



Strathclyde Partnership for Transport

Freight Strategy for Strathclyde

February 2018

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Glossary

To aid understanding, a brief glossary of terms in this report which may not be familiar to all readers is provided below.

ANPR – Automatic Number Plate Recognition

AQMA - Air Quality Management Area

CEF - Connecting Europe Facility

CLOCs- Construction Logistics and Community Safety

DRS - Direct Rail Services Ltd

DSPs - Delivery and Servicing Plans

ECML - East Coast Main Line

ERDF - European Regional Development Fund

FFG - Freight Facilities Grant

FORS - Fleet Operator Recognition Scheme

FQP - Freight Quality Partnership

GPA - Glasgow-Prestwick Airport

HGV - Heavy Goods Vehicle

INTERMODAL- The movement of goods in containers. In this report it is important to note that deep sea intermodal refers to containers that arrive at Britain's various ports whilst domestic could be the movement of goods between urban centres either in these same containers or in other transferable forms such as swapbodies,

LEV - Low Emission Vehicle

LEZ - Low Emission Zone

LGV - Light Goods Vehicle

MW – Mega Watts

NTS - National Transport Strategy

OLEV - Office for Low Emission Vehicles

RHA – Road Haulage Association

RTS - Regional Transport Strategy

SPT - Strathclyde Partnership for Transport

STTS - Strategic Timber Transport Scheme

TfL – Transport for London

ULEV - Ultra Low Emission Vehicle

ULEZ - Ultra Low Emission Zone

W10 - Allows 2.9 m (9 ft. 6 in) high Hi-Cube shipping containers to be carried on standard wagons and also allows 2.5 m (8 ft. 2 in) wide Euro shipping containers

WCML - West Coast Main Line

1. Introduction

The aim of this freight strategy is to set the context for freight in Strathclyde and its transport network within the strategic road and rail network. This strategy will identify constraints and opportunities and examine any options for improvements.

1.1 Introduction

Strathclyde Partnership for Transport (SPT) is pleased to present this freight strategy for the Strathclyde region. This freight strategy will assist in improving the movement of freight as well as efficiencies in the sector and ultimately act as an enabler for the wider Scottish Economy.

This freight strategy will provide local authorities in Strathclyde with a better understanding of freight in the region, taking into consideration growth in freight traffic, the economy, population and employment.

Whilst addressing existing issues from freight transport, this strategy will also explore opportunities to develop and improve the freight and logistics industry in Strathclyde region.

A separate sub report for North Lanarkshire Council was undertaken as part of the preparation of this Freight Strategy concerning the Glasgow City deal proposals in connection with freight developments at Kilgarth and Mossend. This report covered the two specific schemes of the A8/M8 Corridor Access Improvement (which would assist the Mossend proposal) and the Gartsherrie Freightliner Link Road & M73 Junction 2a Improvements (which would support the Kilgarth and existing Coatbridge Intermodal Terminal).

1.2 The Need for a Freight Strategy



To encourage the sustainable distribution of freight by supporting modal shift from road based transport.

This strategy aims to reduce impacts from freight transport whilst maintaining economic efficiency and improving the quality of life in the area



Freight is an important issue in Strathclyde. This freight strategy is based on SPT's vision for the efficient distribution of goods across the Strathclyde region with minimal environmental and social impacts. This freight strategy builds upon the 'Ayrshire Freight Strategy' developed 2014/15.

The development and implementation of the freight strategy will be an early contribution to the refresh of the Regional Transport Strategy (RTS) within the context of Scottish Governments announcement in August 2016 of a National Transport Review which is to include a fuller review of the National Transport Strategy (NTS).

The development of this freight strategy for Strathclyde supports the development of Strathclyde as a centre of excellence for freight and logistics matters including providing relevant inputs to the Glasgow City Region Deal, Ayrshire Growth Deal and Clydeplan.

1.3 Methodology

In developing this freight strategy, a variety of methods were used to collect the required evidence. This summary process is illustrated in Figure 1.1 below.



Figure 1.1: Freight Strategy Development Method

Desktop Research

AECOM undertook a desktop review of (23) existing publications with reference to Strathclyde. These included local and national transport strategies. These documents were reviewed to get a better understanding of existing freight issues in the area, which aided in the development of this freight strategy.

Field Work

AECOM undertook an intense period of field work in September 2016. The work provided the project team with the opportunity to visit the ports, airports, rail freight terminals, existing lorry parking facilities and some of the industrial estates and business parks.

The purpose of visiting these facilities was to assess the routes to and from key transport nodes, congestion, access and signage issues for freight transport with the aim of identifying opportunities to improve transport connectivity in the area. Issues identified during this visit are referenced throughout Chapter 3.

Detailed data collected from the field work can be found in Appendix A.

Consultation

This freight strategy has been developed following a comprehensive stakeholder consultation process which included road haulage transport operators and drivers, local authorities, rail freight operating companies, academics, institutions and trade associations. Stakeholder consultation helped to fill in any gaps in the desktop research by providing valuable insights and additional freight issues. Consultation also helped in developing realistic and achievable emerging solutions for SPT. The consultation comprised of the following components:

Online survey

An online survey was distributed to a number of stakeholders involved in freight transport in the public and private sector. The purpose of the online survey was to prioritise the initiatives and associated actions proposed in this strategy. The stakeholders had the opportunity to comment on the initiatives relevant to them. The survey was completed by 31 stakeholders. Findings from the survey are referenced throughout this strategy.

Face to Face meetings

A number of face-to-face meetings and telephone conference calls took place during the course of the study with a wide variety of key stakeholders in the industry which included Clyde plan, Network Rail, Glasgow Prestwick Airport, Glasgow City Council, Freightliner and XPO Logistics. Summary notes were prepared and key emerging points

and outcomes from these conversations were incorporated as part of multiple feeds into the freight strategy.

Driver interviews

To add a 'drivers eye' perspective to the analysis AECOM undertook 10 driver interviews to get first-hand information of key issues drivers experience when working in the Strathclyde area. A guide with topics for discussion was used and this can be found in Appendix B. Driver interviews took place at truck stops and laybys where drivers were parked up taking their rest breaks. This was done at various sites across Strathclyde.

The drivers were asked to provide information about their work as well as their perceptions of specific issues in the Strathclyde area. The information sought from the drivers included:

- Details about their journey
- How many times the drivers served Strathclyde
- Information on their experience of working in Strathclyde
- Use of lorry parking facilities and availability in Strathclyde

Findings from the driver interviews are incorporated within the freight strategy. Detailed notes can be found in *Appendix A*.

Telephone Interviews

20 telephone interviews were made with road transport companies involved in the collection and delivery of freight. The telephone interviews provided AECOM with the opportunity to discuss the issues they experience and particularly issues that affect their ability to operate efficiently. Discussions were focused around urban freight, modal shift, rail freight, safety and security, consolidation centres, business efficiency, and air quality. Detailed notes can be found in Appendix C and the outcomes from this consultation are incorporated in Chapter 3.

Stakeholder Workshop:

A workshop was held on the 10th of November 2016. The workshop was attended by 19 stakeholders working in the public and private sector. The workshop was facilitated by both AECOM and SPT, in SPT's Glasgow Office.

The workshop offered the opportunity to outline the purpose of the freight strategy to stakeholders and, discuss key freight issues

and opportunities identified by the project team. The workshop also provided stakeholders with feedback from the online survey which helped in developing the key actions for this strategy.

During the workshop stakeholders were divided into three groups of three and each group was assigned a number of topics to discuss. Topics included 'urban deliveries, consolidation centres, alternative fuelled vehicles, rail freight, modal shift, strategic connectivity, and lorry parking facilities.' Discussions around these topics allowed for AECOM to get an understanding of key issues raised by stakeholders and opportunities to be considered in the development of the strategy. Detailed notes from the workshop can be found in Appendix D.

Freight Quality Partnership (FQP) Meeting

A FQP meeting was held on the 1st December which included representation from the public and private sector organisations. AECOM provided a summary of the ambitions for the strategy, the state of freight, key issues, and potential solutions from the emerging SPT Freight Strategy. Following the earlier stakeholder workshop, stakeholders had the opportunity to provide feedback and amend actions on the emerging solutions grouped under the strategy's six ambition categories of Efficiency, Air Quality, Liveability, Multi-Modality, Safety & Security, and Communication.

2. Freight Context

Strathclyde is the centre of Scotland's logistics and distribution industry. The area is the country's largest consumer market and manufacturing cluster.

2.1 Introduction

The freight and logistics sector plays a crucial role in supporting the economy of the Strathclyde region. Due to its geographical location, Strathclyde plays a key gateway role to Scotland and beyond.

Strathclyde is home to a large concentration of freight operations. The area is well served by a combination of transport modes (road, rail, air and sea). The transport network is influenced by neighbouring areas, namely the Central Belt of Scotland and the North of England.

Within the region, there are a range of issues affecting the delivery of freight operations, as identified in the RTS. SPT are working together with partners through its Freight Quality Partnership to address freight issues that affect both local businesses and residents, including improving connectivity, congestion, accessibility and transport efficiency and thereby supporting economic growth.

There is a need to make sure that responses to freight issues are delivered strategically and effectively as a result of full understanding across the sector, rather than in a reactive, individual and disparate manner.

In addition there is limited cross-sector understanding of freight movements in the area across all modes. This section presents an overview of freight context in Strathclyde, including the main transport networks and key trends that illustrate the current state of freight in the region. These networks, including rail freight, airport and seaport terminals, alongside the major roads in the region, are summarised in *Figure 2.12* at the end of this chapter.

2.2 The Freight Policy Context

The development of this Freight Strategy has been largely guided by local, national and European Policy. This sub-section sets out the policy context in relation to freight issues in Strathclyde and how these have influenced the contents of this strategy.

Figure 2.1 illustrates freight policies which are relevant to the development of this freight strategy. The freight policy context for Strathclyde is detailed in *Appendix E*.



Figure 2.1: Freight Policy Context

2.3 Role of Freight in the Local Economy

An efficient and effective freight and logistics sector is of vital importance to the economic prosperity of Strathclyde. It is essential that deliveries & servicing as well as through movement are undertaken efficiently and do not adversely impact on the area and those who live, work and travel through it.

The most recently published values indicate that freight transport is worth 5.5% of total Scottish Gross Value Added (GVA)¹. In 2014 Scotland generated 12.6 billion tonne kilometers of freight movements².

Approximately two thirds of the freight lifted in Strathclyde remains in the region (see figure 2.2). Thus the movement of goods within the region, including distribution and consolidation, exceeds national and international freight volumes. Therefore in addition to strategic external links, it is important to focus on links within the region to help foster and improve growth.



Figure 2.2: Freight Movements in the Strathclyde region²

Developing a freight strategy that addresses the challenges faced by transport operators in the region is vital in achieving a robust and future proofed freight transportation network that supports the regional and national economy.

2.4 Key Freight Generators in Strathclyde

The key freight generators in Strathclyde include:

- Major Shopping Centres e.g. Buchanan Galleries
- Major Business Parks, e.g. Strathclyde Business Park
- EuroCentral

- Airports e.g. Glasgow Airport / Glasgow Prestwick Airport
- Sea ports and rail freight interchanges
- Mineral Extraction sites
- Manufacturing industrial sites
- Woodlands and timber extraction areas
- LGVs and HGVs delivering to local retail outlets and major supermarkets

These key places generate considerable volumes of freight traffic due to the large numbers of businesses operating in the areas.

2.5 Role of Freight on the Transport Network in Strathclyde

Freight activity within Strathclyde is considerable and makes significant contributions to the economy, both directly and indirectly. Freight transport is dependent on good transport links for efficient distribution.

The performance of the strategic road network, rail freight network, and maritime network is therefore of vital importance for freight and the economy.

As shown in Figure 2.3³, road freight is the dominant mode of transport in Scotland. Other modes including rail and water freight also play a crucial role. Water freight for example, is particularly important for European movements.

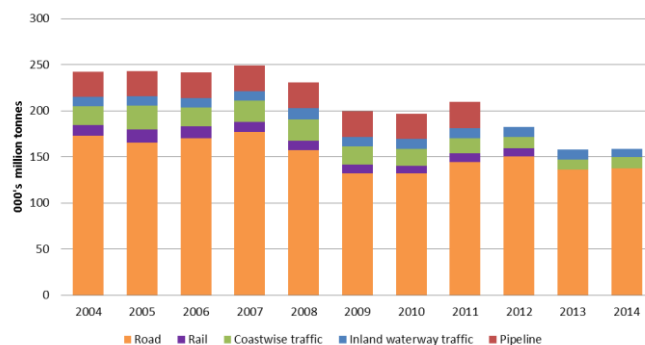


Figure 2.3: Freight Movements in the Strathclyde region 2004 - 2014⁴

¹ <http://www.gov.scot/Resource/Doc/52995/0044128.pdf>

²

³ Air freight is not included in the statistics as it received small coverage in the responses. However, it was reported air freight in Scotland has dropped sharply mainly as a result of the decline in the electronics sector. The remaining market has mostly moved from formerly dominant Glasgow Prestwick Airport to Edinburgh and Glasgow

⁴ http://www.transport.gov.scot/sites/default/files/documents/rrd_reports/uploaded_reports/415388/415388.pdf

2.6 Road Freight

Strathclyde is well served by the road network; it contains a number of strategic routes which link the area to the rest of Scotland as well as England and trunk road routes linking different local authority areas.

Road freight in the area is moved primarily using A-roads (A77, A70, A78, A737, A82, A83, A702, A74 (M), A76) and the national network (M8, M74, M77) illustrated in Figure 2.4 overleaf.

The M8 is the busiest motorway in Scotland and among the most heavily used route in the UK. The M8 feeds traffic directly to Glasgow Airport, while the A77 is the key route to Glasgow-Prestwick Airport (GPA) and links to key ports in North and South Ayrshire. The A83 is the key gateway to Argyll and links the Ferry port of Kennacraig to central Scotland via the A82.

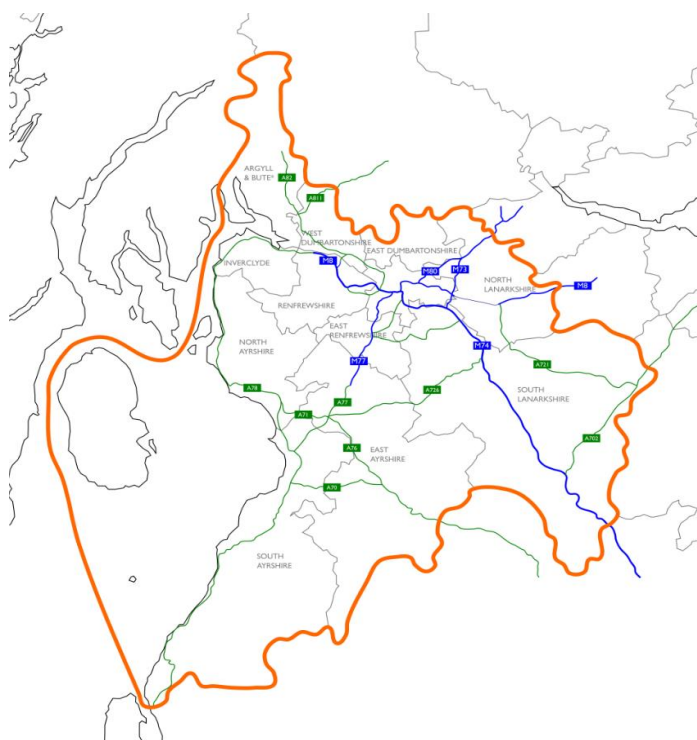


Figure 2.4: Key Roads carrying Freight in Strathclyde

These strategic roads provide key routes for freight, across the Strathclyde region. Due to high volumes of traffic (particularly during peak hours) this often leads to significant congestion.

As well as serving the internal markets, the road networks cater for a significant volume of through freight traffic on major arterial routes traversing the region.

As indicated in section 2.3, the majority of freight with an origin in the Strathclyde region is transported to a destination in the region, which highlights the important role of road for short-haul movements.

As Table 2.1 illustrates, in 2013 10,756 goods vehicles were registered in the Strathclyde region, representing 36.4% of all good vehicles registered in Scotland; further demonstrating the integral role that road freight transportation plays in the region.

A closer examination shows that North and South Lanarkshire have the highest proportion of good vehicles registered, which may reflect the location of hauliers in close proximity to the M74, the main link from the region to England.

Table 2.1: Goods Vehicles Registered in Strathclyde

Council	Number	%age (of Scottish Total)
East Ayrshire	736	2.51%
East Dunbartonshire	240	0.82%
East Renfrewshire	225	0.77%
City of Glasgow	1,562	5.32%
Inverclyde	99	0.34%
North Ayrshire	686	2.34%
North Lanarkshire	3,205	10.92%
Renfrewshire	1,195	4.07%
South Ayrshire	316	1.08%
South Lanarkshire	2,263	7.71%
West Dunbartonshire	229	0.78%
SPT Total	10,756	36.64%

Source: DfT 2013: Vehicles licensed as at December 2014 by Council and Taxation Group⁵

2.6.1 Moving abnormal loads and forestry products

Timber is a strategically important export for Scotland, with commercial forestry covering almost 14% of Scotland's land area with the bulk of timber production coming from heavily forested regions of Scotland including Argyll & Bute, Ayrshire and South Lanarkshire in the Strathclyde region. According to the Timber

⁵ Argyll & Bute has not been taken into account as SPT covers one sub-region (Helensburgh and Lomond) in the council area

Transport Forum, current production is around 7 million tonnes and is set to rise to 10 million tonnes by 2030, which will increase the already heavy strain placed on rural roads serving these commercial forests⁶.

The Scottish Government has a target to continue to expand the forest resource by 100,000 hectares in the decade to 2022. Forestry in parts of the region generates a large volume of timber haulage which utilises routes contained in the respective council's timber strategies. Given the large concentration of commercial forestry along the west coast of Scotland, the local road networks are relatively poor. As shown in Figure 2.5 there are a considerable number of restricted routes for forestry products. Agreed timber routes are shown in red.

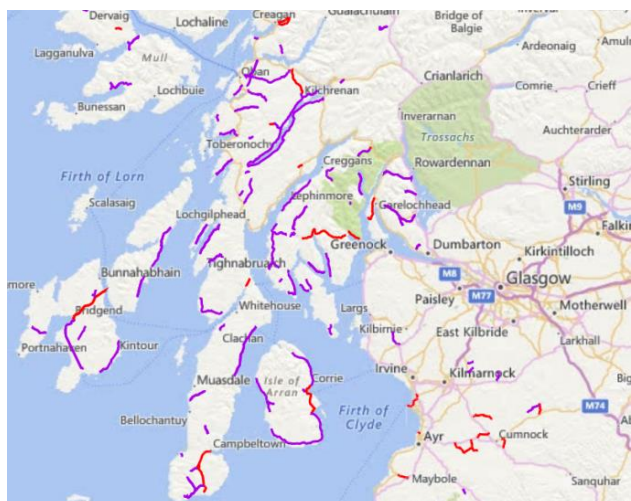


Figure 2.5: Agreed timber routes (Red) and restricted routes (Purple) - Timber Transport Forum

There has been a considerable increase in onshore wind farm development in Scotland since 2009. Between 2009 and 2014 the number of wind farms installed increased by 184% from 91 to 258. The installed capacity has also grown significantly, with 1,982 megawatts (MW) installed in 2009 and 4,859 MW connected to the grid in 2014⁷. The increase in windfarm traffic means that there is a need to consider the movement of abnormal loads across Strathclyde. The Scottish Government had a target of generating 50% of Scotland's electricity from renewable energy by 2015, and 100% by 2020 therefore there is likely to be an increase in abnormal loads across the region.

⁶ <http://www.parliament.scot/parliamentarybusiness/CurrentCommittees/90988.aspx#a8>

⁷ <http://www.biggarconomics.co.uk/wp-content/uploads/2016/07/Research-Report-on-Wind-Farms-and-Tourism-in-Scotland-July-16.pdf>

2.7 Rail Freight

Strathclyde has a network of rail lines servicing both local and long distance routes, in Scotland and UK. These vary from Glasgow's intensively trafficked suburban passenger network to the high speed West Coast Main Line (WCML) which is the key route for both freight and passengers between Scotland and England.

Given the current loading gauge on the East Coast Main Line (ECML), the WCML provides the only W10⁸ cleared freight route to the South. Strathclyde's rail freight infrastructure is relatively well developed, boasting several active inland terminals such as those at Stirling's Mossend, Mossend (EuroCentral) and Coatbridge (Freightliner) see Figure 2.6.

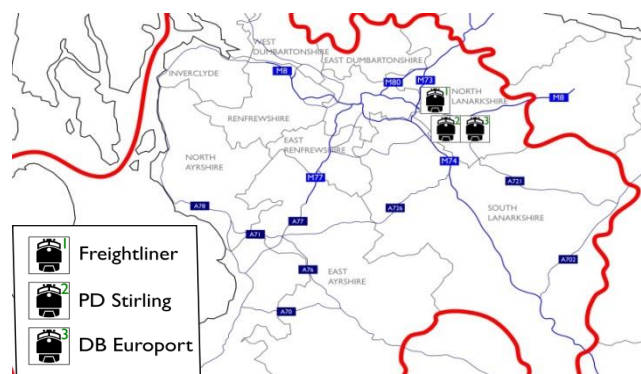


Figure 2.6: Strathclyde's Active Rail Freight Terminals 2016

As shown in Figure 2.7, the proportion of rail freight lifted in Scotland has fluctuated over the last decade or so, since 2006, coal tonnage – the main commodity transport by this mode – has dropped steeply in line with industry decline due to power station closures / conversion.

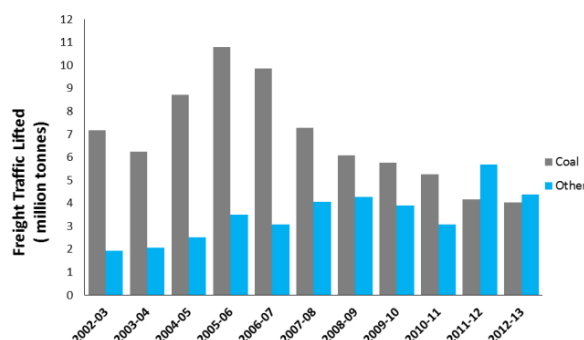


Figure 2.7: Rail Freight Traffic in Scotland 2002/03-12/13

Figure 2.8, meanwhile, highlights that the vast majority of freight that begins its journey on rail

⁸ W10 gauge accommodates 9'6" deep-sea containers

freight in Scotland has come from elsewhere in Scotland (71%), followed by other parts of the UK (23%).

Similarly, the key destinations for the freight carried by rail is Scotland (61%) and other parts of the UK (34%).

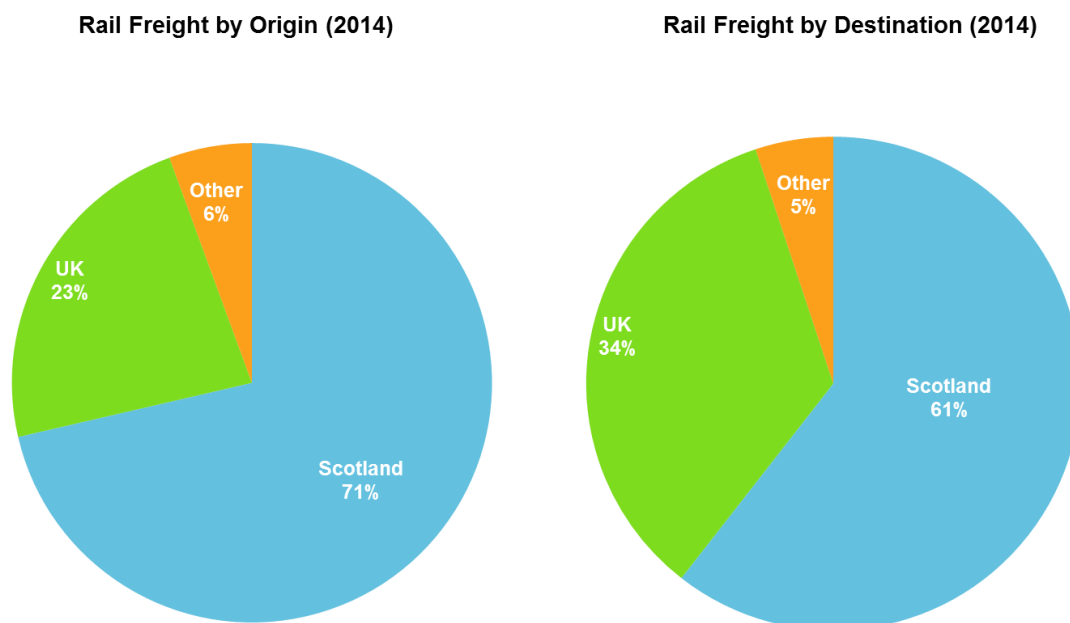


Figure 2.8: Scottish Rail Freight Origins and Destinations

2.7.1 Rail Interchanges

Mossend in North Lanarkshire represents a cluster of multi-modal freight activity incorporating a number of separate terminal sites including EuroCentral and other independent freight facilities in the immediate area. Mossend is primarily used by DB Schenker and the terminal is formed around the steel industry. Access to the site is less than a mile through a large industrial site from the A8. Signage is generally good, although does not conform to national standard signage, instead being branded as Europort.

Located opposite the Mossend Terminal is the PD Stirling site. The terminal is located approximately 1.8 miles from the A725 via the A721. Road access is generally suitable, although there is a residential population along much of the route.

Coatbridge is operated by Freightliner and located in North Lanarkshire. Coatbridge is a dry port terminal and also plays a major role as a natural hub for intra-Scotland rail moves, further enhanced by its location close to major Regional Distribution Centres, key Scottish exporters and principal road haulage hubs. There are daily services that operate out of the terminal to key ports in the UK. Services

include operations to/from Felixstowe, Southampton, London Gateway and Tilbury. Coatbridge also runs services to/from Daventry and Purfleet, which are run by Direct Rail Services Ltd (DRS).

Hunterston Terminal is operated by Peel Ports; the terminal is located in North Ayrshire at Fairlie on the Firth of Clyde. Hunterston is a deep water terminal handling a variety of dry bulk cargo. Its close proximity to a deep water port allows the transportation of large power station components, coal and biomass. Previously the terminal focuses primarily on coal imports supplying to Drax power station in Yorkshire and other possible destinations. However it is understood that Peel Ports are keen to diversify the goods using this terminal given the decline in coal traffic associated with the UK's changing power generation mix.

In addition, 3PL load aggregators such as Russells and Malcolm's have the ability to offer rail freight services using yards such as Deanside and Hillington; however there is currently understood to be no services operating.

There are several hubs which could support an increase in rail freight based around movements of containers and consumer goods:

- Burnbrae (Linwood)
- Deanside (Hillington)
- EuroCentral (Mossend)
- Gartsherrie (Coatbridge)

Each of these comes with unique challenges to enhance their further use, with the exception of EuroCentral which is set to expand with the planned Mossend International Rail Freight Park project. In terms of the most challenging potential projects, the former Princes Pier Station and Container Park site in Greenock has the potential to be re-connected to the rail network. Whilst this would require significant investment, it could provide a tri-modal interchange between rail, sea and road.

2.8 Aviation

The Strathclyde area is home to two main airports; Glasgow Airport, which is located West of Glasgow City Centre and Glasgow Prestwick Airport (GPA) which is located in South Ayrshire (see Figure 2.9).

Glasgow Airport and GPA act as freight hubs in the Strathclyde region. In 2015 Glasgow airport handled over 13,000 tonnes of cargo and 8.7 million passengers, while GPA handled over 11,000 tonnes of cargo and over 600,000 passengers (see Figure 2.10). Both airports have a number of passenger and freight services arriving and departing from various parts of the UK and overseas. As shown in Figure 2.10, Glasgow Airport has seen an increase in freight tonnes from 2011, whilst GPA has been experiencing a decrease. The decrease in freight tonnes at GPA has been driven by the economic downturn, a decline in the electronics sector; the remaining market has mostly moved from GPA to Edinburgh as a result, GPA has been overtaken by Glasgow airport in terms of freight tonnes⁹.

In addition there are a number of industrial estates which are located within close proximity to both airports. For air freight the two airports provide two quite different roles at the current time. At GPA, no freight is carried in passenger aircraft owing to the proliferation of low cost airlines. Any airfreight moves by dedicated freighter aircraft, whereas at Glasgow Airport the air freight predominately moves as belly hold freight by commercial

passenger aircraft. At GPA approximately one third of their revenue derives from freight and freight related activities. In terms of connections to the main trunk roads, Glasgow Airport is directly connected to the M8.

The main roads connecting GPA include the A77, A78 and A79. The A70 also plays a key role in connecting East Ayrshire to the airport. There are several congestion issues that already exist around these routes particularly during peak hours.

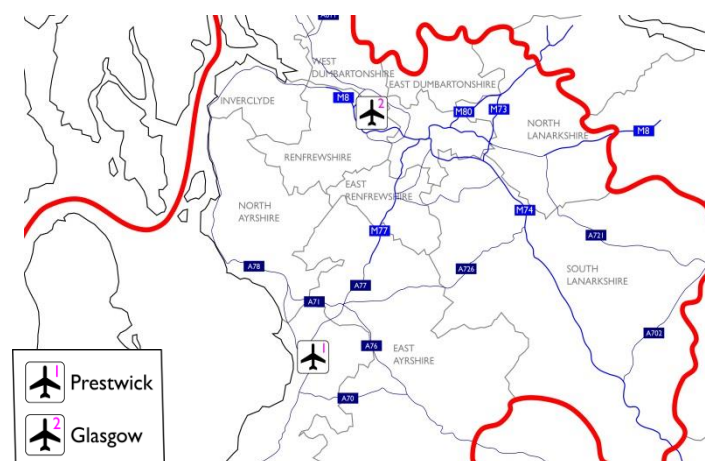


Figure 2.9: Airport Terminals in Strathclyde

⁹ http://www.audit-scotland.gov.uk/docs/central/2015/nr_150224_prestwick_airport.pdf

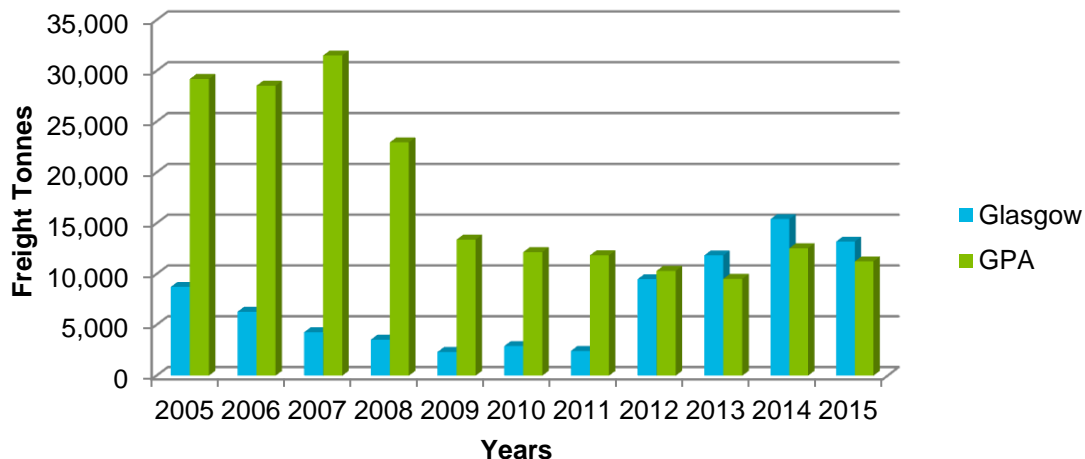


Figure 2.10: Air Freight Handled in Scotland

2.9 Water Freight

The Strathclyde region is home to seven sea ports as shown in Figure 2.11:

- Port of Ayr
- Port of Troon,
- Hunterston,
- Gourock,
- Greenock,
- Port Glasgow,
- King George V Dock.

These ports act as major freight hubs, accommodating shipments of a range of commodities, including timber, agricultural materials and coal as well as providing passenger/freight ferry services.

Peel Ports Hunterston is a deep sea port that has a coal handling facility located on the railway line between Hunterston and Fairlie and is used almost exclusively for the import of coal. It has therefore suffered with the decline in the use of coal to generate energy.

The remaining four ports handle cargo with timber predominantly being handled at Port of Ayr and Port of Troon. Overall, over 16.500 tonnes of cargo per annum was either imported or exported through these ports according to the most recently published statistics¹⁰. The main types of traffic through the ports were crude oil, oil products, dry bulk products and coal. In addition most exports were destined for western European countries and imports mostly from Columbia and Norway

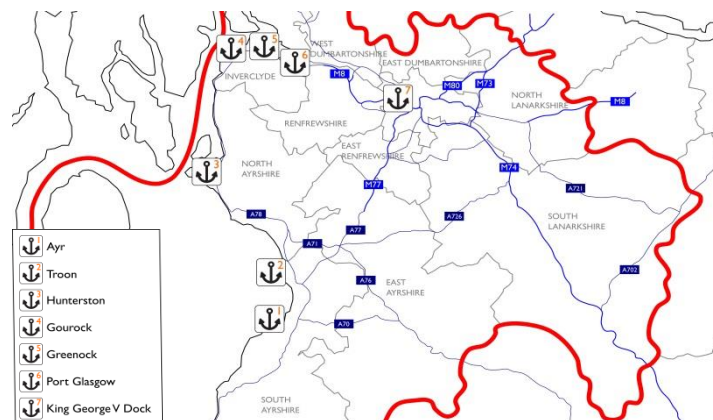


Figure 2.11: Ports in Strathclyde

¹⁰ <http://www.transport.gov.scot/report/i/415388-12.htm#tb3>

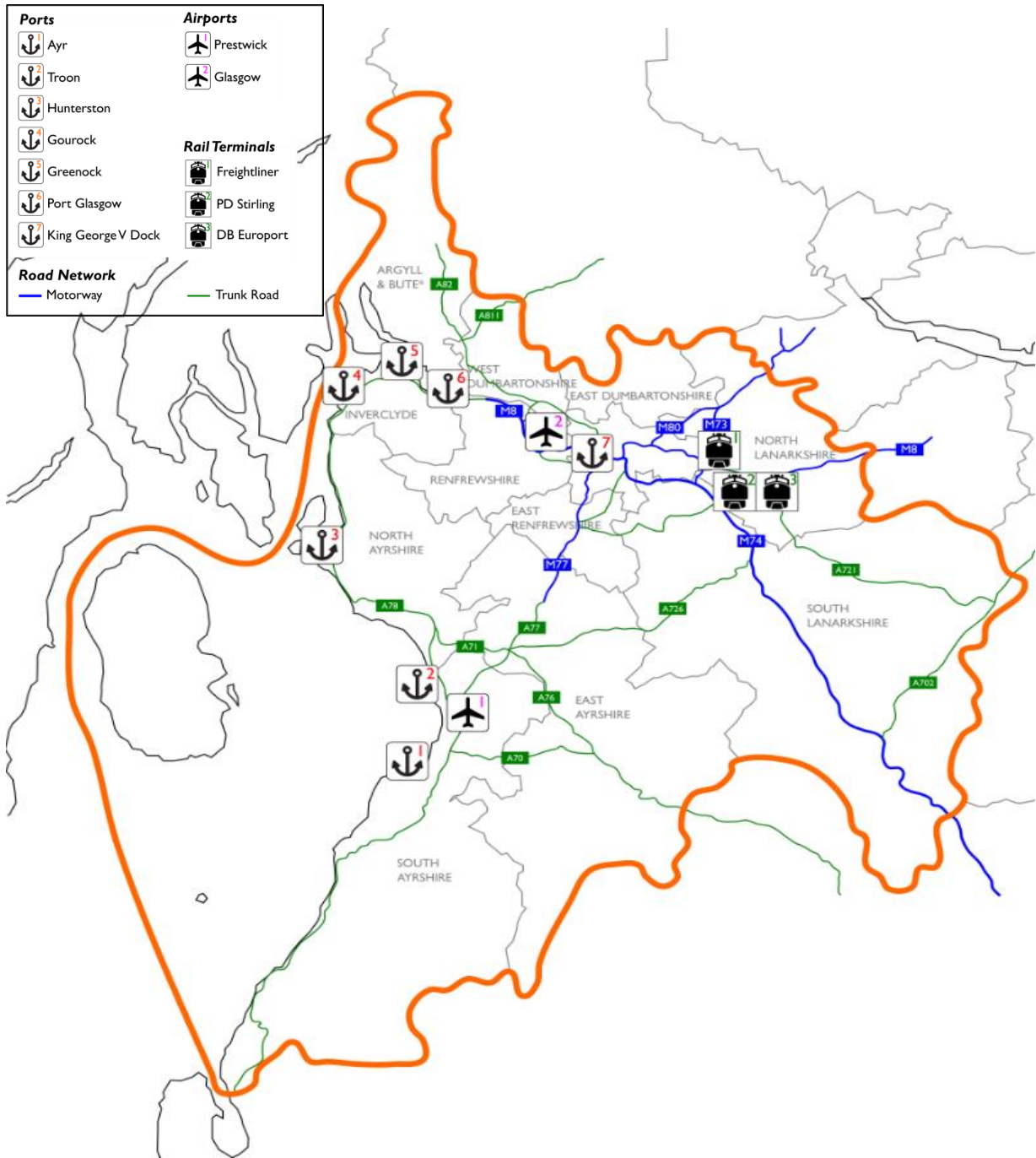


Figure 2.12: Strathclyde Freight Network

3. Current Freight Issues

Freight and logistics activity has both positive and negative impacts on our day to day lives. In order to achieve our ambitions, SPT needs to address existing issues affecting freight transport efficiency and continue investing in freight transport infrastructure.

3.1 Introduction

This section introduces the existing issues identified, within the region, which are to be addressed by this freight strategy.

3.2 Growth in Strathclyde

Scotland's population is projected to increase by 7% over the next 25 years, from 5.35 million in 2014 to 5.70 million by 2039 and continue to rise into the future. However, this pattern is not expected to be experienced in all areas of Scotland.

Strathclyde accounts for approximately 42% of the total percentage of Scotland's population¹¹. The local authority areas in Strathclyde projected to show the largest population growth over the period 2014 – 2039 are East Renfrewshire (13%), Glasgow (7%), East Dunbartonshire (6%) and South Lanarkshire (4%)¹², net-migration will contribute to this growth, and natural change (more births and deaths) will also have some contribution.

Local authority areas projected to experience population decreases by more than 5% by 2039 include Argyll & Bute (8%), North Ayrshire (7%), West Dunbartonshire (7%). North Ayrshire and Argyll & Bute will

experience a decrease in population despite net migration and the populations of West Dunbartonshire and Inverclyde projected to decrease a result of both net emigration and negative natural change¹³.

The growth in population within Strathclyde over the 25 years will add pressure to the transport network as a result of increases in road and rail traffic.

3.3 Air Quality

Emissions from heavy goods vehicles (HGVs) account for 16% of Scotland's transport emissions¹⁴ at 2.3 MtCO₂e¹⁵. Emissions rose by 6% in 2012 and are now 8% higher than in 1990¹⁶.

Road vehicle standards have improved significantly in recent years. However there is still a need to monitor and address issues relating to local air quality and noise issues from HGV deliveries.

Transport is a significant contributor in terms of carbon emissions and poor air quality standards, especially in urban or built up areas. In Scotland it is estimated that 2,000 people die prematurely every year as a result of poor air quality but emissions related to freight transport amount to approximately 30% of all emissions from road transport. The role of goods vehicles in contributing to poor air quality through exhaust emissions is a particular cause for concern in Strathclyde.

Given the rural nature of parts of Strathclyde, there is pressure in meeting the needs of businesses as well as the freight industry due to the resulting environmental effects.

Five Local Authorities in Strathclyde have been declared Air Quality Management Areas (AQMAs) due to levels of Nitrogen Dioxide and

¹¹ <https://www.nrscotland.gov.uk/files/statistics/population-projections/snpp-2014/pop-proj-scot-areas-14.pdf>

¹² <https://www.nrscotland.gov.uk/files/statistics/population-projections/snpp-2014/pop-proj-scot-areas-2014-fig-for-news-release.pdf>

¹³ <https://www.nrscotland.gov.uk/files/statistics/population-projections/snpp-2014/pop-proj-scot-areas-14.pdf>

¹⁴ <https://www.theccc.org.uk/wp-content/uploads/2015/01/Scotland-report-v6-WEB.pdf>

¹⁵ Million metric tons of carbon dioxide equivalent. This measure can aggregate different greenhouse gases into a single measure, using global warming potentials. One unit of carbon is equivalent to 3.664 units of carbon dioxide.

¹⁶ <https://www.theccc.org.uk/wp-content/uploads/2015/01/Scotland-report-v6-WEB.pdf>

Particulate Matter exceeding European standards. AQMAs are as follows:

- **City of Glasgow** Byres road / Dumbarton Road, Parkhead Cross and Glasgow Citywide AQMA ¹⁷.
- **North Lanarkshire** – Chapelhall, Coatbridge, Harthill, Motherwell, Moodiesburn and Croy.
- **South Lanarkshire** – Lanark, Rutherglen, Whirlies Roundabout ¹⁸.
- **East Dunbartonshire** – Townhead Kirkintilloch, Park Road/ Main Street, Milngavie, Crowhill Road, Bishopbriggs, Roman Road/ Drymen Road, Bearsden ¹⁹.
- **Renfrewshire** - Paisley Gordon St -, Paisley St James St, Renfrew Cocksels Loan, Johnstone, Renfrew Town Centre ²⁰.

Traffic congestion, including a high proportion of freight vehicles in the area are key contributors to the poor air quality in the declared AQMA locations.

Within Glasgow, a Low Emission Zone (LEZ) is being considered due to air pollution exacerbated by levels of congestion meaning restrictions will be put in place for the most polluting vehicles. It should be highlighted however road vehicles are in fact becoming less polluting as a result of initiatives such as eco-driving and the increasing Euro Standards on cars and lorry engines. The majority of fleets in Scotland are Euro 5 compliant, and road haulage operators are investing in Euro 6 vehicles ensuring they are legally compliant with the current standards.

In addition, a number of local authorities are looking to implement Eco-Stars to tackle emissions from freight transport, improve fuel efficiency and fuel consumption. Parts of Strathclyde have implemented Eco-Stars and these include:

- **Glasgow City**
- **North Lanarkshire** (including the towns of Cumbernauld, Coatbridge, Airdrie and Motherwell)

¹⁷ <https://www.glasgow.gov.uk/index.aspx?articleid=18863>

¹⁸ http://www.southlanarkshire.gov.uk/downloads/download/815/air_quality_management_areas

¹⁹ <https://www.eastdunbarton.gov.uk/residents/environmental-health-residents/pollution>

²⁰ <http://www.renfrewshire.gov.uk/airquality>

- **South Lanarkshire** (including the towns of Hamilton, Lanark and East Kilbride)



100% of respondents support minimizing air quality impacts from freight transport

Online Survey



There is not enough evidence at present that freight traffic disproportionately contributes to significant environmental problems in the wider Strathclyde region despite there being a number of congestion hotspots that exist. The freight industry continues to face numerous challenges in its efforts to increase efficiency and lower emissions.

3.4 Traffic Congestion

Road remains the dominant mode for freight movement, principally because of its flexibility and the need to service a widely dispersed range of sites.

Most freight in Scotland is carried by road, a key issue for freight traffic is road congestion — in common with private vehicles and buses²¹. The Strathclyde region is a key gateway for Scotland and the impact of congestion from freight movements is a major issue.

Freight traffic in Strathclyde is moved primarily by road utilising the trunk road. The increase in freight traffic across the region results in parts of the road network having to function at or beyond peak capacity, despite road improvement works that are currently underway.

The most significant problems relating to congestion are localised and associated with other issues such as roadworks, accidents and bottlenecks in transport infrastructure. 11% of driver journeys are delayed by traffic congestion in Strathclyde ²².

²¹ <http://www.transport.gov.scot/report/j11260a-03.htm>

²² <http://www.spt.co.uk/corporate/documents/Annual%20Report%202015-16.pdf>

In addition transiting freight plays a role in congestion, as freight not destined for Strathclyde interacts with local vehicles during peak times. Unsuitable diversionary routes are often used by HGVs trying to avoid road works, congestion and incidents. This contributes to adverse environmental impacts.

Consultation with key stakeholders and desk top research revealed that there are a number of key locations that experience high volumes of congestion during peak periods on a daily basis and these include:

- Consultation highlighted that the M8 and M74 are heavily utilised by vehicles travelling to other parts of Scotland and not destined for Strathclyde. Although there are road improvements underway congestion remains a key issue particularly during morning and evening peak hours.
 - Over a fifth of motorway traffic is within the City of Glasgow²³.
- Desktop research revealed that the routes to the Cairnryan port via the A75 and A77 are out-dated and unable to cope with the current levels of freight traffic.
- Desktop research and stakeholder consultation revealed that the A737 and A77 in Ayrshire experience congestion at peak times, as the route runs through towns and communities.
- Through desktop research, transport Scotland highlight the importance of the A77 as a key link to Glasgow Prestwick Airport. Approximately 10% of vehicles using the road are HGVs, which tend to be grouped together in 'platoons' created by the HGVs arriving for or departing from the ferry services²⁴.
- Feedback from the workshop highlighted that there is queuing and congestion in and around key industrial estates such as Amazon in Inverclyde and EuroCentral in Mossend.
- The only route connecting East and West Ayrshire is the A71 and stakeholders felt that this is causing resilience issues.
- Feedback from the workshop also highlighted the significance of the A73 as a strategic route. It was felt that the A73 is perceived by lorry drivers to be the

quickest route and this is because traffic is moving albeit slowly, while the other alternative routes are often at a standstill.

- A road haulage operator expressed that congestion in the morning is always a key problem. The different speed limits for cars and lorries causes safety concerns with risky overtaking by cars.
- Stakeholders highlighted that there is no direct route from the M77/M8 to the west without having to exit the motorway. As a result there is often congestion where vehicles leave the M77 and join the M8.
- A road haulage operator highlighted that congestion affects them significantly; as their vehicles have to leave earlier as it takes longer in traffic. We do not want to put our reputation regarding reliability at stake.
- Another road haulage operator stated that the volumes of traffic in Strathclyde affect their ability to operate more efficiently.

This list is not exhaustive and it is recognised that congestion problems occur elsewhere on the road network across Strathclyde.

3.5 Connectivity

Irrespective of the network all nodes for transport are significant in the region, and each mode of transport has an impact on another. The airports, seaports and rail terminals act as key gateways to the region and they are vital in the development of the region's economy.

Within Strathclyde the connectivity to key seaports, airports and rail interchanges is generally good in terms of road access; nonetheless there are some issues that exist. It is therefore essential as part of this strategy to assess the strategic network links to the key ports and interchanges.

3.5.1 Sea Ports

ABP Ayr is well placed to intercept the M77/A77. The port has extensive rail land with good rail access to most of the port.

ABP Troon is situated 35 miles from Glasgow. The port is well served by road particular the M74 and M77 which leads to Glasgow and the M8 for Edinburgh. The port has no direct rail access.

Peel Ports Hunterston is served by the A78. The port is not particularly well connected by road with the rest of the SPT region, nor to

²³ <http://www.transport.gov.scot/statistics/j251205-065.htm>

²⁴ <http://www.transport.gov.scot/report/j11260a-03.htm>

Scotland as a whole. The port has a coal drop located on the railway line between Hunterston and Fairlie, although the railway does not enter the port itself.

Peel Ports Greenock is also served by the A78 which is c.300m from the front gate of the port. There is no direct rail access to the port, although one of the old railway alignments is currently used for container storage.

Port Glasgow is directly linked to the A8, however the port has no direct rail access and rail corridors have been built over.

Peel Ports King George V Dock has direct access to the M8 and A8 via Renfrew road. There is no direct rail access to the port, with the M8 crossing the old alignment. However the Russells' rail-linked Hillingdon terminal is less than two miles from the site (further down the same alignment on the other side of the M8).

Although Cairnryan is out of the Strathclyde boundary the port provides frequent and heavily used ferry services between Scotland and Northern Ireland. Cairnryan is served by the A77 which is an important trunk road linking with Glasgow. The route is used by a mixture of commuter, tourist and freight traffic. Cairnryan is not rail connected.

3.5.2 Airports

Glasgow Airport has direct access from the M8. Whilst there are plans for a Glasgow Airport Rail link, currently the airport is not connected to the rail network.

Glasgow Prestwick Airport is accessed directly off the A79 at the Monkton Road roundabout, with some freight facilities having direct access onto the A79. The airport has a dedicated passenger station, although there are no dedicated freight links into the airport.

3.5.3 Rail terminals

Russells' Hillington is accessed via junction 26 of the M8 via Hillington Road through industrial workings and wide roads.

P.D. Stirling is located approximately 1.8 miles from the A725 via the A721. Road access is generally suitable, although there is a residential population along much of the route.

DB Mossend Terminal (EuroCentral) is served by the A8 which intercepts the M8. The M8 also links with the M73/M74 near

Bargeddie. Mossend does have rail access however the rail siding lengths at Mossend require some extension.

Freightliner Coatbridge is well placed to intercept the A8/M8 and via the A8 the M73/M74 and A80/M80 strategic road. Coatbridge has a well-developed rail facility with access to both the central rail line and West Coast Main Line. It is located on the electrified part of the Motherwell to Inverness mainline, between Edinburgh and Glasgow. It should be noted that Coatbridge is utilising equipment which has almost reached the end of its life. The terminal operates with cranes which are over 40 years old.

There's rail access at PD Stirling (Mossend), DB Cargo (EuroCentral) and Freightliner (Coatbridge) and all are in use.

WH Malcolm's Elderslie site at Linwood, is located off the A737 via J28a / J29 of the M8 to the West Of Glasgow and is adjacent to the Paisley - Ayr railway line. Although not currently active, the site is rail connected and has been used in past for freight traffic including the Freight Best Practice Case Study between this site and Grangemouth. (See case study on Page 29).

There is scope to increase the use of rail from rail connected interchanges and seaports, investment in rail freight facilities will play a vital role in supporting any increases in rail freight use.

3.6 Directional Signage

Signage is essential in encouraging HGV drivers to use the most appropriate and suitable routes across the region.

Directional signage enables different vehicle types with different dimensions and load capacities, carrying different commodities to navigate through the region safely and without difficulty.

It is preferred that HGVs use the strategic road network or trunk roads as they are designed to accommodate heavier and wider vehicles as well as high volumes of traffic. The use of trunk road network (A76, A77, A78, A82, A80, and A71) means that HGVs are segregated from residential areas.

With pressures to deliver in the fastest time and using minimal fuel, drivers sometimes feel pressured to ignore signs and use alternative routes which may not be suitable for their vehicle type. For drivers unfamiliar with the

area, the use of satellite navigation systems often results in road signs being missed or ignored and this often leads to them using unsuitable roads for HGVs.

“

92% of respondents stated that there is a need to review existing signage and agree on the most appropriate routes for freight

Online Survey

”

The directional signage for HGVs in parts of Strathclyde and beyond is regarded as insufficient and therefore needing improvement. There is a lack of quality signage leading to industrial estates, freight terminals, business parks, and in some cases no signage exists on the routes at all, or signage is not shown consistently along the route.

Some signage issues observed are as follows:

- Signage leading to lorry parks is not consistent and at times it is obscured by vegetation.
- There is a lack of signage leading to EuroCentral for example, signage from the motorway and from other city centre areas is not repeated and this can confuse some drivers.
- There is a lack of directional signage leading to the rail freight terminals including Russell/Freightliner and DB Cargo UK.
- Some signage exists leading to industrial estates.

This list is not exhaustive but is reflective of signage issues across the SPT network.

3.7 Urban Deliveries

Light Goods Vehicles (LGVs)

Make up **15%** of road traffic.

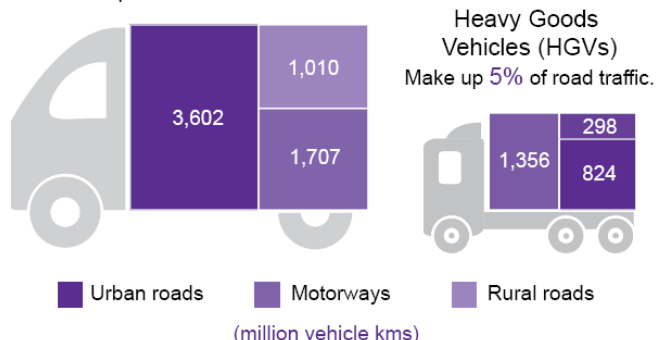


Figure 3.1: Urban Deliveries by LGVs and HGVs²⁵

With the growth of e-commerce, there has been an expansion in the number of delivery vans in Strathclyde due to the increase in office/home deliveries and in the context of supermarkets there has been an increase in internet shopping (though these may be replacing several car trips).

Pallet networks and the emergence of ‘Click and Collect’ businesses have also resulted in significant increases in vans that are undertaking last mile deliveries. As shown in Figure 3.1, Light Goods Vehicles (LGVs) make up 15% of road traffic in Scotland and account for a higher volume on urban roads in comparison to HGVs. Light goods vehicles also account for a large proportion of urban freight movements.

“Scotland is expected to see a 31.9% growth rate of online orders by 2018”²⁶

Overall, deliveries into urban areas across Strathclyde work surprisingly well. In particular, within Glasgow City Centre most of the drivers we engaged with are regulars in the area and therefore know the street layout and the times they are allowed in the area. Most companies arrive and leave before the access restrictions are in force and so little inconvenience is apparent. Our own observations revealed that:

- On Buchanan Street, restrictions mean vehicles can only deliver before 10am and after 4pm.
- Argyll Street is not heavily used by HGVs over 3.5 tonnes. Most of the vehicles

²⁵ Source: Scottish Transport Statistics

²⁶ <https://www.home.barclays/content/dam/barclayspublic/docs/BarclaysNews/2014/September/the-last-mile-report.pdf>

using the pedestrianised street are vans and these are mainly window cleaners, waste collectors.

- Some of the high street shops such as TKMaxx and JJB sports have entrances for freight vehicles via Miller Street. Miller Street can accommodate larger articulated vehicles.
- Marks and Spencer's and Sports Direct use Vincent Street.
- Tesco Express on Hope Street has deliveries in the morning between 5am – 8am and in the evening after 7pm. The store tries to avoid deliveries during rush hours. A refrigerated vehicle was observed parked on Bothwell Street.

Feedback from the initial freight strategy development workshop held in November 2016 suggested that a consolidation centre is not necessarily appropriate for Strathclyde and there is not significant demand for one at the present time. A study was conducted by Steer Davies Gleave in 2010 which reviewed a number of industry sectors in Glasgow including retail, construction and logistics sectors to determine whether there was sufficient demand for a consolidation centre to replace/restructure the existing logistic operations. The study concluded that a consolidation centre was not beneficial in Glasgow however further work was essential to appreciate the benefits of a retail focused consolidation centre. Whilst the concept of a consolidation centre is not in high demand in Strathclyde, the workshop pointed out that there is potential scope to use council depots as a network of consolidation centres in the future for retail goods. The study also examined the possible benefits and interest in consolidation of construction materials. Issues surround responsibility for goods passed through third parties, insurance concerns, double handling etc meant this was seen as an unattractive option for the construction industry that has no difficulty in having goods delivered directly to site.



3.7.1 Availability and utilisation of loading /unloading bays

One of the most common problems faced by a number of local authorities is the availability, utilisation and sufficient parking enforcement of loading and unloading bays.

Lack of sufficient parking enforcement has been identified as a particular problem in some locations and in particular Glasgow city centre, West Dunbartonshire and Inverclyde. This leads to other issues such as congestion, abuse of loading and unloading bays, illegal parking in loading bays, increased demand for bays and excessive time spent by vehicles in loading bays.

The provision of good quality loading facilities with high quality parking areas can reduce the time taken to unload and/or load goods, reduce congestion from poorly parked or illegally parked vehicles, and allow for safer delivery activities:

While the supply of loading bays is considered to be good across the Strathclyde region. A number of issues still exist with loading and unloading in towns and commercial centres.

- Delivery drivers are not able to park close to their delivery points as other vehicles and in particular taxis are often parked illegally in the loading bays. Within Glasgow, as delivery drivers wait for loading bays to become available this results in increased idling. With Glasgow being a designated AQMA the time spent by vehicles waiting contributes negatively to air quality and results in additional costs to the transport operator both in time and fuel.

- Discussions in the workshop highlighted that within Inverclyde, along Kempock Street (one way street) there are a number of shops including supermarkets such as Sainsbury's, located on the street that have been offered loading/unloading bays however the companies do not use them and they tend to unload/load at a different area near residential properties and this creates a lot of noise especially when the cages are being moved during out of hours.
 - Inverclyde Council has introduced new/more loading bays for businesses however there is limited enforcement due to a lack of resources.

3.7.2 Out of hours deliveries

Delivering during the day/ peak hours is more challenging for freight vehicles than out of hours due to the high traffic volumes and street activities during peak hours. This can lead to difficulties in accessing loading bays and journey times being affected. Out of hours deliveries enable operators to schedule deliveries at times when traffic volumes are low and street activity is reduced.

Out of hours deliveries to retail premises, comprising quiet deliveries during the night and during off-peak periods offer various benefits to retailers and transport operators in addition to the wider environmental and social benefits. The 2014 Glasgow Commonwealth Games provided an example of how re-timing and re-thinking deliveries is practical. The relaxation of out of hour's deliveries with the support of local authorities could be beneficial for Strathclyde. At present specific night-time curfews are in place on deliveries to certain supermarkets to minimise disruption and noise in residential areas.

Consultation with stakeholders highlighted a number of issues regarding out of hours deliveries and these are as follows:

- A number of local authorities in Strathclyde have curfews in place for night time deliveries and this prevents HGV movements spreading when traffic flows are low. While out of hours deliveries are generally before 7am.
- It should be emphasised how out of hours deliveries are not always at 3am or during peak hours, but they can be at 10pm for example where noise levels may-be more acceptable.

- One key point raised was the importance of involving affected traders when designing restrictions.
- It was highlighted that efforts are being made to repopulate Glasgow City Centre potentially conflicting with the aspiration of more out of hour deliveries.
- Discussions in the workshop highlighted that the business cases for urban deliveries have increased arising from the significant increase in the demand for home deliveries. Legacy supermarkets and the rise in the number of smaller convenience format supermarkets in urban areas has led to increased pressure by delivery vans on the local on-street parking capacity in the main due to the lack of on-site parking for such vehicles.
- Changing zoning regulations may prove difficult when implementing out of hours deliveries.
- As part of Glasgow's City Centre strategy and the reprioritisation of space to people and more sustainable modes of travel, there will be a need to balance the needs of freight – this could potentially lead to more out of hour deliveries and will require careful consideration.

3.7.3 Home Deliveries / Redeliveries



1 in 3 deliveries are missed.

Barclays, The last mile report 2014



The biggest issue facing logistics firms is delivering goods when recipients are not present. The demand for home and office deliveries, both food and non-food items have grown significantly in recent years. Internet shopping has been the fastest growing sector. In addition, the introduction of online shopping and click and collect has resulted in changes in consumer shopping patterns.

One of the issues faced by many businesses and councils are redeliveries, failed home deliveries that need to be repeated result in

increased number of trips made to one particular location and this creates additional traffic on the local road network as well as implications for air quality.

Scotland is expected to see 31% growth in online orders by 2018. Physical deliveries are expected to increase by 40% overall, but the number of DIRECT deliveries to consumer's addresses are expected to fall.

A number of stakeholders during the workshop pointed out that often companies who miss the recipient will try to redeliver to the same

address more than 2 times, thus creating more traffic on local road networks with implications for air quality. Introducing lockers or collection points where deliveries can be left when hauliers miss a delivery was suggested as one option to address this problem.

The workshop discussions expressed that the public sector have an important role to play in raising the standard of freight deliveries. The adoption of best practice schemes/initiatives and promotion of more efficient vehicles as part of public sector fleet management was suggested as an option.

3.8 Glasgow City Centre: An Urban Case Study

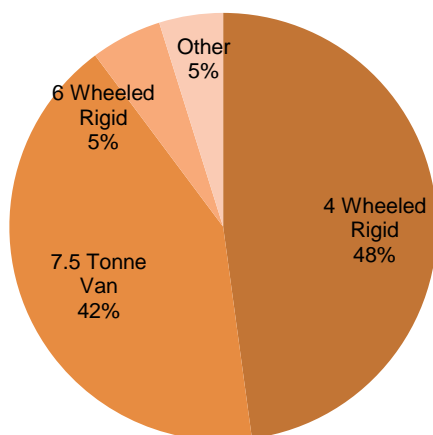
In order to understand some of the issues surrounding urban deliveries and traffic congestion, a detailed study was undertaken of Glasgow City Centre on the morning of 21st September, 2016. For 3 hours, during the morning peak and during key delivery hours, the delivery and servicing activity in Glasgow's shopping streets was closely analysed by experts on the ground.

Observers were stationed at four locations across Buchanan Street and Argyle Street (further count sites on Argyle Street did not provide sufficient data) and these are shown on the diagram to the right: Bath Street, George Street, St Vincent Street/Place and Argyle Street.

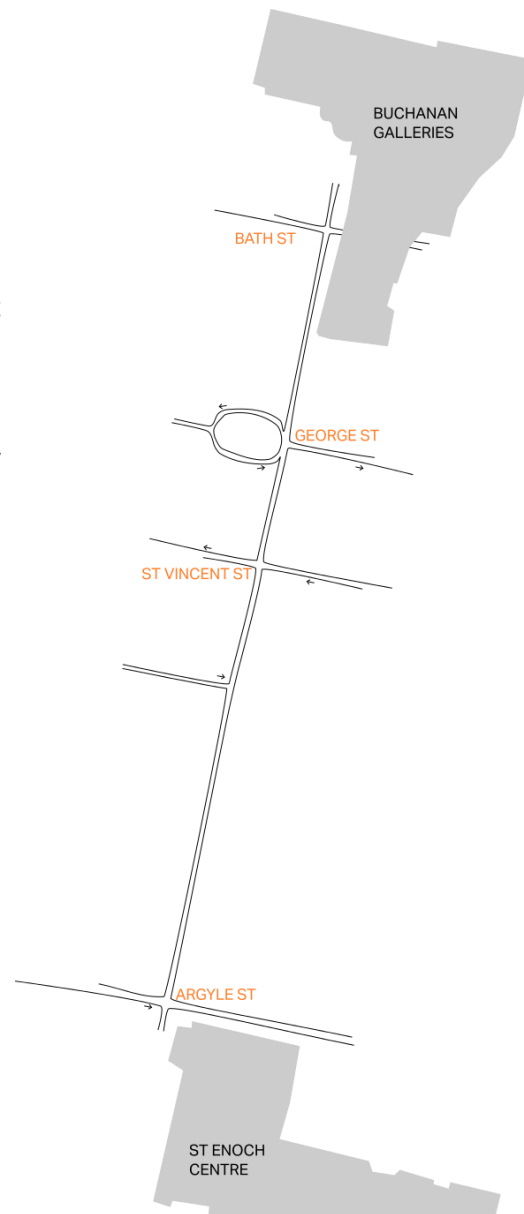
During the count period (7am to 10am) 262 vehicles were classified. After analysis this was determined to be 200 distinct vehicles, of which some were seen at multiple sites, on multiple occasions, or both.

Vehicle Type

As is shown below, the majority of vehicles seen were those expected given the urban environment. Namely the smaller four-wheeled rigid lorries and vans licensed up to 7.5 tonnes.



The only other vehicle group of note is the six-wheeled rigid group, which is mainly composed of rubbish lorries doing their rounds.

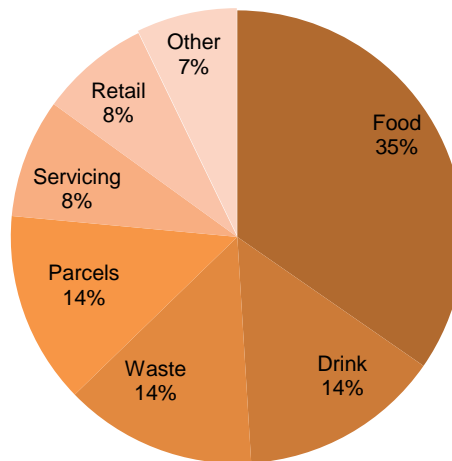


This indicates that the vehicles observed were small and suitable for urban deliveries, although the large number of vans suggests that there is potential scope for an increase in consolidation and groupage to reduce traffic.

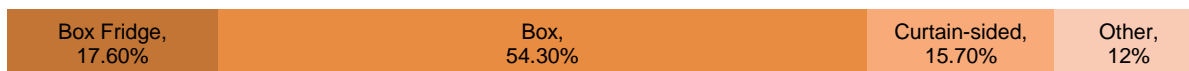
Industry Type

Almost half of all the individual vehicles where the industry type could be clearly ascertained (either through the body type of the vehicle, the load or the company, a total of 153 vehicles) were in the food and drink industries. This corresponds with the high amount of restaurants and bars in the city centre.

Other sectors of note include waste (the aforementioned rubbish lorries) and parcels, a sector which is growing significantly across the country. This percentage may understate the true number of vehicles involved in the delivery of parcels due to the large number of unmarked vans which operate in this sector, either for security purposes or because they have been rented from third party operators.



Body Type

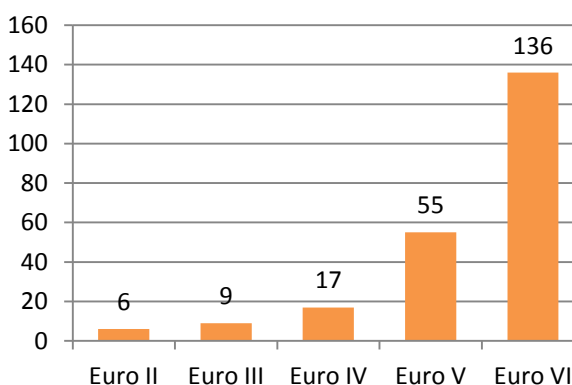


Over half of the vehicles observed were box units, of the type used for moving general goods, retail or ambient food and drinks. Refrigerated vehicles made up under a fifth of traffic, and these were linked to the catering and food industries. Curtain-sided vehicles are often used in the retail and drink industries for easy access to load and unload. No other individual type of vehicle made up over 5% of identified vehicles and these have been grouped together under “other” including vehicles involved in the construction and waste industries.

Euro Class

Euro VI engines are by far the most common type of engine, which suggests that there are fewer air quality improvements to be made by encouraging fleet upgrade and renewal, although 6.7% of vehicles in the sample were operating with Euro III or lower, which is significantly more polluting.

However, with over 85% of vehicles of which the Euro class could be established (223 vehicles) being either Euro V or Euro VI, the fleet in Glasgow would appear to already be relatively new, being less than 9 years old.



- Glasgow City Council
- DHL
- Dunns
- TNT
- Bidvest
- Grahams
- Bernard Corrigan
- Brakes

Hauliers

To the left is a list of the ten most common hauliers or operators from the identified vehicles where an operator could be determined (68% of the total sample).

These hauliers correspond with the industry sectors already identified, ranging from parcels

SPT

- Carlsberg
- Inverarity Morgan

(e.g. DHL) through food and drink (Dunns and Inverarity Morgan) to waste (Glasgow City Council).

3.9 Overnight Lorry Parking

Within the region, there is a lack of overnight facilities for HGVs. Drivers are required to take rest periods during their working hours, and there are two types of rest breaks. Drivers require a 45 minute break after 4 ½ hours of driving and overnight drivers require a minimum of 9 hours rest, therefore they need areas to park their vehicles and use a number of facilities such as showers, toilets, refuelling stations, and catering facilities.

Lorry parking facilities provide essential services to the freight industry and its drivers, particularly those who operate over long-distances outside the immediate area. While some drivers may only be stopping for a few hours, those that need overnight accommodation may require a secure lorry park with CCTV coverage, controlled entry and exit, security compound and areas for repairs. In Europe the estimated market value of all type of goods stolen from road transport is €11.6billion²⁷.

Approximately 42% of Scotland's population²⁸ reside in Strathclyde and there are concentrations of businesses and freight generators in and around urban areas of Glasgow, Ayr, Greenock, Bellshill, Paisley Motherwell, Hamilton, and Dumbarton etc. These areas generate large volumes of HGV movements and drivers requiring parking facilities.

As freight movements frequently result in demand for overnight lorry parking particularly for drivers carrying out long distance journeys. Lorry parking issues exist both on the strategic and local road network.

Our analysis has identified seven overnight parking facilities within Strathclyde. These facilities are concentrated along the M74:

- 3 Motorway service area stations
- 4 privately owned truck stops
- The majority of lorry parks can accommodate 20 vehicles
- Basic driver facilities are provided in almost all of the lorry parks
- The average cost to stay overnight is £10 for parking only and £15+ for parking and a meal voucher

- Selected sites have fully secured parking either with CCTV, a security fence and night patrols

Given the criteria of facilities which drivers look out for when choosing a lorry park, Table 3.1 illustrates the variety of facilities available at the lorry parks in Strathclyde and the cost to park overnight.

Away from the truck stops and motorway service stations along the M74 informal overnight lorry parking is a regular occurrence in laybys, residential roads and industrial estates. Discussions during the workshop expressed that the roads around industrial estates are not desirable locations for lorry parking due to the lack of surveillance, both natural and through CCTV. This in turn contributes to a number of impacts such as lorry related crime of load and fuel theft, litter anti-social behaviour and damage to infrastructure e.g. verges.

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92% of respondents stated that there is a need to conduct a detailed lorry parking study

Online Survey

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Consultation with those involved in the industry highlighted the need to improve lorry parking within Strathclyde. It was noted that currently driver's needs are not fully catered for as some lorry parking facilities do not have catering facilities and therefore drivers are forced to go elsewhere. More recently unofficial in town-parking is being chosen by drivers due to the amenities available nearby.

Discussions in the workshop highlighted that the lack of safe and/or secure lorry parking across Strathclyde is somewhat attributed to the absence of overall ownership of lorry parking. Lorry parking facilities have been private sector led and are not always profitable. Specific comments were made regarding the cost of using lorry parking facilities. It was pointed out that the cost that comes with official lorry parks often deters their use, even when the employer agrees to

²⁷ <http://www.sensitech.com/assets/whitepapers/underreportedcargotheftweb.pdf>

²⁸ <https://www.nrscotland.gov.uk/statistics-and-data/statistics/stats-at-a-glance/council-area-profiles>

cover the cost, many drivers instead choose to pocket this allocation and park elsewhere for free.

In addition to the workshop, an initial consultation was completed in the study area to gain an overarching appreciation of the issues influencing drivers when looking for overnight parking facilities. The discussion guide and findings are presented in *Appendix C* which provides the summary for the key points below.








- The majority of drivers indicated that they tend to park up at industrial estates and laybys overnight or at the depot where they have their last drop.
- One key issue highlighted, was that when a driver utilises a layby, they occasionally face diesel theft.
- A number of drivers pointed out the cost of using a truck stop and for some drivers it deters them from using these facilities particularly if they are paying for them alone.
- The three top facilities which drivers look out for when using a lorry parking facilities are clean showers, / WC facilities, good food, and security was indicated as being very important particularly for drivers moving high valued goods.

Lorries were observed across Strathclyde at the side of the main road network (close to motorway service stations), in laybys, industrial estates, residential streets and near fuelling stations. Discussions in the workshops raise the point that the police in Strathclyde receive a number of complaints from the Showcase Cinema and Silverburn Shopping Centre regarding HGVs parking on their premises. The premises are not designed to cope with 40 tonne lorries.

In addition some vehicles with refrigeration units and in-cab heaters require the engine to be running and this contributes to air and noise pollution. This is a key concern particularly for vehicles parking close to residential areas.

Evidently consideration should be given to providing a secure facility that will allow overnight parking. SPT aspires to improve the overnight parking arrangements for HGVs in the region. To address this issue consideration should be given to the use of existing facilities, currently used for other purposes that may be used outwith their normal operation overnight lorry parking, for example park and ride sites, and car parks linked to arenas.

Table 3.1: Existing Lorry parking facilities in Strathclyde

	RedMoss Truck stop	Welcome Break Abington	Happendon Services	Route 74	Hamilton Services (Road Chef (SB / NB))	West Way	Riggend
							
	From £10 per night (meal vouchers available)	£18.50 per night, incl a £6 meal voucher.	£9 per night	£15 per night (parking only) £23.50 incl meal voucher	£22 per night (parking only) £24 incl meal voucher	£10 per night (parking only)	£10 per night (parking only)
Security							
ANPR		X	X	X	X		
Night Patrols	X			X		X	X
Barrier Entry/Exit				X			
Security Fence	X			X		X	X
Floodlights		X	X	X	X	X	
CCTV	X	X	X	X	X	X	X
Driver Facilities							
WC/showers (male & female)	X	X	X	X	X	X	X
Café/Restaurant	X	X	X	X	X	X	
TV Lounge	X			X			
Accommodation	X	X	X		X		
Telephone	X	X	X	X	X		
Wi-Fi	X	X	X	X	X		
Vehicle Facilities							
Fuelling Facilities SNAP Account and Fuel Cards accepted		X	X	X	X		
Shop (24 Hrs)		X		X	X		
Repairs				X			
Truck Wash				X			
Refrigerated load areas	X			X			
Trailer Change Over				X			

3.10 Rail Freight

“Rail freight can improve safety and reduce congestion, with each freight train removing up to 76 heavy goods vehicles from the roads”

As highlighted by SPT's annual report 2015/16, the most significant challenges to growth in rail freight includes developing the necessary infrastructure to cope with modern rail freight demands, ensuring efficient management of facilities available and providing services that suit the current and future needs of customers.

Within the Strathclyde region there are a number of existing rail terminals of which the majority of the volume (following the collapse in coal volumes) is at Intermodal Terminals located in the North Lanarkshire Council area (FLT Freightliner (Coatbridge), DB Cargo EuroCentral, PD Stirling (Mossend) and additionally there are non-active sites at Deanside/Hillingdon (Russells') and Elderslie (WH Malcolm's).

Overall at present and in the near term there is understood to be sufficient rail freight terminal capacity for intermodal, automotive and conventional cargo wagon traffic within the SPT area. The current on-going track works by Network Rail at Freightliner's Coatbridge facility will increase the length of trains (and hence the number of containers) that can be handled at the site.

During the development of the freight strategy, evidence at the workshop suggested that a bottom up approach to developing new terminals should be undertaken which involves looking at where potential rail freight users were located should be used and in particular the importance of manufacturing to the Ayrshire economy and lack of current live rail terminals suggests that this is an area which is underserved. The example of Chivas which has moved its bottling plant from Paisley to Dumbarton was quoted as an example where the concentration of volume might now make a rail connected freight terminal / supply operation a viable option, and that more work needs to be undertaken to ensure rail freight is

considered at the start of such consolidation efforts.

The decline of the coal market across the UK including Scotland has resulted in an increase in the availability of freight paths and the opportunity to redouble the efforts in markets which have been traditionally lost to rail such as Chilled / Frozen Goods and Supermarket - Food & Beverage sectors.

Over the longer term there will be continued and increasing pressure on freight paths on the West Coast Main Line. A recent Network Rail Benefit Study undertaken as part of the Freight Network Study suggested that an increased use of electric traction and the provision of dynamic loops, particularly over the section North of Preston to Mossend would secure significant benefits in a timetable context over this section – resulting in practical benefits of overall reduced journey time, higher train payload capacity and an increased number of 'efficient' train paths for freight.

A further emerging issue was how smaller consignors of goods can be accommodated on the railway for less time sensitive goods. These could be consolidated onto the railway for the trunk haul in the same way as the Road Pallet Networks operate today. Trials have been conducted regarding “less than container-load” consignments on the rail network, although no successful long-term solution has yet been found.

However it is understood that a consolidation of goods operation by Russells' is already undertaken to maximise the efficiency of the trunk haul as part of their wider 3PL service offer and this enables smaller customers to participate in better rates than would otherwise be the case. Options for promoting and expanding such services by multiple operators could be assessed.

Increasingly in the future transport will be defined by connectivity need and be mode independent as people and freight shippers will be less interested in how their journeys are provided and more concerned with punctual delivery. As part of the use of 'big data' - matching the supply to the consignment recipient time, cost and other needs will become important to optimise this process. However, there are issues with obtaining the data necessary to ensure that all information is gathered before efficient choices are made, and these are currently being considered by potential providers.

The use of consolidation enabled by technology will be part of the process to better match demand and supply together. This will be especially helpful in capturing the demand from smaller suppliers and matching this to the trunk haul element provided by rail with the same ease that is undertaken within the extensive road-based parcel and pallet networks that exist today. This will help the mode shift from road to rail for the trunk haul element of the journey, where rail is most competitive and effective.

This is an area SPT could look to help with partners to enable some of the research involved in extending the reach of rail freight to less than train load / less than container load market. In the workshop, for example, reference was made to a number of locations where viable train and part train loads could be generated. Linked to initiatives to reduce the cost and streamline the process of bringing connections back into use or to preserve the potential for new ones would be advantageous.

Emerging from the workshop, one of the key issues is the possession by SPT of a strong roadmap to demonstrate its intent to support rail movements to cater for some of the key freight resources and demand in Scotland. Additionally this will assist SPT to act as an intelligent client in the policy and operational decisions that it makes across its activities and in partnership with its constituent councils.

The Malcolm Group ran a daily inter-modal service from November 2004 until fairly recently between Grangemouth and Elderslie near Paisley. This train was significant in that it is a journey of just 41 miles each way, a distance not usually economic for rail.

Due to the unreliability of journey times on the road systems around Glasgow and particularly the M8, the reliability of rail made the service a success. This service was efficient because it made use of rolling stock that has already made an Anglo-Scottish journey earlier in the day and would otherwise have been standing in a siding. Recent supply chain changes have resulted in this flow finishing but it shows that rail can be competitive over shorter distances.



3.11 Modal Shift

Modal shift from road to more sustainable modes is vital in meeting the Scottish Governments target to reduce CO₂ emissions by 80% by 2050 target (42% by 2020), and one of the best ways of doing this is by modal shift.

“

89% of respondents indicated the need to encourage modal shift e.g. aggregates, timbers, whisky, express parcels by passenger trains and less than container load services

Online Survey

”

To facilitate modal shift the development of existing and new freight facilities is vital. Modal

shift to achieve environmental benefit is difficult due to the inherent structure of the industry; however Strathclyde should continue building on current achievements and further increase the use of sustainable modes.

Modal shift from road to more environmentally friendly modes is one of the key objectives of Scotland's National Transport Strategy and its associated Freight Action Plan for Scotland: '*Preparing for Tomorrow, Delivering Today*'.

Action 15 in the Freight Action Plan points out the Scottish Executive's willingness to continue to develop incentives, such as Freight Facilities Grants and Waterborne Freight Grants, to promote innovative solutions to moving freight by rail and sea²⁹.

Ports and rail interchanges in Strathclyde can potentially offer an environmentally friendly and sustainable alternative to road freight transport for certain types of traffic (including timber), reducing freight transport's undesirable impacts on the environment.

Timberlink

Timberlink was established as an environmentally friendly freight transport initiative. The Timberlink service is a prime example of modal shift of freight from road transport to a more sustainable mode, in this case, short-sea coastal shipping.

The Timberlink Service generates over 100,000 tonnes of timber a year. The boat makes eight or nine trips across the Clyde each month from Ardrishaig, Campeltown, Portavadie and Sandbank to Troon in Ayrshire. The timber is then delivered to local wood processing plants such as Egger at Auchinleck, Caledonian Paper and Mairs Sawmill (both in Irvine), and Wilson's Sawmill in Troon.

The majority of the timber is transported using a 65 metre-long, 1,400 tonne ship. The vessel transports timber from Argyll to Troon, with a cargo capacity of up to 1,200 tonnes (equivalent to between 40 and 50 lorry loads) **removing 8,000 lorry journeys or nearly one million lorry miles a year**) sailing on the route two to three times weekly.

²⁹ <http://www.gov.scot/resource/doc/154893/0041640.pdf>

3.12 Alternative Fuelled vehicles

“

83% of respondents support the use of Low Emission Vehicles (LEVs) to carry out last mile deliveries. Consideration should be given to featuring best practice case studies demonstrating the benefits of LEVs.

Online Survey

”

Emission standards for vehicles have improved significantly over the past 10 years. Due to technological advancements, commercial vehicle operators have realised the benefits of using alternative fuelled vehicles for certain urban distribution uses.

The use of electric vehicles for urban freight is being widely used across the UK and Europe.

Electric and alternatively fuelled vehicles have an important role to play in the future, although it has been recognised that they are not always practical due to a range of issues that exist particular for EVs, such as the high purchase price, vehicle capacity restrictions, the cost of vehicle recharging infrastructure and the impact of recharging times for EVs cannot be assumed to be fixed but will depend on the battery charging characteristics of the vehicle.

Feedback from the stakeholder workshop highlighted that depots are often located some distance from the main delivery point. Out of town distribution centres do not seem to work particularly for the use of electric vans for delivery as there is an increased 'stem' mileage, meaning vehicles would have to travel 10+ miles before reaching the first customer.

Discussions in the workshop with a 'cycle logistics company representative' highlighted that "Glasgow is 14 miles away from Bellshill. Standard electric vans cannot go out to the peripheral freight hubs like Bellshill. 2/3rd of

the range is used for the stem mileage before starting the round. All the vans driving around have got 20 miles on them before they start their delivery rounds. If there was a central place that you could get things delivered to and then all the different companies could run their electric vans out from there then it would cut a lot of unproductive mileage”.

Due to the location of the depots, there is an increased local delivery distance which drives the number of resources (*drivers and vehicles*) required to maintain any particular delivery service level to customers. As logistics chains are evolving it is essential for local authorities to consider land allocation, charging infrastructure, and parking spaces as an overall smart city approach.

The closer the distribution centres are to major urban areas, the more practical it is to use alternative fuelled vehicles for onward distribution. Re-charging facilities are unlikely to be required for freight as vehicles can recharge at the depots or distribution centres.

It was felt that the use of electric vehicles, whilst desirable, would be an expensive investment. With the investment mainly going towards the battery. Higher end (expensive) batteries can cover more mileage of up to 250 miles.

The total number of Euro VI, hybrid and electric vehicles operating in the Strathclyde region has almost doubled since 2014/15. Our “snapshot” Glasgow City Centre survey showed that 60% of urban freight vehicles were Euro VI. The local authorities in Strathclyde need to continue working with the private sector to promote the use of electric vehicles and for the public sector to lead by example in the deployment of EV’s for its own operations.

More generally, the issue of locating distribution centres around towns and cities drives freight vehicle patterns to the main demand points and hence the associated contribution to congestion, noise and vibration. It is important to recognise the changing patterns of deliveries to customers including offices, leisure centres, supermarkets stores and so on.

3.13 Noise and Vibration

Freight movements often create noise and disturbance particularly to residents living in close proximity to the main freight routes, or freight generating facilities. One of the main

issues experienced along the road network in rural South Ayrshire relates to the movement of HGVs connected to the region’s forestry, coal and construction operations.

The Scottish Government is developing a ranking process for the Noise Management Areas recently identified across the major road network and city agglomerations in Scotland.

For example the A77 passes through Maybole and Girvan town centres (*the main arterial route from South Ayrshire and the port of Carinryan to Glasgow and the Central Belt*) and is routed close to the urban areas of Ayr, Prestwick and Symington thus creating further noise and vibration for residents. It is important to recognise that with infrastructure development – the resulting noise and vibration profile is recognised as a planning issue to be highlighted and managed (e.g. no residential development within x metres) against what often becomes the new recognised boundary for further development.

Noise from freight vehicles has a significant impact on the tranquillity of rural areas within Strathclyde. It is difficult to eliminate noise problems from freight. Noise from freight is mainly associated with vehicle manoeuvring and engine starting up/idling. This is followed by the movement of goods/roll cages between vehicles and destinations. In some cases, the regulation of traffic to move at lower speeds may help to lower noise levels. In addition, investment in quiet vehicle technology for out of hours deliveries will also aid in reducing noise levels. A study by Transport for London, which trialled a number of quiet technologies available on the market for delivery vehicles concluded that:

- Electric and Compressed Natural Gas (CNG) vehicles for urban deliveries may be a good alternative for quieter operations.
- The fitment of quiet technologies to most delivery vehicles during manufacturing is possible.
- Providing and communicating accurate information regarding the regulations as well as noise policies to manufacturers and operators is key in encouraging quieter deliveries.

3.14 Road Safety and vehicle crime



75% of respondents indicated the need to monitor road safety incidents involving freight vehicles

Online Survey

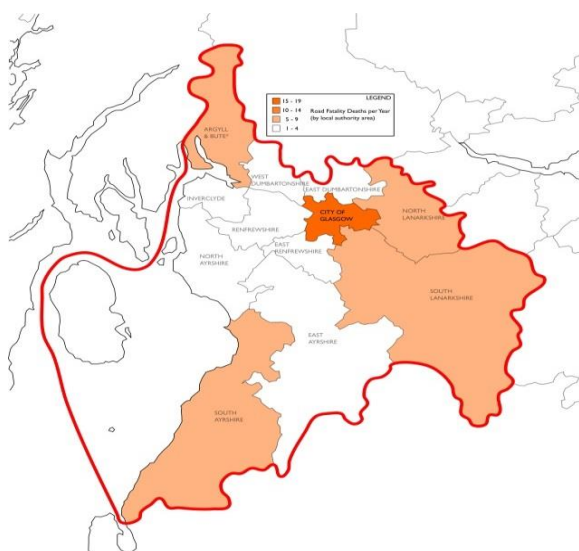


Figure 3.2: Road accident fatalities in 2015 by local authority³⁰

There were 11,268³¹ road accidents in Scotland in 2014. Of these accidents, 3,654 were in Strathclyde³². This estimates to 10 notifiable collisions a day in SPT, and on average one of these accidents will involve a freight vehicle.

As shown in the Figure 3.2 and 3.3, the majority of accidents occurred in the Glasgow area. North and South Lanarkshire, South Ayrshire, and Argyll & Bute also had some contribution to the overall accident statistics.

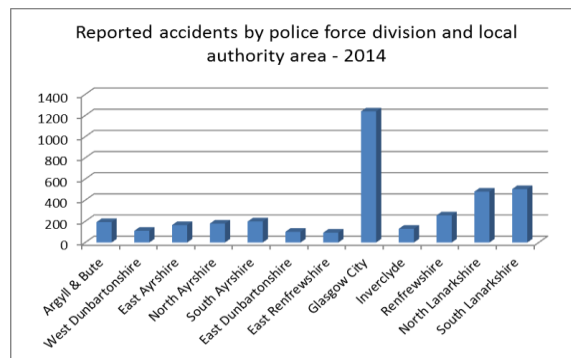


Figure 3.3: ³³ Reported accidents by police force division and local authority area (Strathclyde 2014)

HGVs were included in 3% (417) of accidents and LGVs were included in 6% (871)³⁴. DfT estimates suggest a rising trend in traffic volumes on major roads in Scotland, with a fifth of motorway traffic being within the City of Glasgow³⁵. South Ayrshire (387), North Ayrshire (301), East Ayrshire (241) and Renfrewshire (212) were reported to have the highest volumes of rural trunk road traffic. Generally Scotland has been experiencing an increase in road traffic and a fall in accidents³⁶.

In addition to road safety, vehicle crime is one issue which many drivers experience. There were 1,600 trucks stolen in 2009 according to Truckpol and half were never recovered³⁷.

Furthermore, Truckpol estimated that 27% of all thefts occurred in non-secured parking areas³⁸. As discussed in (3.8), Strathclyde has a lack of overnight facilities and some drivers reported that they park in laybys and industrial estates and therefore are at the risk of load/diesel theft.



70% of respondents stated that there is a need to conduct research on vehicle crime and security

³⁰ <http://www.transport.gov.scot/report/j452722-03.htm>

³¹ <http://www.transport.gov.scot/report/j415388-09.htm#tb1>

³² http://www.spt.co.uk/corporate/documents/Annual%20Report_2015-16.pdf

³³ <http://www.transport.gov.scot/report/j415388-09.htm#tb1>

³⁴ <http://www.transport.gov.scot/report/j415388-09.htm#tb1>

³⁵ <http://www.transport.gov.scot/report/j415388-08.htm>

³⁶ <http://www.transport.gov.scot/report/j452722-03.htm>

³⁷ [http://www.isc-consultants.co.uk/ISC/Distribution_Resources_2_files/TPG%20TAGGING%202.2%20Final%20\(web\).pdf](http://www.isc-consultants.co.uk/ISC/Distribution_Resources_2_files/TPG%20TAGGING%202.2%20Final%20(web).pdf)

³⁸ http://ec.europa.eu/transport/sites/transport/files/modes/road/parking/doc/2010_04_background_information_and_considerations_for_secure_truck_parking.pdf

75% of respondents indicated a need to monitor road safety/incident involving freight vehicles

Online Survey



3.15 Skills and Standards

The logistics sector offers a range of occupations including Heavy Goods Vehicles (HGV) and van drivers, transport, purchasing and warehouse-managers and supervisors, operators of handling equipment, warehouse staff, employees in rail, sea and airfreight operations and a range of related office jobs.

Across Scotland, 113,200 people work in the logistics sector across 12,310 companies³⁹. For example in Strathclyde, North Lanarkshire sees the largest level of freight movement in Scotland and this has resulted in the distribution, warehousing and logistics sectors becoming a large employer in the area.

The logistics sector frequently struggles to attract employees with the right skills and this is usually due to poor perceptions of jobs in the sector and associated career progression. For example HGV driver roles are among the five hardest roles to fill in the job market because of the demographics:

- 16% of drivers are due to retire in the next four to five years and only 1 per cent of drivers are under the age of 25.
- 62 % of truck drivers are 45 or older and the average age in the sector is 53, with 13% of drivers being over 60⁴⁰.
- The logistics sector is also heavily dominated by men and only 1% of drivers employed in the industry are women⁴¹.

In Scotland, there is a shortage of HGV drivers, approximately 11,000 HGV drivers. As a result, this means approximately 1,500

drivers have to be recruited each year to address the driver shortage. The implication of this is that around 500 new lorry drivers are needed every year in Strathclyde. In addition sectors such as forestry, livestock and fuel movement sectors have unique skills sets which contribute to the overall driver shortage challenge.

Whilst many of these issues are likely to be addressed at a national or European level, Strathclyde can also play a role in addressing local issues. The region has a number of universities and colleges in the area and surrounding the boundary of the region. Universities and colleges offer courses from entry level to degree level.

“We have real difficulty recruiting drivers with the qualifications required”⁴²

A RHA initiative in conjunction with the Scottish Government is in preparation to deliver an apprenticeship package to encourage people to get into the industry and be trained in different job skills not just the often quoted area of Lorry drivers specifically.

It is essential for Strathclyde to invest in skills and training to improve the qualification levels and capabilities of the workforce to ensure the long term success of the area and attract investment in to the region.

3.16 Summary

Through primary and secondary research, this chapter has identified a number of freight transport issues that exist across Strathclyde. It is important for SPT to recognise and address these issues in order to allow for freight to operate more efficiently and effectively and therefore support the local and regional economy.

A summary of the issues identified and potential solutions are summarised in Appendix F.

³⁹<http://legacy.skillsdevelopmentscotland.co.uk/media/117065/Skills%20for%20Logistics%20representation.pdf>

⁴⁰<http://www.publications.parliament.uk/pa/cm201617/cmselect/cmtrans/68/68.pdf>

⁴¹<https://www.theyworkforyou.com/sp/?id=2016-01-19.11.0>

⁴² Engagement with a Haulage Operator

4. Freight Strategy Ambitions

Strathclyde will have a thriving and world-leading freight and logistics offer which will support the economy, society and the environment.

4.1 Introduction

Strathclyde will have a thriving and world-leading freight and logistics offer which will support the economy, society and the environment. This will underpin and build on Strathclyde's existing strong spatial position at the centre of freight flows within and to / from Scotland.

As the Freight context has demonstrated the Strathclyde region is a key hub for freight flows. It is critical that Strathclyde has an effective and stretching freight strategy which has been developed through the framework of the six identified key ambitions.

The six key ambitions for the freight strategy are set out as follows:-

- Improve Air Quality and Environment
- Increase the Safety of Freight Movement
- Encourage and Facilitate Intermodal Freight Movement
- Enhance Quality of Life and Well-Being
- Facilitate and Support Economic Competiveness
- Enable Communication

These six key policy aspects of SPT's freight strategy sit within SPT's wider overall objectives and the context within the forthcoming re-refresh of the RTS and the Scottish Government's NTS and working together will create the conditions for the successful development to the standards in the vision. The ambitions were developed through a consultation process with key

stakeholders and through a detailed research programme to assess the needs of the sector

The framework was shared at the Stakeholder Workshop that was held on the 10th November 2016 and the subsequent Freight Quality Partnership meeting on the 1st December 2016.

4.2 Ensure Economic Competiveness

Whilst it is important that freight's contribution to wider policy areas, such as climate change, air quality, quality of life and safety is enhanced, it is important that the freight industry continues to offer a competitive and efficient service that minimises costs. This will in turn enable economic growth, which underlines many of the other ambitions, either by contributing to them (quality of life, for example) or being fed by them in turn (improved safety and the environment).

Therefore in all decisions to be taken with regard to the future of freight across Strathclyde, the economic impact of decisions should be considered.

This ambition also supports the need to keep under review, develop and invest in the strategic transport network across modes to ensure that it is suitable for the current and future economic context. In particular last mile deliveries and/or collections and access to mode interchanges and wider access to strategic networks are particularly important.

4.3 Improve Air Quality and Environment

Transport is a significant contributor in terms of carbon emissions and poor air quality standards, especially in urban or built up areas. 2,000 people a year in Scotland die prematurely as a result of poor air quality and emissions related to freight transport amount to approximately 30% of all emissions from road transport. At European, UK and Scottish levels of Government, there are strong policy goals to reduce emissions and improve air

quality, and SPT is keen to ensure that these targets are met.

It should be noted that this ambition covers both the carbon emissions of vehicles and other emissions, such as NO_x and particulate matter. Euro VI standards significantly improve over previous standards in terms of reducing NO_x, for example, whereas previously the focus had been mainly on carbon emissions. Any solutions proposed under this ambition will need to consider minimising both types of emissions to ensure success.

Having the improvement of Air Quality and the Environment as a stated ambition of SPT supports other ambitions, including enhancing the quality of life and well-being of its residents and the encouragement and facilitation of intermodal freight movement.

4.4 Increase the Safety of Freight Movement

Whilst data on road accidents across Scotland demonstrates that roads are getting safer, it is important to continue to improve this trend. Furthermore, as Scotland and the Strathclyde region seeks to improve the health and quality of life of its citizens by increasing cycling and walking and improving facilities for these across the area, these vulnerable road users will come into contact with more freight vehicles as the economy grows.

In order to ensure their safety, a continued and ambitious focus to continue driving down serious injuries and fatalities is an important part of SPT's vision for a successful and vibrant region. However, the responsibility for delivering road safety lies with local authorities and Transport Scotland, and as such SPT can not necessarily directly affect this as much as may be desirable. Therefore SPT must look to support Transport Scotland and the local authorities wherever possible with regard to improving road safety.

Increasing the safety of freight movement will therefore not only improve the quality of life and well-being of local residents but will also facilitate and support economic competitiveness through avoiding the large costs and delays associated with incidents.

4.5 Encourage Intermodal Freight Movement

Road remains by far the dominant mode of freight transport across Strathclyde. However, utilising both historic and innovative solutions, it should be possible to reduce this dependence somewhat, along with attendant benefits through related reductions in accidents, noise, congestion and emissions. Whilst there is scope to move a proportion of large trunking movements to water and rail modes, the potential benefits of adjusting the mode of last mile delivery to alternatives such as bicycle and LEVs should also be considered – enabling less polluted streets, quieter environments and fewer emissions.

This ambition therefore supports the aspirations of improving air quality and the environment and enhancing quality of life for residents, but also will improve the safety of freight movements by taking HGVs off the roads and instead moving deliveries to other modes.

4.6 Enhance Quality of Life and Well-Being

Freight movements can have a significant impact on the quality of life of residents. From those living near key freight movement arteries, to interruptions caused by late night deliveries, how logistics operates can play a significant role in improving people's quality of life. Similarly, freight vehicles can impact heavily on the outside environment, making it a less pleasant experience to walk and cycle (especially in built up areas), potentially limiting people from making trips that otherwise they would.

Therefore, SPT's vision for freight includes a stated ambition that these downsides be minimised, so that the benefits from an effective freight distribution network can be enjoyed by residents with minimal cost to their quality of life. This complements the stated ambition to improve air quality and lower emissions, as well as improving the safety of freight by supporting the movement of freight by modes which are less intrusive on day to day movements (such as bicycles, trains or water).

It is important to also acknowledge and consider potential impacts of such a scheme. For example, electric or low emission vehicles on their own do not, of themselves, reduce congestion, although they will improve air quality. Therefore alternatively fuelled vehicles should be viewed as an ambition that complements other measures and runs in parallel with these.

4.7 Enable Communication

The nature of the freight and logistics industry is that it is made up of stakeholders from across a range of sectors including the public and private sectors. Unlike some other parts of the transport industry, where the number of stakeholders is relatively limited, there are thousands of haulage and other logistics firms which will be affected by decisions made in striving towards the SPT vision as shown by the other ambitions. Therefore it is important that all stakeholders have a clear route for submitting input, receiving information and gaining an understanding of what the local authorities and SPT together are trying to achieve. The strategy needs to secure industry support and be a collaborative effort (as demonstrated by the Freight Quality Partnership) with sustained and collective backing from across the industry and public and private sectors if it is to be a success. The list of stakeholders includes those whose goods are being moved; it is important that needs and views of those who require the services of the haulage industry are understood and addressed.

The six key ambitions emerged through the process of evidence gathering through the desktop research, consultation, stakeholder workshop and online survey as previously

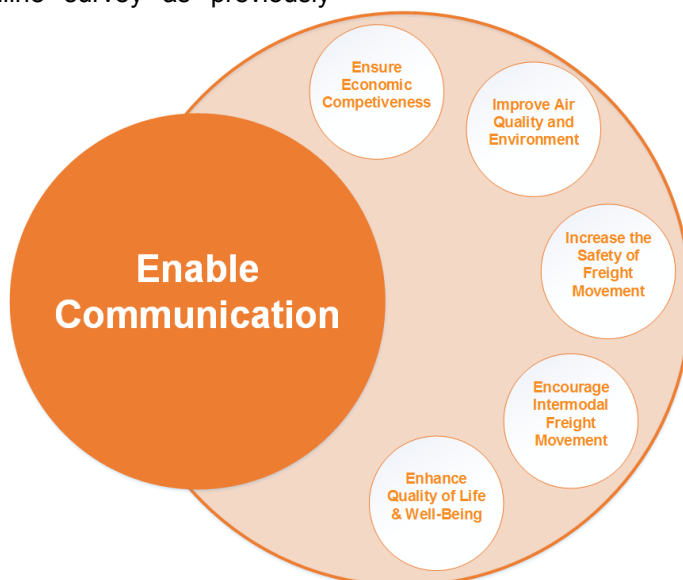
illustrated in Chapter 1 (Figure 1.1). Through this framework the emerging issues could to be grouped and considered in a systematic fashion to develop the identified programmes, stakeholders and deliverables. The framework was shared at the Stakeholder workshop that was held on the 10th November and the subsequent Freight Quality Partnership meeting on the 1st December, where they were met with broad support from across the private and public sectors.

4.8 Summary

It is important to note that in developing this chapter, it was recognised that SPT and industry doesn't operate in isolation and it is important that this is recognised. This will avoid overlap and duplication of resources including the existing groups and work of the other Scottish Regional Transport Partnerships, SCOTFLAG (including its associated sub groups) and the Scottish Freight Joint Board.

The strategy needs to secure industry support and be a collaborative effort (as demonstrated by the Freight Quality Partnership) with sustained and collective backing from across the industry to be a success.

The six key policy aspects of SPT's freight strategy sit within SPT's wider remit of its overall objectives and the context within the forthcoming re-refresh of the RTS and the Scottish Government's NTS. Together they provide an ambitious vision for freight movement across the region. As shown below communication enables all aspects of the six key policies to take place, and it is an important aspect of the strategy.



5. Solutions

Each of the issues outlined in the previous chapter has been assessed and a package of solutions developed to mitigate or reduce these issues in line with the ambitions laid out earlier.

5.1 Introduction

This section sets out the solutions to the previously identified issues. Furthermore, many of these solutions help to lay the groundwork for enabling the freight and logistics sector to meet the ambitions of SPT. As such, the solutions are grouped underneath the most appropriate ambition heading, although it should be noted that many of these solutions cut across the ambition themes. Table 5.1 brings together the solutions and demonstrates how they tackle the issues laid out in the previous chapter.

5.2 Improve Air Quality and Environment

Air Quality has emerged as one of the leading causes of death in Scotland (with 2,000 deaths each year), whilst the Paris concord signed in 2016 re-affirms efforts to reduce emissions and prevent more than two degrees of global warming. Therefore these two elements, often complementary, are tackled through use of the following interventions.

5.2.1 Fleet Renewal

Euro VI standards dramatically reduce the emissions of dangerous pollutants such as NO_x (capped at 0.4g per kwh compared to 3.5g per kwh at Euro IV). As these vehicles spread through the freight fleet, there will be significant benefits to local air quality across the Strathclyde region. Accelerating this process will enable the benefits to be realised sooner, and as such there is a need to ensure

that small and medium sized hauliers are given suitable assistance with the expensive task of replacing their fleet ahead of schedule. This should also be extended to local authority fleets such as waste collection and management vehicles; local authorities.

Therefore there is a need to develop a business case and identify possible funding for such a scheme, although any such scheme would need to be carefully engineered so that it complied with state aid obligations.

Primary Issue: Air Quality

Secondary Issues: Residual value of vehicle

Although the development of the business case and identification of the funding stream can be achieved in a short time frame by local authority air quality managers, the roll out of the scheme will occur across the medium term.

5.2.2 Low Emission and Alternatively Fuelled Freight Vehicles

The next stage in terms of lowering emissions beyond Euro VI is of course the adoption of low emission vehicles, including those fuelled by alternative means such as gas and electricity. Therefore there is a need to review existing and planned provision for such fuels and make sure that the roll out of electric charging points or gas refuelling stations will cover freight movements. Where gaps are identified these should be filled in a prioritised manner so as to best serve the needs of the freight and logistics sector. In addition to the infrastructure, the generation of case studies regarding the use of alternatively fuelled or low emission freight vehicles in situations analogous to those faced across the Strathclyde region will demonstrate the benefits of the shift to businesses and encourage the uptake of these vehicles.

Electric vehicles (amongst others) also are quieter than diesel fuelled fleets, and so there are some secondary benefits in terms of noise reduction and the improvements in liveability this will offer.

Primary Issue: Air Quality

Secondary Issues: Noise and Vibration

This intervention will need to be led by industry choosing to invest in the correct technology, guided by local authority investments in infrastructure over the medium to long term, alongside the advice of non-governmental bodies such as the Low Carbon Vehicle Partnership

5.2.3 Low Emission Zones

It is recommended that SPT consider the development work being done in other UK cities on freight environmental matters. The risk is that if SPT and its partner authorities are not proactive in taking action then UK freight operators may cascade older more polluting vehicles to the Glasgow area instead of operating them say in London. For example the LoCITY programme in London is one of a number of initiatives aimed at helping the freight and fleet industry reduce its impact on air quality by increasing the use of Ultra Low Emission Vehicles (ULEVs).

Freight operators working in London may face tougher emissions regulations as early as 2018/19 if air quality proposals from the London Assembly Environment Committee are acted upon. London has been urged to roll-out its Ultra Low Emission Zone (ULEZ) as early as 2018, as well as mandating a minimum Euro-5 standard in the proposed T-Charge aimed at the most-polluting vehicles.

However, such worries about potential cascading of vehicles should also apply to the SPT region itself – if coordinated action isn't taken and individual authorities act unilaterally, then vehicles banned from operating in (say) Glasgow City areas may be cascaded to (for example) Inverclyde; moving rather than eliminating the problem. At present, Hope Street in Glasgow is the most polluted street in Scotland.

An area highlighted as a barrier to uptake of these vehicles is a lack of information about the capabilities, benefits and requirements of ULEVs. Without this information operators can find it hard to justify the purchase of low emission vehicles. A lack of impartial information on alternative fuels and infrastructure has been identified as a further problem. The LoCITY study will create new environmental operating standards and contractual clauses which will help anyone buying goods or services to specify the use of low emission vehicles and as such, SPT

should follow developments in this field closely.

In June £19m funding was allocated by DfT to help the **freight** industry cut **vehicle** emissions and they unveiled an accreditation scheme. The scheme will be funded by the Office for Low Emission Vehicles (OLEV) through Innovate UK, the UK's innovation agency. It is important to monitor trends and put actions in place to mirror good practice and reduce emissions in the Strathclyde region, including assessing whether such an accreditation scheme is right for implementation (see 5.3.4.).

Primary Issue: Air Quality

Secondary Issue: Alternative Fuels

Although not immediate, developments in this area are moving quickly, and as such it is important that SPT maintain a vigilant outlook towards assessing them as and when they appear to be suitable; especially given the strength of ambition in this area by the European and Scottish governments to reduce emissions and improve health.

5.3 Increase the Safety of Freight Movement

Improving the safety and security of movements will feed into benefits across all of the other elements, by reducing costs, improving quality of life and reducing congestion caused by accidents.

5.3.1 Public Sector Procurement

Public sector expenditure is equivalent to between a quarter and a third of GDP across Scotland; although this number does differ regionally. This significant spend can be utilised to drive up standards in freight and logistics, through the mandating of minimum standards in all public procurement contracts (usually expressed through membership of an approved fleet accreditation scheme (see 5.5.4.).

Local authorities and SPT itself can provide a foundation for business to justify a business case for hauliers to adopt the scheme, and this will therefore drive up standards across the industry. This effect will be magnified if other public sector bodies such as the NHS and universities amongst others are also encouraged to adopt enhanced standards. The process required is not onerous and has been well-charted by bodies such as TfL (in

the case of the Fleet Operator Recognition Scheme). The specification of such schemes is not thought to have any negative impact such as raising costs, and indeed the improved efficiencies usually delivered by such schemes to operators may provide a powerful driver in the opposite direction

Primary Issue: Road Safety

Secondary Issues: Air Quality, Traffic Congestion, Growth, Skills and Standards

Given that the process for the implementation of mandating fleet accreditation schemes in procurement contracts is well-established, there is no reason that as contracts come up for renewal such schemes could not be mandated as and when, enabling quick roll out of improved standards across the Strathclyde region, provided that public sector bodies (including SPT) could be encouraged to do so.

5.3.2 Road Safety

Given ambitions across the SPT region to improve road safety and encourage walking and cycling, it is important that freight supports this goal. In some cities, such as London, which have seen significant increases in cycling, there has been a perception that HGVs are disproportionately responsible for a number of accidents involving vulnerable road users. This has seen the development of schemes such as the Community and Logistics Operator Cycle Safety Scheme and the Fleet Operator Recognition Scheme to try to improve safety on the capital's roads, alongside other interventions such as London's Safer Lorry Scheme. Other cities have also taken steps (Manchester is currently in the process of mandating CLOCS for city centre construction projects) and the wider Strathclyde region needs to determine if similar steps are required region-wide, in key areas, or not at all.

However, in order to assess the suitability of such schemes, a clear awareness of the extent and nature of the issue across the region is required, including how it differs across local authority boundaries. Therefore SPT, Local Authorities and Police Scotland should work together to agree a methodology for monitoring and reporting the Killed/Seriously Injured rate of incidents including freight vehicles, and gathering additional information to that traditionally gathered by the STATS19 form. Furthermore, there is potential that this information could be made available to road freight operators or academic institutions and other interested

parties to help encourage innovation towards improved safety across the region.

Primary Issue: Road Safety and Vehicle Crime

Secondary Issues: Urban Deliveries; Skills and Standards

This should be implemented as soon as possible so that data can start to be collated and analysed.

5.3.3 Vehicle Crime and Security

During the consultation and data collection aspects of this work, a perception emerged that there was a significant level of freight-related crime. There is therefore a need to establish if this is the case, and if so what sort of crimes are taking place and in which areas. SPT should work with Police Scotland and operators to establish these data points, and develop potential ways to minimise freight-related crime. This should include those being perpetrated against the freight industry (such as diesel and load theft) and those being carried out by unscrupulous operators (such as tachograph forgery) which undercuts legal operators (see 5.5.4.).

Primary Issue: Road Safety & Vehicle Crime

Secondary Issue: Skills & Standards

This can be undertaken in the short term, with findings and proposed mitigation fed back to the Freight Quality Partnership for further review.

5.3.4 Lorry Parking Review

Currently lorry parking in the SPT region is focussed on the M74 corridor, and may not cater for current flows given recent developments across the region. Residents in Gourrock, for example, have been inconvenienced by lorries parking inappropriately when waiting to deliver to the Amazon distribution centre, and there may be scope for these to be better accommodated. This could be one of potentially many similar lorry parking issues.

Working with local authorities and industry (including building on work on agreeing strategic routes for commodities – see 5.6.1.) it should be possible to undertake a high level study on the current provision of lorry parking (particularly secured lorry parking) and whether or not this is currently fit for purpose across the region.

Primary Issue: Overnight Lorry parking

Secondary Issues: Growth, Connectivity

Such a review can be undertaken in the short term, with any findings regarding under-provision of suitable parking being potentially remedied in the medium to long term as suitable.

5.4 Encourage Intermodal Freight Movement

Enabling the use of multiple modes for freight transport supports all of the other ambitions, as it will reduce congestion, poor air quality and noise as a result of freight traffic, especially on the strategic road network and for those living on some of the key inter-urban roads across the SPT region, whilst also reducing emissions more generally. Cycle logistics is active in many places including Glasgow City Centre, although it is important to note that road freight will continue to be a significant mover of goods, as due to either volumes, timescales or geography, it will remain the most appropriate mode.

5.4.1 Air Freight

Air Freight plays an important role in the movement of high value and/or time sensitive goods. However, the final leg of these journeys is via land-based modes to the final destination, and as such it is important to ensure that these connections remain as efficient and as reliable as possible. Glasgow Airport is well located for onward transport, with nearby road and rail links, although there may be scope for utilising the newly-approved tram-train to get freight from the airport to the city centre which should be considered. Prestwick's location and onward connectivity should be inspected and assessed, with a targeted list of prioritised interventions to ensure that it develops and grows its capacity to handle modern air freight.

These tasks should be combined into a report fully assessing the nature of air freight moving through the Strathclyde region and given the potential changes in air freight over the coming years (see the following chapter) making sure that facilities remain fit for purpose and opportunities such as the tram-train are explored.

Primary Issue: Connectivity

Secondary Issues: Modal Shift, Growth

This report can be generated within a relatively short timeframe with close collaboration from airport operators, SPT and local authorities,

along with input from Transport Scotland regarding trunk road links.

5.4.2 Water Freight

The Clyde offers opportunities for sustainable freight movement. In addition to delivering large consignments for onward shipment (such as coal from Hunterston or containers from Greenock) other locations (such as George V dock) offer city centre access for a range of commodities, enabling a minimisation of road haulage and associated congestion and air quality issues.

It is important that these opportunities are recognised and enhanced where possible and practical to encourage further use of these facilities. As such, not only should the existing benefits of their utilisation be recorded to help provide the case for further investment, but also the opportunities for better use of these facilities explored, particularly with regard to growing sectors (such as construction traffic) to help ensure that this growth can be suitably transported in a manner as sustainable as possible.

Primary Issue: Modal Shift

Secondary Issues: Air Quality, Traffic Congestion, Growth, Connectivity

Working closely with port operators such as ABP and Peel Ports and other associated stakeholders, SPT should be able to generate a baseline and opportunities report (including potential prioritised interventions) which could be developed in the short term to ensure that the ports are best equipped for future traffic and modal shift.

5.4.3 Rail Freight

Given the Strathclyde's position at the centre of Scotland's distribution network, there is significant scope for increasing the amount of freight moved to the rest of the country (and the wider UK) by rail; with the attendant improvements in air quality and traffic congestion that could come from a wider shift towards this more sustainable mode.

The Department for Transport recently assessed the plausibility of modal shift towards rail away from road and, alongside Transport Scotland's Rail Freight Strategy; there is a strong base of knowledge upon which SPT can encourage freight onto rail. Some sectors, such as construction and intermodal are seen by both documents as having significant potential. Both of these sectors will play a large role in the movement

of goods across the SPT region in the coming years, given the continuing economic growth of the area and its attendant increases in manufacturing inputs/outputs, retail goods and construction materials.

In combination with 5.4.2 Water Freight, the future movement of these goods should be encouraged on to rail, and this needs to be achieved both through active means (such as the delivery of workshops to enable, encourage and inform small and medium sized enterprises to consider using rail, through to the utilisation of groupage and 3PLs where necessary) and more passive approaches such as ensuring that existing rail corridors that are not currently used (or are under-used) have their ability for re-connection or enhancement maintained. This latter choice will vary from ensuring timetable provision for freight services on Strathclyde's busy mixed use railway to more long-term, larger projects such as ensuring that rail corridors no longer in use (such as that connecting to Greenock Port) are retained for potential future utilisation. This will require SPT to 'fly the flag' for rail freight potential across the wider planning framework of the area, and will need close partnership working with local authorities and Network Rail

Primary Issue: Modal Shift

Secondary Issues: Air Quality, Traffic Congestion, Rail Freight, Connectivity

SPT should oversee the creation of rail freight workshops to encourage the uptake of rail freight, developing these in tandem with Freight Operating Companies and 3PL providers such as Russell's and Malcolm's which provide rail-based groupage services. These could perhaps be best developed as a specialist sub-group of the Freight Quality Partnership (alongside other alternative mode interventions) and could be undertaken in the short-term. In the longer term, the protection of existing or potential rail freight land (see also 5.6.4. Land Use Planning) will need to be embedded through the local planning framework. SPT should also seek to boost its connection to national trends (given the long-distance nature of rail freight movements) through seeking representation on the Scottish Government's Joint Freight Board.

5.5 Enhance Quality of Life & Well-Being

Liveability is a characteristic which has recently emerged as an important element in improving health, sense of community and economic competitiveness by attracting new

people to an area and their skills. As such, these interventions will reduce traffic and noise, whilst improving the standards of staff and providing ancillary benefits more generally such as better cycle facilities and better air quality through reduced emissions.

5.5.1 Freight Noise Strategy

Noise from deliveries is often an issue in areas of mixed-use development, when deliveries to commercial or retail premises may disturb residents – especially if these take place at sensitive times of day. Furthermore, heavily trafficked routes can result in disturbance for residents especially with heavy loads such as coal and timber. Noise from certain bulk flows can be mitigated through sensitive routing and movements of deliveries (see 5.6.1. and 5.5.2.) whilst noise generated from deliveries can be mitigated through encouraging take up of best practice for quiet deliveries. The main causes of noise are engines starting/idling (which may be reduced as engine technologies change) and the movement of goods from the vehicle to the receiving location – which can be mitigated in a number of ways (such as incorporating noise-absorbing materials into loading bay design, quiet, tail-lifts etc.).

A strategy detailing the best methods and how their take-up can be encouraged, as well as prioritising the areas for their implementation should be developed, building on the work undertaken by other cities and regions in this area (cf. the current TfL Quiet Technologies Research Trial).

Primary Issue: Noise and Vibration

Secondary Issue: Urban Deliveries

The strategy can be developed in the short-term, and this should be done between SPT, Local Authorities and Freight Operators; the Freight Quality Partnership may provide a natural body to be in charge of this intervention.

5.5.2 Delivery and Servicing Plans

As explored in 5.6.3., Delivery and Servicing Plans (DSPs) provide an approach which can be implemented by both private businesses and local authorities to reduce and control the impact of delivery and servicing activity. More importantly, they are scalable and can range from adjusting procurement policies to multiple-building consolidation. Starting at the light end with a tweaking of procurement stipulations can often enable further steps,

with each DSP being tailored to the local area and individual business/occupier needs.

SPT, in close cooperation with the local authorities, should therefore develop a DSP toolkit which will enable this approach to be adopted across the region; the toolkit guiding and enabling the process at all levels, ranging from managing procurement systems, encouraging sustainable delivery alternatives (such as using cycle logistics or alternatively fuelled/low emission vehicles) through to large-scale development consolidation or procurement rationalisation across large sites (such as hospitals or universities).

Primary Issue: Traffic Congestion

Secondary Issues: Air Quality, Growth, Urban Deliveries

Initial pilots of the process, based upon the toolkits and processes in place in other cities (such as London or Manchester) will provide case studies and examples for the SPT toolkit, which should be produced in the medium term.

5.5.3 Accommodating Cycle Logistics

Scotland and SPT have great ambitions to improve the amount of cycling that is undertaken across the SPT region due to its myriad benefits for air quality, liveability and public health in addition to its contribution to reducing traffic congestion.

However, cycle logistics can also provide a solution to deliveries, especially in dense areas such as town centres. The European Cycle Logistics Federation has estimated that 35% of all deliveries could be undertaken by bicycle; this could have sizeable impact on road space utilisation, congestion and emissions. However, much of the infrastructure being designed to enable cycling across the SPT is currently designed around standard bicycles, rather than allowing for freight bicycles. Such measures include the use of bollards to narrow lane widths and barriers which require dismounting. Therefore adjusting the guidance to better reflect the potential mix of cyclist behaviour will enable cycle logistics to operate effectively within the region, as well as having additional benefits for other 'non-standard' bicycle users such as those with disabilities or families using cargo bikes for 'the school run' as is common in the Netherlands.

Primary Issue: Traffic Congestion

Secondary Issues: Air Quality, Urban Deliveries, Noise and Vibration

Adjusting the guidance should be undertaken as soon as possible by the local authorities with guidance and support from SPT to ensure a widespread, suitable standard for the all new cycling infrastructure.

5.5.4 Innovation

It is important, in seeking to better manage the flow of freight across the Strathclyde region, that new solutions are constantly assessed to understand if they offer a new alternative way to enhance capabilities.

Current examples include ongoing development and trials across Europe of intelligent loading bays. These can report whether they are occupied or available and can be booked for a given time slot by firms or operators and then only utilised by that vehicle. This not only minimises misuse of delivery bays by inappropriate vehicles but also improves efficiency by reducing time spent searching for a suitable place to deliver.

Other potential innovations that are currently undergoing trials or are under consideration include the wider distribution of (and access to) delivery lockers to minimise the number of missed deliveries (currently 30%) and the use of bus lanes or other restricted road space for deliveries during peak periods.

Primary Issue: Urban Deliveries

Secondary Issues: Air Quality, Growth, Traffic Congestion

However, whilst it is important to maintain a strong grasp of the latest innovations, it is also important to ensure that they offer value for money and effective solutions, rather than adopting them wholesale without due consideration.

5.5.5 Fleet Accreditation

Fleet Accreditation schemes are an effective way of ensuring that operators that concentrate on providing a better service with regard to the best possible standards aren't undercut by others, instead driving standards up across the region.

Schemes such as the Fleet Operator Recognition Scheme can help to improve safety, improve efficiency and reduce the environmental impact of freight movements. The exact process will differ from scheme to scheme, but an example might be drivers having to attend courses on driving in urban environments (to improve Vulnerable Road

User safety) or transport planners using online benchmarking to improve their standards. These schemes can either be supported and encouraged by local authorities (the North East Combined Authority, for example, subsidises the cost of attending approved training schemes) or mandated as part of the procurement process (see 5.3.1), depending on which approach is thought best suited.

Primary Issue: Road Safety

Secondary Issues: Air Quality, Traffic Congestion, Skills and Standards, Urban Deliveries

SPT, working with local authorities and freight operators should assess and determine which scheme is best suited for the Strathclyde region and seek its implementation. This will presumably be phased over a short to medium timescale, with encouragement and support initially followed by specification in public sector procurement (see 5.3.1.). Local Authorities will be able to demonstrate the benefits through the take up of the appropriate fleet accreditation scheme for their own fleets, which should be undertaken as soon as possible.

5.5.6 Skills and Standards

At present, there is a shortage of skills in the logistics industry, across Scotland there is a shortage of 11,000 HGV drivers. In order to address this shortage, Scotland needs to hire approximately 1,500 HGV drivers each year. Furthermore, this shortage is not limited to drivers but is across the whole of the industry, including warehouse operatives and transport managers.

In order to ensure that the freight and logistics sector continues to have access to the wide range of skills required by the industry in terms of frontline and management skills, it is necessary to review current provision for training across the SPT region for training and upskilling, identify gaps and then work with education and training providers to improve provision.

In addition to traditional providers such as universities, schools and colleges, there is a need to ensure high standards of in-company training, as long-term programmatic training and development needs to happen at an operational level. Furthermore, such training needs to be flexible to ensure it reflects the changes that the industry is undergoing, with extensive automation and the increased use of technology changing the nature of the sector and the requisite skills required at all levels.

Primary Issue: Skills and Standards

Secondary Issues: Road Safety & Vehicle Crime, Urban Deliveries, Growth

This work will require extensive involvement of education and training providers from across the region as well as input from operators and hauliers about the issues being faced. As such it may be best undertaken by the Freight Quality Partnership where, whilst guided by SPT, the report generated will be industry-led and an accurate guide to the issues and solutions required.

5.6 Ensure Economic Competiveness

This ambition means ensuring that the cost of freight is minimised and that movements are as efficient as possible. The interventions here seek to reduce the cost and/or time spent by freight vehicles in transit, especially unproductive time as a result of poor navigation or journey time reliability, as well, as encouraging the efficient movement of freight in the design and planning process.

5.6.1 Review Directional Signage

Signage to key freight nodes and generators was identified as not always being as clear as could be desired. Given the increasing use of satellite navigation devices amongst other smart technologies, a large investment in traditional signage may not be the most appropriate use of funds. Instead, it is recommended that the freight sector is engaged with regard to ensuring that the most appropriate routes are being taken by vehicles, both in terms of the primary network and also diversionary routes during periods of disruption. These routes may differ depending on the nature of the commodity being transported, however providing a clear hierarchy of suitability to drivers and planners will assist in ensuring that freight moves only in the most suitable manner.

As such, this intervention has potential benefits not just for the industry (by ensuring that freight reaches its destination) but also for improving the quality of life of residents by reducing congestion and avoiding the routing of heavy goods vehicles (where possible) through residential areas.

Primary Issue: Directional Signage

Secondary Issues: Air Quality, Traffic Congestion, Noise and Vibration

This intervention can be delivered in the short-term for a low cost, and should be led by SPT, although there will need to be input from the local authorities regarding issues with routing in their respective areas, as well as input from the freight industry itself.

5.6.2 Strategic Connectivity and Congestion

Congestion causes delays, which given the widespread shift towards “just in time” logistics across a range of industries, can have significant knock on impacts, as factories often have only a few hours’ worth of stock on hand – relying on the freight network to deliver regularly instead. Furthermore, vehicles tied up in congestion are not being used efficiently, resulting in additional vehicles being required to shift the required volume due to increased journey times.

TomTom estimated that congestion results in 15 days lost on average per vehicle each year amounting to a total of £25 million per year for LGV’s⁴³.

There are currently a number of schemes underway across the SPT region to reduce congestion and to improve strategic connectivity and these should be supported. This includes for example schemes connected with the Glasgow City Deal and forthcoming Ayrshire Growth Deal (which the A70 / A77, and Kilmarnock to Carlisle via Dumfries line) Furthermore, both SPT and local authorities should assess where interventions to alleviate congestion may have a significant impact on strategic freight routes or outside key freight nodes and generators and prioritise these where appropriate. The key route networks developed as part of 5.1.1 for each commodity will provide a foundation for this work.

Primary Issue: Traffic Congestion

Secondary Issues: Air Quality, Connectivity

This intervention is an ongoing commitment and should be led by SPT and local authorities, with input and guidance from the Freight sector regarding the key issues and areas of congestion. This input could be gathered as an ongoing part of the Freight Quality Partnership’s work.

5.6.3 Consolidation & Groupage

The utilisation of vehicles differs from sector to sector and from location to location. However, in most instances economies of scale mean that if loads can be consolidated or grouped then there is potential for more efficient delivery patterns to be developed. This can have knock on effects not just for the freight operator, but also reduces the time spent dealing with deliveries by businesses and can reduce congestion and improve air quality and (through reducing noise and disruption from delivering vehicles) improve the liveability of areas. Newcastle University, for example, was able to reduce the number of deliveries it received by over 80% through the adoption of a consolidation centre according to its logistics partner.

It should be noted that reducing the number of deliveries and vehicles on the road benefits both urban areas (where space is at a premium) and other areas too, as roads may not be best suited for large numbers of vehicles. Regardless of location, both urban and rural residents can benefit from reduced congestion, improved air quality and better liveability.

There has been some previously commissioned work on the feasibility of a consolidation centre for Strathclyde, although it is important to consider that this is only one kind of consolidation. Construction Logistics Plans, for example, can minimise the number of vehicles required during development of a site, and also ensure that those vehicles are routed sensibly to minimise disruption and congestion. Delivery and Servicing Plans (see 5.5.2.) extend these benefits covering the operational lifespan of the building, ensuring that deliveries are made efficiently and with as little impact as possible on surrounding businesses/residents and the road network.

The Freight Quality Partnership in combination with local authorities and SPT should endeavour to develop a best practice guide on utilising consolidation and groupage to minimise disruption from deliveries. Local authorities will then be able to ensure that new developments can be designed with these principles in mind and where possible they can be utilised by existing developments and businesses.

Furthermore, building on the work previously commissioned the feasibility of utilising council depots and sites as ad-hoc consolidation

⁴³ <http://www.fleetnews.co.uk/news/fleet-industry-news/2016/11/29/congestion-costs-uk-business-estimated-767m-a-year?quid=356370>

centres to demonstrate the principle and the benefits thereof should be assessed.

Primary Issue: Traffic Congestion

Secondary Issues: Air Quality, Urban Deliveries, Growth of Strathclyde, Noise and Vibration

Whilst the best practice guide can be produced in the short-term, the piloting of consolidation through the use of an existing council location could take several years to come to fruition and so a start needs to be made to ensure progress.

5.6.4 Land Use Planning

There is potential to better develop strategic freight locations through ensuring that sustainability and efficiency are 'designed in' from the beginning. For example, often former rail-connected sites are developed piecemeal without provision being made for the potential future restoration of the rail, should rail traffic emerge. This can lock users into inefficient or unsustainable methods of carriage. Furthermore, it is important that existing rail-connected/water-connected sites and corridors are maintained for future freight use (see 5.4.3.).

Local authorities, working with Clydeplan where appropriate, should seek to ensure that developments are designed to robustly enable sustainable delivery methods where possible, with this being taken forward through the forthcoming Planning White Paper at a Scotland-wide level.

Primary Issue: Modal Shift

Secondary Issues: Connectivity, Rail Freight

Whilst this intervention itself has no significant cost, it is important that its implementation and effectiveness is monitored to ensure that sustainable options (such as water and rail freight) are selected to serve future developments.

5.7 Enable Communication

Good communication will be fundamental in enabling the other interventions to be successful, as many require cross-sector working between disparate and varied stakeholders. These interventions focus on providing key gateways and forums for discussion, research and implementation of initiatives.

5.7.1 Web Portal

SPT's (www.spt.co.uk/freight) website saw an increase of 22% website hits in 2015/2016. Information and awareness are important elements of ensuring that decisions are based on sound knowledge.

Currently there is no 'one stop shop' for information on moving freight within the SPT region, with information dispersed across a myriad of different websites. Whilst duplicating this information is unnecessary, curating and bringing it together will provide a valuable resource for freight operators and hauliers across the region. On any one day, a freight operator might need to find out about roadworks on the strategic road network, understand restrictions on urban movements for a delivery in an area, feed into a consultation on planning, sign up staff for approved training, book overnight lorry parking for an incoming load and seek information regarding moving a shipment of goods to England by rail. A functional gateway that signposts relevant resources and brought together access to these diverse tasks would bring efficiency as well as providing a high profile access point for private and public sectors to work together.

The web portal could further provide a home for and showcase research undertaken by SPT (and the Freight Quality Partnership) including successful case studies or information on available training (either in terms of staff recruitment or in line with fleet accreditation commitments) and enable communication between all interested parties.

Primary Issue: Communication

Secondary Issues: Skills and Standards, Modal Shift, Traffic Congestion, Connectivity, Urban Deliveries, Overnight Lorry Parking

The further development of such a web portal should be seen as a priority for enabling a clear channel of communication between the public and private sectors regarding freight movements as well as developments and ambitions in the sector. Given the central role that the gateway will play across the other interventions, as well as its opportunity to provide a "first impression" for how Freight is viewed and managed in the area, it is important that this intervention is suitably funded and implemented quickly

5.7.2 Freight Quality Partnership

Freight Quality Partnerships (FQPs) provide a powerful communication channel between public and private sectors and a forum for

exploring and testing innovative solutions to challenges facing freight and logistics in the relevant regional environment. With the inclusion of local authorities, academic institutions, private operators and other stakeholders, they can provide an excellent forum in which ideas and issues can be discussed and a positive, pro-active atmosphere of collaborative working be developed. This can, in turn, help provide a natural body to help guide the initiation of research projects and the deployment of interventions, including ensuring industry support for such projects as (for example) clean air zones, fleet accreditation schemes, or the roll out and placement of alternative fuel infrastructure.

Primary Issue: Growth

Secondary Issues: Air Quality, Traffic Congestion, Noise and Vibration, Modal Shift, Connectivity, Urban Deliveries, Road Safety and Vehicle Crime, Alternative Fuels

SPT currently has an active FQP and it is suggested that the membership and terms of reference for this group are reviewed and expanded as appropriate to provide a suitable body to consult on and lead developments in freight as part of SPT's long-term strategy. This may also include an increase in funding, especially given the role of the FQP in managing and leading ongoing research and innovation.

5.8 Summary

Table 5.1 summarises how the identified solutions in Chapter 5 can overcome the issues outlined in Chapter 3. The majority of the solutions address more than one issue whilst others are more targeted.

In addition the interventions outlined above will greatly contribute to overcoming the issues and this is shown in table 5.2. It is recognised that the freight strategy needs to consider and support different modes of transport. Additionally it is also recognised that the majority of freight movements in Strathclyde are made by road and this is something likely to continue in the foreseeable future.

Through generating a strong channel of communication between key stakeholders across public and private sectors in the freight industry, it will enable SPT and the wider region to move into the future on a sure footing and with a well-established forum for the discussion and piloting of future innovations. This aspect is explored more fully in the following section.

Table 5.1: Potential Solutions and Identified Issues

		Issues												
		3.2 Growth in Strathclyde	3.3 Air Quality	3.4 Traffic Congestion	3.5 Connectivity	3.6 Directional Signage	3.7 Urban Deliveries	3.8 Overnight Lorry Parking	3.9 Rail Freight	3.10 Modal Shift	3.11 Alternative Fuels	3.12 Noise and Vibration	3.13 Road Safety and vehicle crime	3.14 Skills and Standards
Solutions	5.2 Improve Air Quality and Environment													
	5.2.1 Fleet Renewal	✓	✓											
	5.2.2 Low Emission and Alternatively Fuelled Freight Vehicles	✓	✓				✓				✓	✓		
	5.2.3 Low Emission Zones	✓	✓				✓				✓	✓		
	5.3 Increase the Safety of Freight Movement													
	5.3.1 Public Sector Procurement	✓	✓	✓									✓	✓
	5.3.2 Road Safety	✓					✓						✓	✓
	5.3.3 Vehicle Crime and Security	✓											✓	✓
	5.3.4 Lorry Parking Review	✓			✓			✓						
	5.4 Encourage Intermodal Freight Movement													
	5.4.1 Air Freight	✓	✓		✓					✓				
	5.4.2 Water Freight	✓	✓	✓	✓					✓				
	5.4.3 Rail Freight	✓	✓	✓	✓				✓	✓				
	5.5 Enhance Quality of Life & Well-Being													
	5.5.1 Freight Noise Strategy	✓						✓				✓		
	5.5.2 Delivery and Servicing Plans	✓	✓	✓				✓						
	5.5.3 Accommodating Cycle Logistics	✓	✓	✓				✓				✓		
	5.5.4 Innovation	✓	✓	✓				✓						
	5.5.5 Fleet Accreditation	✓	✓	✓				✓					✓	✓
	5.5.6 Skills and Standards	✓						✓					✓	✓
	5.6 Ensure Economic Competitiveness													
	5.6.1 Review Directional Signage	✓	✓	✓	✓	✓						✓		
	5.6.2 Strategic Connectivity and Congestion	✓	✓	✓	✓									
	5.6.3 Consolidation & Groupage	✓	✓	✓				✓				✓		
	5.6.4 Land Use Planning	✓			✓				✓	✓				
	5.7 Enable Communication													
	5.7.1 Web Portal	✓		✓	✓			✓	✓		✓			✓
	5.7.2 Freight Quality Partnership	✓	✓	✓	✓			✓			✓	✓	✓	✓

The table below contains a series of initiatives in order to deliver the freight strategy for Strathclyde. The table details indicative timescales for delivery (short-term 2017/18, medium-term 2019/21 and longer-term 2021+), the lead party to take ownership of the initiative, other stakeholders to help deliver the initiative, estimated cost (low <50,000, medium 50,000-500,000, cost 500,000>) and geographical coverage. These solutions can be delivered by the public sector with the support of the private sector. It must be highlighted however that the delivery of any of the actions will be dependent upon the availability of funding and resources.

Table 5.2 has identified a series of measures (short, medium, long term) which through the commitment of SPT and Local Authorities is both deliverable and affordable and contains some 'quick wins'.

Table 5.2: Action Plan

Action	Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage																	
							Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire						
5.2 Improve Air Quality and Environment																								
5.2.1 Fleet Renewal	Reduce the air quality impacts arising from freight transport by increasing the rate of fleet renewal	Workshop Consultation	SPT Local Authorities / Air Quality Managers	Short	High	Development of a business case to Transport Scotland for a scheme to assist SME hauliers and Local Authorities to renew their fleets with Euro VI or better emissions technology.																		
5.2.2 Alternative fuelled vehicles	Research information on low emission freight vehicles and feature case studies examples Work with Local Authorities to trial the use of electric vehicles and increase further uptake.	Workshop Consultation	SPT Local Authorities Low Carbon Vehicle Partnership	Short	Medium	Review existing and planned provision for electric charging points and gas refuelling stations in the light of expected demand. Provide additional infrastructure.																		
5.2.3 Low Emission Zones (LEZ)	Assess other comparable cities' air quality management ambitions and use best practice to consider the implications of implementing similar Low Emission Zone/Clean Air Zone in Strathclyde.	Data Collection	Transport Scotland, SPT, Local Authorities, CAFS Governance Group, STEP	Medium	Low	Develop an impact assessment of a Low Emission Zone and Clean Air Zone in Strathclyde.																		
5.3 Increase the Safety of Freight Movement																								
5.3.1 Public Sector Procurement/ planning	Consult on and amend public sector procurement contracts to specify suppliers that have adopted an appropriate fleet accreditation schemes. Consult on and include where appropriate as additional planning conditions in respect of significant building developments.	Workshop	SPT, Local Authorities	Short	Low	Revised public sector procurement contracts – to include provisions for the assistance of SME's to meet these standards. Development of model planning conditions for significant building developments																		

Action	Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage															
							Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire				
5.3.2 Road Safety	Set up agreed methodology for monitoring, reporting and sharing the outputs involving Killed Seriously Injured, rate of incidents involving freight vehicles in the area with interested parties.	Workshop Consultation Data Collection	Transport Scotland, SPT, Local Authorities, Police, RHA, FTA	Short	Medium	Set up methodology and report data linked to an associated action plan / review process. Identify freight related accident black spots and address issues																
5.3.3 Vehicle Crime and Security	Understand the extent of freight related crime; identify the main types of crime, causes of crime for example: diesel and load theft. and work with the police to identify key crime hot spots	Workshop Consultation Data Collection	Transport Scotland, SPT, Local Authorities, Police, Road Freight Operators, FTA, RHA	Short	Low	Establishment of a Freight Security Sub Group of the SPT Freight Quality Partnership. Use of the mapping portal to plot crime and freight collision hot spots and to review current action plan in the light of such data. Work to reduce crime levels.																
5.3.4 Lorry Parking Review	Conduct a more detailed study on the current provision of secure lorry parking including the number of spaces available, level of demand and locational and facilities requirements. Identify how needs may be met.	Workshop Consultation Data Collection	Transport Scotland, SPT, Local Authorities, Road Freight Operators, Truck Stop Owners, RHA/FTA	Short	Low	Produce maps and information for road freight stakeholders with locations of driver rest areas. Conduct a feasibility study on lorry parking in Strathclyde																
5.4 Encourage Intermodal Freight Movement																						
5.4.1 Air Freight	Ensure growth of air freight can be facilitated by having good road/rail transport access to airports.	Workshop, Data Collection	SPT, Local Authorities, Transport Scotland	Medium	Low	Improved connectivity to airports by road and rail including improving journey time reliability.																

Action		Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage														
								Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire			
5.4.2	Water freight	Ensure growth of water freight is facilitated by adequate road / rail connections to ports including development and protection of train paths and gauge where appropriate. This should underpin the role of SPT's Ports as key feeder Ports for Scotland.	Data Collection	SPT, Local Authorities, Ports, Transport Scotland, NR	Short	Low	Gather an evidence base of the value of Ports to the Scottish Economy and incorporate into the appropriate business cases for improving connectivity to and from ports.															
5.4.3	Rail Freight	Support and promote where applicable modal shift from road to rail and maximise the use of rail freight interchanges where possible. Identify new market sectors/ commodities for rail freight and protect existing rail routes.	Workshop Consultation Data Collection	Rail Freight Operators, Network Rail, Scottish Freight Joint Board	Short-Medium	Medium	Implementation of an Introduction to, Buying and Using Rail Freight Workshop' and an introduction to Freight for Planners / Development Control Workshop' Localised version / content of the 'How to use Intermodal Freight Guide' Representation of SPT on the Scottish Governments Joint Freight Board.															
5.5 Enhance Quality of Life and Well-being																						
5.5.1	Freight Noise Strategy	Develop a Freight Noise Strategy Toolkit for Local Authorities to use as part of their Planning and Enforcement activities.	Workshop Data Collection	RTPs, Local Authorities, Road Freight Operators, Rail Freight Operators	Short - Medium	Medium	Establish a Demonstrator Project as part of a new development within the Strathclyde region to showcase the package effect of the various on-vehicle and off-vehicle technologies which can be deployed to allow for extended out-of-hours delivery operations.															
5.5.2	Delivery Servicing Plans (DSPs)	Explore opportunities to improve DSPs in freight hot spots and at major freight generating locations to enable more efficient use of freight delivery slots.	Workshop Consultation	Local Authorities, Business and Freight Operators	Short – Medium	Low/Medium	Develop Delivery DSP toolkit to enable individual Local Authorities to apply this to their local circumstances. Trial DSPs on local authority premises Targeted programme of DSP for the key shopping centres in the															

Action	Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage															
							Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire				
						major centres of each Local Authority.																
5.5.3 Accommodating cycle logistics	<p>Ensure that, within design guidance parameters, cycle logistics is catered for when considering the introduction of new cycle infrastructure.</p> <p>Encourage the use of cycle logistics and electric cycles vehicles for public sector deliveries.</p>	Workshop	Local Authorities, Sustrans	Long	Medium/High	<p>Cycle logistics friendly cycling infrastructure.</p> <p>Increase the % of public sector work moved by sustainable transport.</p>																
5.5.4 Innovation	<p>Introducing additional locker banks in key locations.</p> <p>Raise awareness of scope for innovative technological solutions.</p> <p>Investigate the results of the introduction of smart loading bays.</p> <p>Investigate the use of council depots as consolidation centres</p> <p>Consider the use of park and ride sites as overnight lorry parks</p>	Workshop Consultation	Local Authorities	Short	Low	<p>Additional lockers in key locations.</p> <p>Presentations at FQP meetings to inform stakeholders of new technologies.</p> <p>Research note for use by Planners / Development for new developments / planning applications.</p>																
5.5.5 Fleet Accreditation	<p>Encourage further uptake of fleet accreditation schemes, including the use of these in local authority vehicle fleets.</p>	Workshop	Local Authorities	Short	Low	<p>More vehicles and operators associated with best practice. Investigate stipulating that hauliers/couriers should be signed up to a safety compliance scheme.</p>																

Action	Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage																	
							Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire						
<p>5.5.6 Skills and standards</p> <p>Work with local education and training providers to ensure there is availability of training courses for logistics related subjects, ranging from lorry driver shortages to the need for logistics graduates.</p>	Data Collection		Transport Scotland, SPT, Local Authorities Colleges Universities Education Providers, RHA FTA, CILT	Short	Low	Work with training providers to develop a curriculum for logistics																		
5.6 Ensure Economic Competitiveness																								
<p>5.6.1 Review directional signage</p> <p>Review and agree with freight industry the most appropriate routes (primary network) and what diversionary routes they should be using, for commodities such as timber, aggregates, abnormal loads and coal.</p>	Data Collection Consultation		Local Authorities, Road Freight Operators	Short	Medium	Agreed route hierarchy and install additional freight related signage to certain key installations if current provisions are inadequate.																		
<p>5.6.2 Strategic Connectivity - Congestion</p> <p>Continue to support measures to address congestion at key hot spots on roads & rail throughout the region and remove any constraints for freight and improve journey times and reliability.</p>	Workshop Consultation Data Collection		Transport Scotland, SPT, LAs, Local Authorities, Transport Scotland, NR	Ongoing	Medium	Co-ordinate responses from the Private Sector in supporting the relevant infrastructure improvements including the provision of operating evidence such as journey time delays etc. for feeding into the appropriate business cases.																		
<p>5.6.3 Consolidation Centres</p> <p>Develop best practice for new developments (homes and offices by considering the use of construction consolidation centres.</p> <p>Investigate the possibility of shared deliveries and/or ad-hoc consolidation centres using Council depots.</p>	Workshop Consultation Data Collection		SPT, Local Authorities. Planning Officers. Road Freight. Operators	Medium	Medium/High	Development of Best Practice Guidance which is adopted by local authorities to assist the development of more sustainable developments. Identification of and setting up of a pilot specialised consolidation centre – in particular, using existing council depots.																		

Action	Evidence Source	Lead Party	Stakeholder	Timescale	Cost	Deliverable	Coverage														
							Argyll and Bute	West Dunbartonshire	East Dunbartonshire	North Lanarkshire	South Lanarkshire	Glasgow City	South Ayrshire	East Ayrshire	North Ayrshire	Inverclyde	Renfrewshire	East Renfrewshire			
<p>5.6.4 Land use/planning</p> <p>Consideration of freight into the land use planning process and associated decision making across Strathclyde to support the efficiency, equality and environmental agendas and policies.</p>	Workshop Consultation		Scot Govt, RPT, Local Authority Planning Officers and Transport Planners	Medium	Low	Core Principles on Freight & Logistics Operations which can be incorporated into the Local Authority Local Plan and Clydeplan. To influence up to the All Scotland Level through the forthcoming Planning White Paper and NPF 4.															
5.7 Enable Communication																					
<p>5.7.1 Web-Portal</p> <p>Continue to develop the web-portal and engage with the freight industry by better understanding what information the industry would most use for effective operations</p>	Data Collection		SPT,Local Authorities, RHA, FTA, Truck stop owners, road freight operators,	Ongoing	Medium	Information on SPT website e.g. information on the location of industrial estates, lorry parks, ports, airports, seaports etc.															
<p>5.7.2 Freight Quality Partnership</p> <p>Ensure that the Freight Quality Partnership continues to remain relevant to the efficiency and effectiveness of freight in Strathclyde</p> <p>Provide appropriate opportunities for the freight industry (through the Freight Quality Partnership) to contribute to research, development and delivery of freight related projects and potential solutions.</p> <p>The Freight Quality Partnership to continue working with the freight industry stakeholders through regular meetings.</p>	Workshop Consultation Data Collection		Local Authorities, Freight Operators, Local Businesses	Ongoing	Medium	<p>Active FQP – with the development of a linked programme of mixed deliverables that the private sector and public sector derive value from.</p> <p>Creation of a number of specific task and finish groups charged with implementing specific aspects of the SPT Freight Action Plan.</p>															

6. Roadmap to 2030

Current issues for freight and logistics have been considered and solutions proposed in the previous chapters. However, in order to achieve our ambitions, Strathclyde needs to utilise this framework to deal with upcoming challenges.

6.1 Introduction

The forecasting of freight activity is not an easy task. Uncertainty has been generated by a number of events through 2016, and therefore a clear pathway to continued and sustainable growth is not clear. However, the six ambitions stated previously, and the interventions laid out to address the current issues facing freight across the region should provide a strong framework with which to respond to changing technologies, regulatory and physical environments.

Therefore the interventions laid out previously were mostly short to medium term (that is, 2017 – 2021), with some continuing into the later period and a few (such as those which enable communication) continuing right through to 2030 and, potentially, beyond.

Using the Freight Quality Partnership and the Web Portal as a nexus for research and communication into how best to accommodate future developments will provide a strong, cross-sector and industry-informed approach. This can then be combined with the funding sources laid out in this chapter (amongst others that may be relevant) to fund and shape continued improvement of the freight and logistics sector in Strathclyde towards the ambitious vision of Freight in 2030.

6.2 Immediate Priorities and ‘Quick Wins’

The interventions and their timescales from the previous section are laid out in Table 6.1. As this shows, there are a number of ‘quick

wins’ that can be targeted to build momentum and make a positive difference in the immediate future. Key identified short-term interventions are:

1. **Freight Quality Partnership:** Using the FQP as a body to help shape, control and understand the result of the other interventions will build strong links between the public and private sectors which can be utilised to ensure smooth and effective implementation of the Strategy.
2. **Web Portal:** As the centre of communication between SPT, the FQP and the wider freight stakeholder community, the continued development of the web portal is an important aspect of the strategy. Providing a home for case studies and research papers undertaken by the partnership, including case studies of successful pilots, modal shift and other interventions, it could also conceivably coordinate feedback and input to planning and other public sector consultations.
3. **Public Sector Procurement:** commitment to improvement, better standards, critical mass of contracts supporting best practice operators, implementation guides, etc.

This will begin making progress towards all six of the ambitions as well as providing momentum for the other interventions to follow.

6.3 Summary of Intervention Timeline

Table 6.1 overleaf shows how the interventions distribute over the period to 2030. As can be seen, the majority are clustered in the short to medium term, in order to avoid restricting innovation and flexibility as time progresses.

Table 6.1: Ambitions Timeline

	Short-Term 2017 - 2018	Medium-Term 2019 - 2021	Long-Term 2022 - 2030
Air Quality and Environment	5.2.1. Fleet Renewal		
	5.2.2. Low Emission and Alternately Fuelled Vehicles		
	5.2.3. Low Emission Zones		
Safety of Freight Movement	5.3.1. Public Sector Procurement		
	5.3.2. Road Safety		
	5.3.3. Vehicle Crime and Security		
	5.3.4. Lorry Parking Review		
Intermodal Freight	5.4.1. Air Freight		
	5.4.2. Sea Freight		
	5.4.3. Rail Freight		
Quality of Life and Well-Being	5.5.1. Freight Noise Strategy		
	5.5.2. Delivery and Servicing Plans		
	5.5.3. Accommodating Cycle Logistics		
	5.5.4. Fleet Accreditation		
	5.5.5. Skills and Standards		
Economic Competitiveness	5.6.1. Review Directional Signage		
	5.6.2. Strategic Connectivity and Congestion		
	5.6.3. Consolidation and Groupage		
	5.6.4. Land Use Planning		
Enabling Communication	5.7.1. Web Portal		
	5.7.2. Freight Quality Partnership		

6.4 Funding Sources

There are a wide range of funding sources that could be utilised to support the interventions specified.

This section presents a number of funding sources that may be available to support SPT in delivering these, grouped by their level of application: local, national or international. However, they are liable to change over time, and so whilst they can all support appropriate short-term interventions, the funding sources for interventions in the medium to long term may differ.

6.4.1 Scottish Freight Grants

6.4.1.1 Freight Facilities Grants (FFG)

The Freight Facilities Grant (FFG) supports companies with the capital costs associated with a terminal designed to move freight by rail or water instead of road. To encourage this, the extra costs of providing freight handling facilities by water or rail are potentially offset.

The amount of FFG available depends on the value of environmental benefits and the additional costs of moving freight by rail or water, with grants normally limited to a maximum of 50% of capital expenditure.

6.4.1.2 Mode Shift Revenue Support Scheme (MSRS)

This grant helps companies with the extra operating costs associated with moving freight by rail or inland waterways instead of road.

There are two parts to the scheme.

1. Mode Shift Revenue Support **Intermodal** – for the purchase of intermodal container movements by rail.
2. Mode Shift Revenue Support **Bulk and Waterways** – for the purchase of other freight traffic movements by rail and all movements by inland waterway.

6.4.1.3 Waterborne Freight Grant (WFG)

This grant helps companies with the extra operating costs associated with moving freight by water instead of road. The grant assists companies with coastal and short sea shipping costs for up to three years.

The grant differs from MSRS outlined above as it does not provide operating costs for freight transport by rail instead of road. The grant is intended to offset some of the additional costs of switching to a more environmentally friendly mode of transport.

6.4.1.4 The Strategic Timber Transport Fund (STTF)⁴⁴

The Strategic Timber Transport Fund supports sustainable timber transport in rural Scotland through:

- the Strategic Timber Transport Scheme (STTS), which finances projects that minimise impact on fragile roads, and deliver community and environmental benefits and;
- The Timberlink shipping service, which brings timber across the Firth of Clyde.

6.4.1.5 Low Carbon Skills Fund

The Low Carbon Skills Fund supports employers with funding for training. The funding assists with up to 50% of employee training costs, up to a maximum of £1,000 per employee.

Low Carbon Skills Fund covers employee training in areas such as renewable energy and low-carbon technologies, energy efficiency, waste management and reuse, and reducing carbon in supply and energy management.

6.4.1.6 Scottish Strategic Rail Freight Investment Fund⁴⁵ (Network Rail)

A £30 million Scottish Strategic Rail Freight Investment Fund was set up by The Scottish Government for 2014-19 (Control Period 5).

The fund supports increased spending on strategic infrastructure enhancements to encourage growth in rail freight and facilitate modal shift from road to rail.

Projects which are planned to be delivered in this current control period include enhancement of the network in the Mossend area; electrification of the Edinburgh South Suburban line, gauge clearance works at

⁴⁴<http://scotland.forestry.gov.uk/supporting/forest-industries/timber-transport/strategic-timber-transport-fund>
⁴⁵http://www.transport.gov.scot/sites/default/files/document/s/rrd_reports/uploaded_reports/j232012/j232012.pdf

Carmuir, and improvements between Elgin and Inverness⁴⁶.

The fund is administered by Network Rail's Head of Strategy and Planning (Scotland).

6.4.2 European Freight Grants

6.4.2.1 European Regional Development Fund

The ERDF funded Weastflows⁴⁷, a €9 million project designed to help enable freight movements in North West Europe to be more efficient and sustainable. Weastflows explored and developed ICT solutions to make better use of existing infrastructure and encourage a shift from road haulage to more sustainable rail, sea and inland waterway transport.

The primary aim of the ERDF is to strengthen social and economic cohesion in the EU by correcting regional imbalances. The ERDF focuses investments on the following priority areas:

- Research and innovation
- The digital agenda
- Support for SMEs
- The low-carbon economy

6.4.2.2 Connecting Europe Facility (CEF)⁴⁸ (European Union)

The Connecting Europe Facility is a European instrument aimed at supporting the development of high-performing, sustainable and efficiently interconnected trans-European networks. It focuses on networks in the field of transport, alongside energy and telecommunications.

The type of projects which could receive EU funding includes:

- Initiatives to reduce rail freight noise, including retrofitting existing rolling stock.
- Increasing the efficiency of port freight container handling facilities by developing multimodal platforms for better access to rail for freight transport.

⁴⁶http://www.parliament.scot/S4_InfrastructureandCapitalInvestmentCommittee/Inquiries/Network_Rail.pdf

⁴⁷<http://www.instituteforsustainability.co.uk/weastflows.htm>

⁴⁸<https://www.mygov.scot/connecting-europe-facility-transport/>

6.4.2.3 Horizon 2020

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. The Transport Challenge aims to boost the competitiveness of the European transport industries and develop a European transport system that is resource-efficient, climate-and-environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.

Horizon 2020 will provide funding for resource efficient transport that respects the environment. It aims to deliver better mobility, increased safety and security with a substantial reduction in traffic congestion; a substantial improvement in the mobility of people and freight; the development of new concepts for freight transport and logistics; and a reduction in accident rates, fatalities and casualties.

6.4.3 Summary

This section outlined a number of funding sources available to assist in the funding of freight initiatives in Scotland. The table below summarises these initiatives against the key themes of the Freight Strategy.

	Air Quality & Environment	Safety of Freight Movement	Encourage Multimodal Freight	Improve Liveability & Quality of Life	Efficient Movement
Freight Facilities Grant	✓		✓		
Mode Shift Revenue Support Scheme	✓		✓		
Waterborne Freight Grant	✓		✓		
Scottish Strategic Rail Freight Investment Fund	✓	✓	✓	✓	✓
Future Network Development Fund		✓		✓	✓
Scottish Network Improvement Fund	✓	✓	✓		✓
Connecting Europe Facility (CEF)	✓	✓		✓	
Horizon 2020	✓	✓	✓	✓	✓
European Regional Development Fund	✓			✓	✓

However, whilst there is uncertainty about the nature and shape of medium to long term

funding, there are also a number of developments in freight and logistics over the same time period which may require SPT to utilise the framework set up in the short term to react and adopt innovative solutions. Some of these are laid out below:

6.5 The Medium Term

In the medium term a number of technologies and/or regulatory changes can already be seen to be heading towards implementation. As such, it is important that SPT maintains awareness of these, and utilises the relationships built up in the short term when dealing with the issues to develop a robust and informed response to these forthcoming challenges and opportunities.

6.5.1 Lorry Platooning

The concept of trucks travelling in close proximity (a platoon) under some level of automation is currently being developed in a number of countries. Successful live road trials have been undertaken in European countries with an active driver in the lead vehicle and passive drivers in 'following' lorries. Six truck brands are currently participating in the Europe based research: DAF Trucks, Daimler Trucks, Iveco, MAN Truck & Bus, Scania and Volvo Group. The proposed benefits include:

- **Safety:** Automatically controlled vehicles are capable of braking immediately and in a more controlled manner than a vehicle under the control of human inputs.
- **Cost Savings:** Automatically controlled vehicles are capable of applying throttle and maintaining speed more consistently than a human driver. Vehicles travelling in close proximity may experience aerodynamic benefits compared to vehicles travelling with larger separation distances.
- **Highway Efficiency:** Vehicles travelling in close proximity have a smaller footprint, i.e. they take up less road space in moving traffic which could help to reduce congestion in heavy traffic flow.

However, potential problems with truck platooning include:

- **Standards:** Difficulties in ensuring that technological and legal standards exist across various countries to ensure that vehicles are not spatially limited by policy and therefore prevented from operating across borders..

- **Safety:** Questions around how other drivers will interact with platoons, e.g. drivers "cutting up" the lead lorry in the knowledge that the platoon will brake automatically, how drivers attempting to merge onto the motorway will behave if a long platoon is passing a slip road.
- **Adverse Conditions:** Ensuring that the system reacts appropriately to poor infrastructure condition such as potholes as well as inclement weather.

It is possible that truck platooning could be trialled on certain English motorways as early as 2017/18 and if successful introduced in the medium term. The date for introduction in Scotland will probably depend on DfT trials. It is uncertain when, if at all, platooning would be introduced on lower classification roads.

6.5.2 Clean Air Zones

The UK Government aims to introduce Clean Air Zones in five English cities by 2020: Birmingham, Leeds, Nottingham, Derby and Southampton, whilst the Scottish Government has also got ambitions with regard to a number of urban areas including in the Strathclyde region.

This will affect buses, taxis and trucks initially and will probably use an ANPR system. The scheme works by introducing financial charges for the most polluting vehicles entering the defined city area, and was open to public consultation until 9th December 2016.

It is possible that the introduction of this scheme could persuade operators to accelerate the uptake of highly efficient fleet vehicles in order to avoid the financial penalty. Delivery patterns could be affected if the restrictions only apply within certain hours, and ultimately consumer behaviour could change if the viability of current operating practices of some businesses are affected. Delivery practices could change, for example with HGVs delivering to inter-urban hubs where items are then distributed onward via smaller electric vehicles or cycle logistics.

6.5.3 Rail Freight Interchanges

There has been an increase in intermodal freight movements on the rail network and further increase is forecast in the future by the DfT and Network Rail. This is partly driven by an increase in the number of large distribution centres connected to rail in addition to greater port capacity. An example of this is the iPort rail freight interchange that includes an

Amazon distribution centre, opened recently near Doncaster in South Yorkshire. This trend could result in significant additional tonnage moving by rail to population and manufacturing centres such as the Strathclyde region and so merits continued passive provision and encouragement as laid out in the solutions chapter.

6.5.4 Mega-Vessels

There has been a trend towards larger, higher capacity “mega” vessels in the shipping container trade, as well as a trend towards increased port capacity (as evidenced by the recent construction of Liverpool2). This increases the quantity of goods carried per shipment, resulting in larger numbers of containers being delivered into ports in more concentrated timeframes from fewer vessels. This, in turn, increases demand for feeder vessels to smaller ports and also will result in more ‘peaky’ use of the road network to handle container shipments in from ports, unless greater use is made of rail to move containers from the ports to regional distribution terminals for onward final delivery.

6.5.5 Urban Deliveries

A number of technologies are potentially going to adjust the nature and efficiency of urban deliveries in the medium term, and these are profiled below. SPT’s various town centres may provide suitable testing locations for some of these innovative ideas:

6.5.5.1 Smart Loading Bays

Smart loading bays in urban areas or shopping centres could be introduced, with spaces and times allocated through online systems based on need and consumer demand. This could help to address congestion and improper parking where loading or delivery spaces are constrained, significantly improving efficiency.

6.5.5.2 Drone Deliveries

Airborne drones could be used to deliver some packages to their final destination. DHL is currently using drones for remote “last mile” deliveries and TNT in Germany are moving urgent pharmaceuticals to islands within the range of the coast. There are some safety and reliability concerns regarding this method which could be challenging to design out.

6.5.5.3 Smart Lockers

Although smart lockers and collection points are already in use in many areas, there is significant room for these services to expand. One approach could be to have smart letter boxes to be installed in or near every residential building, which could greatly reduce the number of failed deliveries.

6.5.5.4 Automated Night Deliveries

Unaccompanied off-peak deliveries could be introduced using QR codes at the destination to approve the delivery. Various vehicles may be suitable for this method including slower moving, wheeled drones which travel along the pavement. Off-peak may be preferred as there may be fewer pedestrians on the street. This approach could be particularly effective if linked to residential smart lockers.

6.6 The Long Term and Beyond

Looking ahead to the long term and attempting to forecast the future given the current state of flux regarding technologies, physical and regulatory climate is riven with challenges. However, the following high-level innovations may prove transformational in the period beyond 2025:

6.6.1 Driverless Vehicles

The implementation of fully automated trucks is more likely to be successful than that of automatically controlled cars due to the nature of freight journeys. A typical truck will experience more motorway miles than a typical car. As motorway driving involves repetitive basic actions in a standard and usually well maintained environment, this is a much more suitable test bed for automated driving technology than a dynamic, variable urban environment. The increased motorway mileage of a typical truck will also mean that there are likely to be increased benefits compared to those of a typical car.

Despite this, driverless trucks still face the same obstacles as driverless cars. These include:

- **Safety:** The machine could react incorrectly to external event such as an unexpected obstacle.
- **Ethics:** The system could face ethical dilemmas such as: the vehicle cannot

stop in time but can only steer into car A or car B, and therefore there is a need for some kind of process to control this

- **Liability:** In the event of an accident there is a need to have responsibility assigned. This could depend on manufacturer policy. Furthermore, if a human backup driver is present, and an accident occurs in the seconds between automated and manual control, then there is an additional level of complication involved.
- **Peak Traffic:** Vehicles without drivers could feasibly be programmed to travel all night without rest, enabling better utilisation of the off peak period. However, whilst this may minimise congestion at peak periods, it may result in other challenges such as commensurate increases in noise, vibration and congestion at other periods of the day.
- **Economic Impact:** Loss of driving jobs. Potential for increase in general highway congestion.
- **Public Acceptance:** The technology could be shunned by the general public in the event of highly publicised accidents, regardless of any statistical safety improvements.

It is probable that autonomy and platooning will develop concurrently beyond 2025, however there are many factors relevant to how the technology develops.

6.6.2 Hydrogen Powered Trains

Germany is expected to introduce trains fuelled by hydrogen in 2017. The advantages of these systems include significant reductions in exhaust emissions and noise pollution. Furthermore, considering that electrifying freight routes may not be cost effective, switching to hydrogen powered rail freight locomotives instead of fossil fuel powered engines could enable an alternative approach leading to more sustainable and flexible rail freight

6.6.3 Alternative Aviation Fuels

Research is currently underway into the production of viable biofuels for use in aeroplanes. The planned use of biofuel in air freight is hypothesised to make the practice

carbon neutral, which would have a significant impact on the sustainability and utilisation of air freight. Alternatively, the Solar Impulse flew around the world using solar power alone as a proof of concept. If this technology could be developed, there could be possible future uses for freight either in hybrid or fully solar powered vehicles, although it should be noted that this is all very hypothetical.

It is currently unclear what effects this could have on air freight capacity, i.e. whether alternatively powered vehicles could carry more or less cargo. It is also possible that there could be tax breaks in future for sustainable air fuels which might make air freight a more economical transport option to businesses, in which connectivity to and from airports would be of more importance than currently.

6.6.4 Hyperloop

Hyperloop has been proposed which consists of passenger or cargo vehicles propelled sustainably along vacuum tubes at high speed. The system is currently in an open testing phase with various designs being trialled around the world, and it is unclear at present whether this mode will succeed. It is possibly more suited to freight than passenger transport due to human factor issues around passenger comfort including vibration, noise, jostling, acceleration/deceleration forces and perceived risk.

6.6.5 3D Printing

If 3D printing reaches a level where items could be manufactured automatically on the high street, or even in consumers' residences, the requirement for these items to be delivered by any traditional mode of transportation may be negated, and the freight and logistics industry truly transformed. A logistics company in Warrington is already trialling the printing of plastic components for the automotive industry.

6.7 Summary

The future is an exciting unknown but supply chains are likely to evolve in a cost effective and environmentally friendly way. It is important that SPT observes and responds to change in a proactive way.

7. Conclusions

Freight is an important and integral part of the economy in Scotland. Given its location on key import/export routes and large population, the Strathclyde region is uniquely placed and is the centre of freight and logistics activity. However, this represents both a challenge and an opportunity.

Freight movement, whilst beneficial for the economy, can have negative impacts on a range of important factors, including safety, the environment and the quality of life for local residents. It is important, therefore, to ensure that the benefits resulting from freight movement can be widely spread whilst its negative impacts minimised and mitigated.

Furthermore, this needs to be done whilst working within the context of changing policy, including a refreshed Regional Transport Strategy and review of the National Transport Strategy. A clear statement of ambition regarding Freight will enable and support the Strathclyde region to inform policies across local, regional and national levels to further these goals.

In order to achieve the minimising of negative externalities, whilst simultaneously managing and promoting sustainable growth in the sector and the economy, six broad areas of focus were developed in consultation with policymakers, operators and other stakeholders. These are:

- Ensure Economic Competitiveness
- Improve Air Quality and Environment
- Increase the Safety of Freight Movement
- Encourage Intermodal Freight Movement
- Enhance Quality of Life & Well-Being
- Enable Communication

Ensuring that each of these areas is considered when making freight-related decisions will ensure that freight movement across the region can contribute towards wider policy goals. Strathclyde will have a thriving and world-leading freight and logistics offer which will support the economy, society and the environment.

Each of the six elements is composed of interventions which will either mitigate an identified issue, directly meet this ambition, or place SPT, local authorities and the freight industry in a better place to take advantage of changing technologies and innovative ideas.

This is a necessary step, as it is important to ensure that the strategy remains a “living” document, an adaptive flexible guide that can tolerate and incorporate change, rather than a prescriptive list of existing ideas.

In this the role of the Freight Quality Partnership will prove crucial as a focus for the coordination and management of a number of interventions across the wider ambitions. This will ensure that the public, academic and private sectors can pull together to generate new ideas and trial solutions, rather than having interventions being mandated or imposed. This cooperative structure will enable SPT to be a leader in Scotland and the UK in managing freight impacts and promoting sustainable growth across the sector.

