories by road and rail, with vehicles frequently exported via major ports.

The weight and nature of vehicles are unlikely to make them suitable for drones and the high production volume, requiring frequent large deliveries. This means road and rail freight is likely to continue to be favoured.

However, should there be an emergency requirement for a smaller size component, which is holding up production, then there may be a case for the use of drones in this context.

12.3.9 Manufacturing

The nature of manufacturing is varied depending on what is produced, however modern manufacturing processes are high automated, high volume with complex, often global supply chains.

As with the automotive sector should there be an emergency requirement for a smaller component, which is holding up production, then there may be a case for use of drones in this context.

12.3.10 Military/Defence

As with many developments in logistics, it is often a military application that prompts the expansion of new technology. There are many current applications for the use of drones in areas of conflict around the world. But as well as use as weapons drones can be used for reconnaissance and for example in naval applications can be used to inspect the side of ships for damage. With having Devonport and a large naval presence at Plymouth there are numerous applications for drones in the area.

12.3.11 Off-shore Wind Farm or Oil rigs

As well as potentially taking essential packages from shore to rig by drone to save the expensive use of a helicopter there can be surveying applications looking for damage or rusting on the rig or turbine unit. With wind farm development in the Celtic Sea over the next few years there may be need for drone applications.

12.3.12 Maintenance

Whilst not a commodity group in itself, the use of drones for maintenance is currently being trialled and explored, with parts required for repair of vessels at sea and infrastructure such as oil platforms transported by drone. Where the ramifications for operations being affected can be significant and costly, the rapid delivery of the components required to fix any issues is hugely beneficial and result in cost savings relating to the quick resolution of any issues.

12.3.13 Emergency Services

An important area in the use of drones is in support of the work of emergency services such as the police, fire, coastguard and mountain rescue services. Some drones are fitted with heat detection cameras that can either help spot the whereabouts of injured walkers in the mountains or criminals that are trying to evade capture. The police can also use them to aid with monitoring traffic problems and more localised crowd control at major events such as football matches.

12.3.14 Infrastructure providers

Drones can be useful for surveying purposes for infrastructure providers such as highways authorities, Environment Agency, Network Rail, Canal and River Trust and Port Authorities.