SEStran (South East Scotland Transport Partnership)

Freight Consolidation Centre Study

Final Report

Scott Wilson Ltd

April 2010

Revision Schedule

Freight Consolidation Centre Study

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1 INTRODUCTION

1.1 Background

1.1.1 South East Scotland Transport Partnership (SEStran) appointed Scott Wilson to carry out a study examining the prospective function of a Freight Consolidation Centre serving the SEStran area, and the potential for this facility to combine with the role played by the possible development of a Dryport in the region.

1.1.2 SEStran has developed a Regional Transport Strategy (RTS), which recognised the increase in freight movements, especially those being undertaken by light goods vehicles (LGVs)[1]. The RTS specifically underlines its support for the continued maintenance and improvement to connectivity, including that for freight, to the rest of Scotland, the UK and beyond. This would be achieved with the development of key economic gateways, of which the establishment of a Dryport would form an important component.

1.2 Study Objectives

1.2.1 Within the Dryport project, SEStran has identified key elements of the Freight Action Plan that impact on the location and operation of a Dryport. These specifically address where the focus should be on the potential role of consolidation centres in the SEStran area and the part they play in the potential development of Dryports. Therefore the aims of the study are to:

- identify the potential demand and benefits of providing consolidation centre activities to the SEStran area;
- identify the economic benefits of combining the consolidation centre operation as part of a potential Dryport facility; and
- consider the issues involved in combining Dryports and consolidation centre operations.

1.3 Structure of this Report

1.3.1 The overall structure of this report is as follows:

Chapter 2 - reviews various case studies of other consolidation centres and collates lessons learned. This is then used to identify the types of consolidation centres and key issues for the SEStran region;

Chapter 3 - summarises the stakeholder consultation feedback including potential locations for a new consolidation centre and types of facilities required. From this, the likely options for a new consultation centre are identified;

Chapter 4 - assesses the existing and future freight movements within and through the SEStran region and identifies potential demand for a new consolidation centre;

Chapter 5 - collates the findings from the previous sections of the report and examines the economic and operational impacts of the various options for a consolidation centre; and

Chapter 6 - introduces the Dryport concept and identifies the potential synergies with a consolidation centre before identifying the next steps for the study.

[1] SEStran Regional Transport Strategy, 2008 – 2023, para. 2.5.3

2 CASE STUDY REVIEW

2.1 Introduction

2.1.1 In order to identify lessons learned from current or recently operating consolidation centres elsewhere, we have undertaken a case study review of information that Scott Wilson has collected from other similar work. This includes the Best Urban Freight Solutions (BESTUFS) Good Practice Guide[2] and a number of case studies, both in Britain and in Europe. This review aims to consider the volumes, changes in flows, costs and benefits for various types of consolidation centre, and the potential synergies a consolidation centre can share with a Dryport in terms of benefits and operations.

2.1.2 Based on our previous research, we are aware that not all of this data is readily available. Nevertheless there is sufficient data to enable us to build up a reasonable picture of the way in which consolidation centres are appropriate to south east Scotland. Similarly this will allow us to address how they can operate in conjunction with a dry port facility, providing synergies in terms of environmental and business benefits, whilst recognising the potential difficulties that may be encountered.

2.2 Operations of a Consolidation Centre

Objectives

2.2.1 A consolidation centre often tends to have multiple objectives, but the most common aims are associated with reducing congestion, traffic disruption and vehicle emissions within the primary urban area that the consolidation centre serves. Amongst the many objectives are the following:

- reduce congestion by decreasing the number of delivery vehicles required;
- assist with improving air quality;
- ameliorate conflicts between vehicles in unloading areas and delivery bays;
- reduce conflicts between delivery vehicles and other road users, including pedestrians;
- improve the delivery service provided to retailers;
- offer the opportunity for retailers to undertake added-value services;
- satisfy demand from retailers who require larger sales units;
- maximise sales by allowing retailers to increase their sales floor area;
- reduce costs to retailers, both in terms of transport and staff;
- maximise stock availability and product range;
- motivate retailers' staff and allow them to focus on dealing with customers; and
- prevent and/or reduce theft of stock.

[2] Good Practice Guide on Urban Freight Transport, BESTUFS, 2007

2.2.2 The objectives of a consolidation centre tend to be different between the sponsors of a facility (such as the local authority), management and users, but these objectives are rarely in conflict. For example, the objectives from a local authority's point of view are focused on the "big picture", with the intention of meeting public goals of reducing local and sub-regional congestion, intra-modal conflict and pollution. The management of such a scheme would focus on the commercial operation with a keen interest in maximising financial opportunities and improving service delivery.

Operation

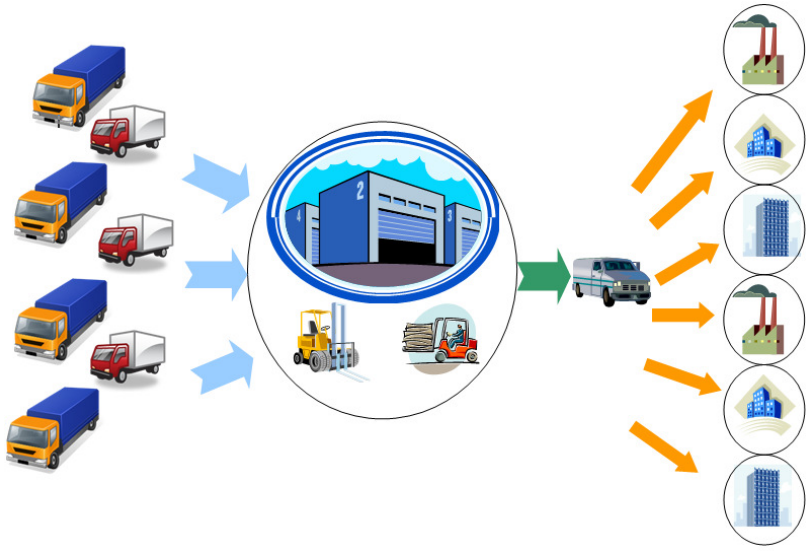
2.2.3 The principles in the operation of a consolidation centre are very similar irrespective of the sector they serve. For example, retailers and contractors place orders for their goods and materials with their suppliers, but instruct that the delivery is made to the consolidation centre and not to the retail business or construction site as is normally the case.

2.2.4 Retailers and contractors then place a delivery order with the consolidation centre for the goods and materials they ordered. This is assembled at the consolidation centre and delivered to the sites. The delivery from the consolidation centre to the retail or construction sites consolidates numerous businesses' orders onto each vehicle. The goods and materials are normally decanted from lorries and other heavy goods vehicles onto smaller vans in order that the deliveries are able to negotiate traffic and loading/unloading conditions with greater speed and flexibility in an urban environment.

2.2.5 Consolidated cargo can be delivered using environmentally friendly vehicles. These distribution options are being examined in a separate study by Colin Buchanan[3].

2.2.6 A relatively high proportion of all the deliveries requested from the consolidation centre are often required with less than 24 hours notice (i.e. on a just-in-time basis). This level of service would have been difficult to achieve if deliveries were being made direct to site by suppliers. Figure 2.1 illustrates the way in which the supply chain is typically configured.

Figure 2.1: Basic Operation of a Consolidation Centre



2.2.7 In many cases, as well as delivering goods and materials to the sites, the vehicles operating from the consolidation centre are also able to collect recyclable packaging and unused

[3] Sustainable Distribution of a Consolidation Centre – Proposal, Colin Buchanan, 2009

materials and bring these back to the consolidation centre. This can then either be recycled or returned through the supply chain for re-use, or collected by a waste operator.

Value added Services

2.2.8 Value added services can also be offered at the consolidation centre allowing retailers and other users of the facility to pick and choose the services that suit their needs. The underlying principle is to charge normal commercial rates for these activities. The cost for the added value activities is borne by the retailer requesting the service. Costs for each value added service are calculated on an individual basis and are subject to negotiation between the operator and the customer. Table 2.1 details the typical services offered by a consolidation centre, together with the benefits to retailers.

Table 2.1 – Main activities and associated benefits of a Consolidation Centre

Activity	Benefits
Consolidation	Multiple daily deliveries can be consolidated to a reduced number of deliveries, which enables staff to concentrate on core activities, thereby increasing productivity.
Cross docking	Deliveries can be made to a consolidation centre at a time to suit the supplier, with onward delivery at times to suit the store, therefore reducing staff and transport costs.
Storage	This can be short, medium or long term, depending on requirements. Storage can be at carton, case, cage or pallet level.
Replenishment	Regular deliveries of a product that is needed by the user throughout the day, rather than one unmanageable delivery. Staff are able to react quickly to customers needs, therefore eliminating lost sales.
Pre-retailing	For retailers, pre-merchandising activities can be carried out at the consolidation centre before the stock arrives at the retail outlet. This includes unpacking, hanging, security tagging, re-labelling, size cubing and sale markdowns. This activity enables store staff to concentrate on customer facing activity rather than being at the back of the store. Ultimately, this lowers staff turnover and increases motivation and job satisfaction.

2.2.9 The activities described above may be complimented by a broad range of other value added services, which may include any combination of the following:

- collection services;
- label printing;
- stock room management; and
- staff training facilities.

2.3 Overview of the Case Studies

2.3.1 Six examples of freight consolidation centres have been reviewed, focussing on their efficiency, sustainability, and their effects in terms of freight transport impacts on the supply chain. The six examples we have reviewed which provide the range and depth of information required are as follows:

- Bristol Consolidation Centre;

- Meadowhall Consolidation Centre;
- London Construction Consolidation Centre;
- Heathrow Airport Consolidation Centre;
- Monaco Consolidation Centre; and
- Stockholm Hammarby Consolidation Centre.

2.3.2 The schemes noted above provide a good range of different types of consolidation centre. Table 2.2 shows the basic characteristics of the six schemes that are considered in detail. As can be seen, the sample provides both UK and non-UK schemes, a mix of retail and construction sectors (since these are most common), and examples of optional and compulsory scheme participation.

Table 2.2 – Key characteristics of Consolidation Centres under review

Centre	Location	Sector	Status	Terms of use
Bristol (Broadmead)	UK	Retail	Active	Optional
Sheffield (Meadowhall)	UK	Retail	Active	Optional
London	UK	Construction	Closed *	Optional
Heathrow Airport	UK	Retail	Active	Optional
Monaco	Overseas	All	Active	Compulsory **
Stockholm (Hammarby)	Overseas	Construction	Closed	Compulsory **

** concept now applied to new site*
*** with certain exceptions (see text)*

2.3.3 The subsequent descriptions of the six case studies cover their operational performance, financial aspects and other impacts.

Bristol Consolidation Centre

Background

2.3.4 The Bristol Consolidation Centre (BCC) is located on an established industrial estate on the north western edge of Bristol, close to both the M4 and M5 motorways. It is approximately 10 miles from Broadmead, with a typical journey time of 25 minutes.

2.3.5 The BCC serves the Broadmead area of Bristol city centre, which forms the core retail district of the city, and there are over 300 retailers in Broadmead. The BCC has been operated by DHL Exel since it opened in May 2004, having secured the support of major stakeholders in the Broadmead area.

Operations Characteristics

2.3.6 The BCC covers approximately 500 sq. m. and uses two vehicles for deliveries; a 7.5 tonne and a 17.5 tonne vehicle. A 9 tonne electric vehicle is being trialled. The focus of the BCC is on flows of non-perishable and not very high value goods for medium-sized retailers.

Financial Issues

2.3.7 The consolidation centre was 100 per cent publicly funded in the first instance, with the money coming from the EC VIVALDI project, which was part of the CIVITAS programme. This funding was time-limited, covering the scheme development phase from 2002 to 2006, with subsequent

efforts having been made to move to a business model with as high degree of cost recovery from participants as possible.

2.3.8 Retailer contributions are determined on a case-by-case basis, dependent upon the value added services utilised, including collection of waste cardboard and plastic for recycling. There is no published tariff. At first retailer participation was free of charge but increasingly there has been a move to recover the costs from the retailers. Charges will depend on the complexity of the work and the throughput.

2.3.9 At the present time, Bristol City Council is supporting the BCC operations from its revenue budget, but DHL has a key performance indicator (KPI) to recover 40 per cent of the total cost through retailer contributions. As an incentive, this KPI is linked to the operator's management fee. In 2007/08, the total consolidation centre operating cost was £459,000, of which £285,000 came from Bristol City Council against income of £174,000. This represents a cost recovery rate of 38 per cent, close to the 40 per cent KPI.

2.3.10 For the future, Bristol City Council has committed fewer resources, implying a need for DHL to further increase the cost recovery rate or reduce the operating costs. The most likely way to improve cost effectiveness is to further increase the number of participating retailers, since this allows the fixed costs to be distributed across a wider retailer base. For the future, however, it is recognised that public support is likely to be required on a continuing basis, particularly since there is currently no mechanism for enforcing participation by users.

Other Impacts

2.3.11 In 2007, the BCC was achieving the following[4]:

- serving 64 retailers;
- delivery vehicle movements for participating retailers down by 75 per cent, leading to 6,945 fewer vehicle trips and a saving of 178,000 vehicle kilometres;
- savings of 20.3 tonnes of CO_2, 660 kg of NOx and 19.7 kg of PM_{10};
- 12.9 tonnes of cardboard and plastic collected and recycled; and
- 100 per cent on time deliveries, with no lost or damaged stock.

2.3.12 There had been no reports of losses or damage to stock, and the majority of retailers report that they saved more than 20 minutes per delivery. As a consequence, 38 per cent indicated that this enables their staff to spend more time with customers, and 45 per cent state that staff morale has improved and stress levels have reduced. Retailers generally appreciated the improved service and cost reduction opportunities offered by channelling deliveries through the BCC.

Meadowhall Consolidation Centre

Background

2.3.13 The Meadowhall Consolidation Centre (MCC) serves retailers within the Meadowhall shopping centre, which is located adjacent to the M1 on the edge of Sheffield. The MCC is approximately 400 metres from the shopping centre, and is formally known as the Accelerated Response Centre (ARC).

[4] "Broadmead Freight Consolidation Scheme". Presentation provided by T.Hapgood, 28 July 2008

2.3.14 It was established in 2003 by British Land Company (the owners of the shopping centre) and was initially operated by Exel Logistics but is now run by Clipper Secure Logistics. It is an optional MCC, so there is no compulsion for retailers to channel goods through the centre, and there are no penalties for, or restrictions on, deliveries that are made directly to retailers' premises.

Operations Characteristics

2.3.15 The MCC covers 3,159 sq. m of warehousing offering bespoke services to over 180 retailers.

2.3.16 Typically, the MCC services many of the smaller stores located within the shopping centre, although some of the larger retailers have also made use of it, either on a regular or infrequent basis. The MCC can operate on a just-in-time basis, with the ability to meet retailer's requirements by making deliveries within two hours of an order for a product being made.

Financial Issues

2.3.17 The MCC operates on a commercial basis, focusing on the value-added services that it can provide to retailers. The retailer can choose a service from a menu or a pre-defined package, or come up with their own specific requirements which may possibly be catered for.

2.3.18 It is also possible for retailers simply to rent space, but most opt for value-added services. Usage charges are determined on a case-by-case basis. The MCC operator claims that the cost of using the consolidation centre can easily be recovered through store cost savings, increased sales and reduced shrinkage. In fact, the MCC is advertised as being the only consolidation centre that is profitable/self-funding in the UK.

Other Impacts

2.3.19 In addition to the sales turnover benefits to the retailers using the MCC, it is claimed that the centre has reduced the number of vehicles delivering to Meadowhall shopping centre. However, this claim does not seem to have been quantified or verified.

2.3.20 Representatives of the MCC operation have indicated that, in some cases, despite local managers of retail chains being interested in channelling some or all of their supplies through the MCC, senior managers remote from Meadowhall have been slow to recognise any potential benefits of the scheme, which is likely to have reduced the level of uptake.

London Consolidation Centre

Background

2.3.21 This was a two-year pilot study involving the London (Construction) Consolidation Centre (LCC) to serve four large construction sites in the City of London, which operated from 2005 to 2007. The two year trial was judged to have been a success overall. As a result a new LCC replacing the original trial version was established recently in east London, and is being operated by Wilson James, the operator of the trial LCC, on a commercial basis, highlighting the success of the earlier trial. It is serving a number of construction projects, including the range of London Olympics construction projects that will be in progress over the next few years.

Operations Characteristics

2.3.22 The original LCC was a 5,000 sq. m. facility located in South Bermondsey, approximately three miles south of the City of London. It had a capacity of more than 200,000 pallets per annum,

assuming a dwell time of seven days in the LCC[5]. The replacement LCC is even larger than the original version, at 7,500 sq. m.

2.3.23 Contractors working on the construction sites placed orders for their materials with their suppliers, but instructed that the delivery was made to the LCC, not the construction site as is customary. Contractors then placed a delivery order with the LCC for the materials they ordered. This was assembled at the LCC and delivered to the sites. The delivery from the LCC to the construction sites consolidated numerous contractors' orders onto each vehicle.

2.3.24 It is important to note that some deliveries were sent directly to the construction sites rather than via the LCC. These included aggregates, structural steel, ready-mix concrete, escalators and furniture.

2.3.25 As well as delivering construction materials to the sites, the vehicles also collected recyclable and unused materials and brought these back to the LCC. This was then either recycled or returned through the supply chain for re-use, or collected by a waste operator.

2.3.26 The majority of the LCC vehicle fleet had GPS tracking and telematics systems installed. The mobile phone system sent downloads to the centre several times a day which helped to ensure the LCC effectively managed the fleet.

Financial Issues

2.3.27 The original trial project cost £3.2 million and involved a partnership between Stanhope PLC, Bovis Lend Lease, Wilson James and Transport for London (TfL). TfL funded £1.85 million, while the developers and construction companies funded the other £1.35 million. The companies participating in the LCC project voluntarily agreed to use the LCC for the four construction sites. Some of the costs of the LCC were passed on to the individual building contractors.

2.3.28 Both the trial and current LCCs were and are open for too short a while for a full evaluation to have taken place for either. However, the financial objectives for the LCCs is to achieve cost recovery by three main charging systems which are:

- lump sum - calculated on the expected pallet volume over a given period to a specific project;
- re-measurable - a charge is made for storage (price per square metre per week), plus cost of delivery to site; and
- price per pallet delivered to site, which includes storage for up to 3 weeks.

Other Impacts

2.3.29 Operational targets were set for the performance of the LCC in the project. Both these and actual operational performance achieved are shown below[6]:

- 40% target reduction in freight journeys – achieved 70%;
- 30 – 60 minute reduction in journey time of supplier deliveries to contractors – achieved 120 minutes;
- 95% delivery reliability – achieved 97%.

[5] London Construction Consolidation Centre, Freight Best Practice Case Study, DfT & Transport for London (2007), and London Construction Consolidation Centre: Interim Report, TfL

[6] London Construction Consolidation Centre, Freight Best Practice Case Study, Department for Transport (2007)

- 75 per cent (approx.) reduction of CO_2 emissions as a direct result of the reduction in vehicle movements; and

- increased productivity of the labour force by up to 30 minutes per day, potentially allowing a 6 per cent reduction in the size of the labour force required.

Heathrow Airport Consolidation Centre

Background

2.3.30 The sustained growth of retail activities at airports presents a set of new challenges for their management and sustainability. Terminals 1-4 at Heathrow were not designed for retail logistics; access is quite restricted and is shared with staff and passengers. There are also insufficient loading bays and limited back-room storage within the buildings themselves.

2.3.31 In spring 2000, Exel Logistics was chosen to run a consolidation centre trial at the airport, which was so successful that the company later won a permanent contract in 2001.

Operations Characteristics

2.3.32 Off-site consolidation was facilitated through the construction of 2,325 sq m. of warehousing at the south east perimeter of the site, providing multi-temperature storage, eight delivery areas and a shuttle-based delivery schedule with a fixed timetable which delivers directly to the stores. Operations carry on 24 hours a day, 365 days a year and incorporate an innovative recycling scheme.

2.3.33 The consolidation centre is overseen by a central delivery planning team, supplier and warehouse management teams and through constant liaison with stores on the retail site. In total, 45,000 deliveries are made per annum and 190 stores are serviced. The benefits that have been gained from using the consolidation centre are numerous. There is a 99% delivery success rate, overall project plan reliability has increased by 4% and total transport and logistics costs have been reduced, owing to the elimination of part loads and night-time deliveries, a decrease in supplier handling and a reduction in on-site storage.

Financial Issues

2.3.34 The five-year contract worth £2 million per year was awarded to Exel starting in May 2001. The consolidation centre offered considerable potential cost savings to businesses using the facility. For example, the time savings for delivery companies were estimated to be worth £4,715 per business, assuming £20 per hour. If this is extrapolated on an annual basis over all businesses using the consolidation centre, this figure would be equivalent to an annual saving of £245,000, based on the activity levels. In addition fuel savings to businesses are substantial, calculated to be worth £100 per week.

Other Impacts

2.3.35 Productivity has also improved greatly through better planning and, in addition to this, the amount of waste and pollutant emissions have decreased. In 2004, 20,000 vehicle deliveries were made to the centre, which resulted in 45,000 store deliveries being consolidated into 5,000 vehicle trips. Vehicle trips have been reduced by approximately 70% for those goods that are going through the centre. This resulted in an estimated saving of 144,000 vehicle kilometres in 2004 that resulted in a reduction in CO2 emissions of 3,100kg per week.

2.3.36 The impacts of the consolidation centre are summarised as:

- a reduction in vehicles travelling to terminals and driving airside (reduction of 35 vehicle deliveries into the airport per week);

- faster deliveries for distribution companies (at consolidation centre compared with shops, calculated to be 234 hours per week saved in making deliveries);
- more frequent and reliable deliveries at shops;
- vehicle kilometres reduction (approximately 560 fewer vehicle kilometres travelled per week); and
- reductions in CO_2, carbon monoxide, nitrogen oxide and particulate emissions (weekly reductions of 426 kg of CO_2, 1.06 kg non-methane volatile organic compounds, 3.79kg nitrogen oxide, and 0.28 kg of particulates).

Monaco Consolidation Centre

Background

2.3.37 The Monaco Consolidation Centre (MoCC) was established in 1989. It is owned by the Principality of Monaco, which manages it as a public service. The MoCC is operated by a private company on a day-to-day basis. The Chamber of Commerce and Industry and ADEME (the French Energy Agency) are also partners of the consolidation centre scheme.

2.3.38 The MoCC is a 1,300 sq. m. platform located on the south west edge of Monaco, located on land reclaimed from the sea. It has eight employees, and operates five vehicles (three 3.5 tonne vehicles, one 7.5 tonne vehicle, and one electric light duty vehicle). It also includes a data transmission system.

Operations Characteristics

2.3.39 The company operating the MoCC has been given a monopoly over the municipal freight depot. Added to this was a partial monopoly over the delivery of goods in Monaco. Goods vehicles over 8.5 tonnes gross weight are banned from entering Monaco (with some exceptions). If vehicles over 8.5 tonnes have goods that need to be delivered, they have to deliver these goods to the MoCC platform and unload them. The MoCC operator then loads these goods onto their vehicles and makes the final distribution.

2.3.40 Vehicles less than 8.5 tonnes can enter and deliver goods in the principality during specified time periods. At times when these lighter vehicles are not allowed to enter the principality, they can instead be parked in loading/unloading areas, while the drivers make deliveries and collections on foot.

2.3.41 As part of the MoCC there is a Logistics Activity Park which was established in 2002, and which comprises of a dedicated 20,000 sq. m. storage area located close to Monaco. It provides a range of services including customs clearance, storage, order picking, delivery, and collection. This is located approximately 20 minutes drive from Monaco[7].

2.3.42 In 2004, approximately 4,800 goods vehicles handled approximately 24,000 items. This represented a 33 per cent increase over 2002. Greater use of electric vehicles is planned as well as greater use of information systems. The option is open to customers to collect their goods from the MoCC. The Principality of Monaco may decide to further reduce the weight limit

[7] Evaluation environnementale du Centre de Distribution Urbaine de marchandises de Monaco. Final report August 203 Prepared by INTERFACE TRANSPORT for ADEME (ref: Marché n° 0203013 du 22 Octobre 2002) & Patier D. (2005) New concept and organisation for the last mile: The French experiments and their results. Presented at City Logistics 2005, Langkawi, Malaysia. Final version of the paper published in 'Recent Advances in City Logistics' ED. Taniguchi E and Thompson R published 2006, Elsevier

for goods vehicles entering Monaco in the future, which would result in a greater number of lighter vehicles having to use the consolidation centre[8].

Financial Issues

2.3.43 The costs of the MoCC are shared between the Principality of Monaco which provides financial aid and free warehouse space to the MoCC operator, the MoCC operator which provides drivers and handling staff as well as the MoCC vehicles, and the receivers and deliverers of goods who pay for deliveries, which contributes towards the cost of operating the MoCC.

2.3.44 Customers of the MoCC were required to pay €2.30 per 100kg. Originally it was anticipated that receivers would pay this charge but in practice the additional delivery cost within Monaco has normally been passed to the transport company making the delivery to the MoCC, and it is understood that the company has in turn passed this to the final customer.

2.3.45 However, the MoCC does not pay for itself. The Principality of Monaco provided a subsidy of 86,000 Euros in 2002, which equates to a subsidy requirement of approximately 115,000 Euros in 2007 prices.

Other Impacts

2.3.46 The Monaco scheme has resulted in a more efficient urban delivery system for the Principality of Monaco. Even though the Monaco scheme mostly makes use of diesel–powered goods vehicles, it has still resulted in the following energy and emission improvements for urban freight:

- 26 percent reduction in fuel consumption by goods vehicles per year;
- 30 percent reduction in local atmospheric pollution;
- 30 percent reduction in vehicle noise pollution;
- 38 percent reduction in traffic congestion; and
- 42 percent reduction in the space used by vehicles for deliveries.

Stockholm (Hammarby) Consolidation Centre

Background

2.3.47 This Stockholm (Hammarby) Consolidation Centre (SHCC) was active from 2001 to 2004, for the duration of a redevelopment project in the former docklands and industrial area of Stockholm. While the redevelopment will not be complete until 2010, the main materials movements were concentrated in the three years in which the site was open. When complete, there will be 8,000 new apartments as well as other facilities (e.g. schools, commercial premises) and an estimated 30,000 people will live and work in the redeveloped area.

Operations Characteristics

2.3.48 The SHCC offered 3,500 sq. m. of storage indoors and a further 4,000 sq. m. outside and was located adjacent to the construction site, acting as a focal point for all delivery vehicles coming to the site. If flows had not been coordinated, 700 tonnes of materials would have been

[8] Patier D. (2005) New concept and organisation for the last mile: The French experiments and their results. Presented at City Logistics 2005, Langkawi, Malaysia. Final version of the paper published in 'Recent Advances in City Logistics' ED. Taniguchi E and Thompson R published 2006, Elsevier

delivered into the site by 400 vehicles each day, with an average consignment size of 1.75 tonnes.

2.3.49 With the SHCC, flows of materials were consolidated for 22 different delivery areas within the site, with two trips per day being made to each delivery area. A sub-contractor was employed to run the SHCC and the delivery vehicles, and to take care of the administrative issues. 10 people were employed and five goods vehicles and three fork lift trucks were used.

2.3.50 In addition to the physical consolidation centre, a web-based calendar was developed so that contractors could log the scheduled arrival times of their deliveries, to improve vehicle delivery times in each section of the construction site. This calendar also included full-load deliveries, but it was not always used by contractors so was not fully effective. A traffic coordinator was also employed to try to minimise traffic congestion impacts within the site.

Financial Issues

2.3.51 Originally, 95 per cent of the project's funding came from the City of Stockholm authorities (including EU funds through the CIVITAS Trendsetter programme). The total budget for the 5-year project was 20 million SEK (approx 2 million EUR). The funding from the EU amounted to 2.8 million SEK (280,000 EUR).

2.3.52 There was a charge to the companies that delivered the goods. However, the transport charges were kept very low, since the main aim of the scheme was to reduce vehicle movements and their associated impacts. As a consequence, the charges related mainly to materials storage and value-added activities. To prevent the SHCC being used for long-term storage, charges were levied on a daily basis from Day 5 onwards. The majority of the income was derived from the temporary storage of materials and the provision of value-added services such as timed deliveries, part deliveries or goods delivered by crane into the building.

2.3.53 The city sponsored the consolidation service at the level of 95% in the beginning, but once operational, the benefits of the SHCC to its users became better understood and the charges were raised. The result was that the public share of funding was reduced to 40 per cent by the end of the project, suggesting that there was an increasing willingness to pay for the service.

2.3.54 The viability of the consolidation centre was crucially dependent upon support from the private sector, and in this regard, seems to have been more successful than a number of other schemes that have been 'imposed' on users.

2.3.55 It is in this area of value-added logistics activities that there is the greatest potential for private sector participation and commercial operation. For example, materials storage in the SHCC was much more secure than out on site, so this helped to reduce the theft and weather damage problems[9].

Other Impacts

2.3.56 The project objectives identified for this scheme were fulfilled, although the 80 per cent reduction in small volume, direct deliveries was achieved only at peak times. The principal impacts were:

- a significant reduction in energy use, CO_2 and other air-borne pollutants;
- a significant reduction in noise levels;
- a reduction in vehicle distances from 64 kilometres a day to 26 kilometres a day per vehicle;

[9] Personal communication from contributor/author of evaluation report and discussions with representative of City of Stockholm

- a percentage increase of vehicle load factor from approximately 50% to 85%; and
- a reduction on stop time from approximately 60 minutes per trip to six minutes.

2.3.57 As can be seen, there were significant operational and environmental benefits. The reduced vehicle activity and faster delivery times combined to provide a 90 per cent reduction in CO_2 emissions. Analysis of the construction process suggests that the SHCC was instrumental in achieving on-time completion of new buildings, and there were fewer problems than normal with regards to damaged or stolen goods.

2.4 Summary Appraisal of the Consolidation Centres

2.4.1 This review of six consolidation centre case studies has revealed that the concept has been shown to work operationally in a number of different scenarios. In general, consolidation centre customers appear to have positive experiences of the service that they receive, and there is evidence that consolidation centres can enhance supply chain performance, for example with the financial benefits to retailers at Meadowhall and the ability to meet tight timescales for the construction project in Stockholm.

2.4.2 Table 2.3 overleaf shows the key characteristics and performance of the six consolidation centres reviewed in summary form.

Table 2.3 – Key characteristics & Performance of Case Studies

Case Study	Bristol (Broadmead)	Sheffield (Meadowhall)	London	Heathrow Airport	Monaco	Stockholm (Hammarby)
Location	UK	UK	UK	UK	Overseas	Overseas
Sector	Retail	Retail	Construction	Retail	All	Construction
Status	Active	Active	Closed	Active	Active	Closed
Terms of use	Optional	Optional	Optional	Optional	Compulsory	Compulsory
Distance from location served	10 miles	400 metres	3 miles	10 miles	Adjacent to area served	Adjacent to construction site
Size	500 sq. m	2,500 sq. m.	5,000 sq. m.	2,300 sq. m.	1,300 sq. m.	3,500 sq. m inside and 4,000 sq. m. outside
Main Objectives	Reduce congestion and related emissions	Reduce operating costs, improve sales and reduce loss/theft	Reduce traffic congestion and vehicle emissions	Reduce traffic congestion and disruption	Reduce traffic congestion and disruption	Reduce traffic congestion & emissions
Services offered	Consolidation, delivery when required plus value added services	Consolidation, delivery when required plus value added services	Consolidation, delivery when required plus short term storage	Consolidation, delivery when required plus value added services	Consolidation, delivery when required plus value added services	Consolidation, delivery when required plus short term storage
Consolidation Centre operator	Private company	Private company	Private company	Private company	Private company	Private company
Staff level	Staffing information unavailable	6 staff plus extra staff at peaks as needed	16 staff	20 staff	8 staff	10 staff
Traffic benefits	• 75% reduction in delivery vehicle movements for participating retailers • 6,945 fewer vehicle trips • Saving of 178,000 vehicle kilometres	• Reduced the number of vehicles delivering to shopping centre but not quantified	• 68% reduction in construction vehicles for deliveries to sites served by consolidation centre • Better control over sizes of vehicles entering City of London	• 66% reduction in the number of vehicle movements to airport terminals	• 38% reduction in traffic congestion • 42% reduction in space used by vehicles for deliveries	• Vehicle load factor improved from approx. 50% to 85% • Vehicle kilometres per day reduced from 64 km to 26 km • Vehicle delivery time reduced from approx. 60 minutes to 6 minutes • The 80% reduction in small volume, direct deliveries was achieved only at peak times
Environmental benefits	Savings of: • 20.3 tonnes of CO2 • 660 kg of NOx	Reported that consolidation centre reduces vehicle movements to store	Approx. 75% reduction of CO2 emissions for deliveries from consolidation centre to	Reported savings consist of: • 22 tonnes of CO2 per year	Reductions for deliveries from consolidation centre to site of: • 26% in fuel	Reductions for deliveries from consolidation centre to site of: • 90% in energy use

Case Study	Bristol (Broadmead)	Sheffield (Meadowhall)	London	Heathrow Airport	Monaco	Stockholm (Hammarby)
	• 19.7 kg of PM10 • 12.9 tonnes of cardboard and plastic collected and recycled	thereby helping to reduce pollution in surrounding area	sites	• 70 kg of carbon monoxide per year • 197kg of NO2 per year • 14.5kg of particulates per year	consumption • 25% in NOX • 35% in CO • 26% in SO2 • 26% in CO2 • 30% in local atmospheric pollution • 30% in vehicle noise pollution	• 90% in CO2 emissions • 90% in NOx • 90% in PM • 55 dB(A) exceeded 260 times/day compared with 360 times/day without consolidation centre
Commercial benefits	• 100% on-time deliveries • No reports of losses or damage to stock • Retailers typically saving more than 20 minutes per delivery • 38% of retailers can spend more time with customers • 45% of retailers say improved staff morale • 94% of retailers would recommend FCC to other retailers	• Up to 10% increases in sales turnover reported by retailers • Reduced staffing costs • One retailer reduced store refit time by two days and reduced impact of lost sales	• 120 minutes average reduction in journey time for contractors • Up to 15% reduction of materials waste - reduced damage, less shrinkage • 97% delivery reliability • Increased productivity of labour force by up to 30 mins/day (potentially allowing a 6% reduction in labour force required)	• A saving of up to £5000 in fuel bills per supplier per annum • Time savings of up to £250k per annum	Not covered in scheme reporting but improved efficiency of goods distribution is an objective of consolidation centre	• Instrumental in achieving on-time completion of new buildings • Fewer problems than normal with damaged or stolen goods.
Cost	Operating cost in 2007/8 - £459,000	Not available – commercially confidential	Total project cost £3.2 million	Five-year contract worth £2 million per year	Total operating costs 412,000 euros (direct subsidy of 86,000 euros received). Estimated to be 115,000 euros in 2007 prices.	Total budget for the 5-year project €2m. EU funding €0.28m
Public / private funding ratio	Operating costs - 62% public : 38% private	Capital and operating costs - 100% private	Capital and operating costs - 58% public : 42% private	Information not available	Operating costs were 20% public: 80% private.	Operating costs - 40% public : 60% private

2.4.3 One of the main issues that remains largely unresolved surrounds the financial viability of consolidation centres. Those that operate on a voluntary basis and are not controlled by a single landlord all appear to require public funding, despite the promotion of value-added services as part of the operating arrangements. Only Meadowhall in Sheffield claims to break even financially.

2.4.4 Consolidation centre schemes are more likely to break-even if participation can be made compulsory through planning or lease agreements, but this can be difficult to achieve at present in most cases. Particular attention is required to ensure that private sector contributions are maximised, and that those who benefit from the consolidation centre pay for its operation.

2.5 Emerging Key Issues Affecting Consolidation Centres

2.5.1 There are a variety of different types of consolidation centre and the factors affecting those centres differ depending on the individual aims. The following key factors seem to influence the success of a consolidation centre:

- objectives – consolidation centres can have single or multiple objectives, from meeting environmental targets to modal shift in the type of transport used;
- financial viability – in spite of efforts to encourage financial self sufficiency, in most cases consolidation centres require operating subsidy. However introducing value added services can reduce a scheme's dependence on public support;
- location – consolidation centres vary in terms of their proximity to the area served, type of location and proximity to the transport network;
- spatial coverage – some consolidation centres are purposely developed to serve a single site whereas others may be regional hubs serving a much larger hinterland;
- range of goods handled – examples of the types of goods handled at consolidation centres range from high street retail goods to construction materials;
- transport modes – many consolidation centres utilise road transport, but increasing importance is being attached to initiatives introducing intermodal facilities between road and rail, where the location permits;
- flexibility of operations – while some consolidation centres operate on fixed schedules, others may be geared towards on-demand operations;
- ownership – consolidation centres may be privately or publicly owned and involve either a single operator or a joint venture, such as a Freight Quality Partnership; and
- compulsory/voluntary – some schemes can be operated on a voluntary basis or through compulsion.

2.5.2 There is a challenge therefore to identify the right set of circumstances where a consolidation centre scheme would be appropriate in delivering the benefits that these facilities have achieved, as seen in the case studies reviewed. One of the most substantive parts of this challenge is to find the formula where the facility is able to operate successfully commercially with the least requirement for on-going financial support.

3 STAKEHOLDER CONSULTATION

3.1 Background

3.1.1 The stakeholder consultation was restricted to only a small number of key stakeholders. The survey was based on a limited number of targeted telephone interviews with businesses and organisations that had been identified early in the commission and discussed/agreed with SEStran.

3.1.2 A standard questionnaire was used based on the 2005 Urban Consolidation Centres Study (a copy of this questionnaire can be found in Appendix A). This considered responses in terms of the requirement for a consolidation centre, potential locations and markets which can be served and what facilities and functions a consolidation centre can or should be able to undertake.

3.1.3 The intention was to attain a deeper understanding of the main issues from a more detailed discussion than a superficial familiarity of these drawn from a large number of interviews based on high-level questions. In addition, the mixture of qualitative and quantitative information encouraged respondents to raise issues important to them, but which might otherwise have been overlooked.

3.2 Consultation Responses

3.2.1 The key stakeholders successfully contacted by telephone are listed in Table 3.1. The Table includes the sector to which each business interviewed belongs, their location and the date of the interview. This gives a total sample of 9 successful interviews, three per sector.

Table 3.1 – Consultation Respondents

Respondent	Contact Name	Location	Sector	Date of Interview
Scottish Retail Consortium	Fiona Moriarty	Gullane, (East Lothian)	Retail	6 October
AWG Property Ltd	Tony Donnelly	Edinburgh	Retail	6 October
Bullet Express	David McCutcheon	Motherwell	Freight Operating Company	6 October
Morgan Est	Neil Robinson	Livingston	Construction	6 October
Morrison Construction Services	Ewen Macdonnell	Falkirk	Construction	6 October
Balfour Beatty	Lyndsey Martindale	Edinburgh	Construction	21 October
ASDA	Jerry Dawson	Grangemouth	Retail	21 October
Freightliner	Kay Walls	Coatbridge	Freight Operating Company	7 October
Wincanton	John McKeown	Dunfermline	Freight Operating Company	7 October

3.2.2 As can be seen, the respondents are drawn from a wide geographical base across central Scotland. Unsurprisingly, given the variety of locations and sector of the businesses and organisations surveyed, there was also a large range of views.

3.2.3 The most important of these were:

- one of the freight operating companies interviewed said that they would be very keen to see a consolidation centre, possibly situated at Eurocentral, believing that it would reduce the amount of unproductive waiting time currently experienced for specific time slots at various regional distribution centres, including Tesco's at Livingston;
- another freight operating company is temporarily operating its own consolidation centre in Newcastle, which serves the south east of Scotland. However the company expressed an interest in a consolidation centre closer to its base in the Edinburgh – Dunfermline area from which to operate;
- the Scottish Retail Consortium (SRC) suggested that it would be unlikely that large retailers such as Tesco and John Lewis would utilise a consolidation centre as they have a built-for-purpose sophisticated distribution system already in place. This view was borne out during our interview with ASDA, who see no real benefit of such a facility, either now or in the future, because they already have a dedicated efficient storage and distribution network;
- however, the SRC noted that smaller retail outlets in the central Edinburgh area may well see benefits of having a facility close to Edinburgh, especially where reduced stock on premises releases staff and building resources, but they may need to be informed in detail of the specific benefits of such an arrangement;
- all three of the construction companies interviewed indicated that potentially, at some undefined period in the future, a consolidation centre would be useful. One mentioned a possible site could be Livingston as this area is close to the motorway network, the other two would only specify that it should be close to potential construction sites in the future;
- a major attraction to the construction companies of a consolidation centre is the ability of this kind of facility to synchronise building operations with the delivery of materials on a just-in-time or an on-demand basis, i.e. they can be delivered when and where the company needs the deliveries; and
- although a number of respondents, especially in the construction and freight operations sectors, expressed some support for a rail – road modal interface at any potential future facility, and one freight operating company has recently started using rail services at Eurocentral, they nevertheless stressed the importance of road access to the final destination.

Other issues raised

3.2.4 Clearly from the discussions with some representatives of the retail sector, deliveries were dependant on a more time specific schedule, with preferences for either night or very early morning deliveries. On the other hand the construction sector's delivery operating system favoured a just-in-time (on demand) approach. This suggests that a consolidation centre procedure would benefit from some flexibility in operations, with, for example, a just-in-time approach to deliveries to construction sites during the day with a scheduled approach to deliveries at other times.

3.2.5 However, the largest retail companies (such as ASDA and Tesco) already have a relatively highly tuned and sophisticated distribution network in place, and as far as ASDA is concerned, a separate consolidation centre anywhere in central Scotland would be of little benefit, either now or sometime in the future.

3.2.6 The major benefit of a consolidation centre quoted by the freight operating companies was the ability to fully utilise vehicle capacity. This has made a huge difference to the financial performance of one company interviewed, resulting in annual savings of 15% to 18% in delivery costs.

3.2.7 A further benefit suggested was that after delivery to a consolidation centre, there may be potential to carry backloads from the facility to, for example, a regional distribution centre. This would reduce the amount of empty running that currently occurs and presents an opportunity for freight operating companies to utilise their transport resources more efficiently. However, this does depend on the consolidation centre offering the possibility of long term storage as an additional service to its mainstream business.

3.2.8 However, those freight operating companies that are rail activity based tend to be already locked into a rail – lorry structured hub-and-spoke system, usually using independent hauliers for the final delivery leg to the freight destination. The use of containers for the transference of freight limits the appeal of a consolidation centre, the operation within which would require considerable extra handling and associated costs. This characteristic would therefore seem to restrict the ability of a consolidation centre from fully operating as a Dryport, especially if the latter incorporates rail – road freight transhipment. This is because a Dryport would, by definition, require significant container throughput movement.

3.2.9 Nevertheless, it should be noted that this does not preclude the possibility of a site accommodating both a Dryport and a consolidation centre where the two functions would be kept separate, but sharing the advantages of such a site to connect quickly and relatively seamlessly with the regional transport distribution network.

3.3 Preferred Site Location

Locations identified from the Stakeholder Support

3.3.1 Clearly there is considerable interest expressed by the small sample of businesses and organisations interviewed in the establishment of a consolidation centre, if not immediately then some time in the future. With the diversity of respondents, the preferred location of such a facility is bound to vary to some extent. However, the apparent preferred locus for a consolidation centre, based on the composite response obtained during our discussions, is formed by a triangle linking Eurocentral (Mossend area) / Coatbridge area in the south west, up to the Falkirk – Grangemouth region, and eastwards encompassing Livingston and up to the western fringes of Edinburgh itself, including Newbridge. It was noted during the consultation that there is already a similar facility at Eurocentral, which can be classed strictly as a regional distribution centre, and so probably reduces the requirement of a similar resource close by.

3.3.2 Within the preferred region described above, it would appear from the consultation that, particularly for the retail sector and freight operating companies, the favoured location would be an area in close proximity to Livingston, which would have some advantage in terms of time and distance over the Falkirk – Grangemouth area to serve the Edinburgh – Lothian – Fife region.

3.3.3 In terms of a preferred location for a facility for the construction industry, this is, as noted above, dependent on where the major construction sites are (and one of the biggest at the moment is the M74 extension) and the (often strict) client requirements associated with these. However, there is a distinction made by one large construction firm between major construction sites and ‘civils’, or on-going civil engineering works, which relate largely to on-going maintenance contracts. For major construction projects, Grangemouth was the preferred location as being as central to the region as possible with the added bonus of being close to a major port that can

potentially be used for importing materials. In the case of 'civils', different construction companies often have different contract terms, so it is unlikely that any one site suits all major construction companies simultaneously.

Locations Identified from Previous Studies

3.3.4 In the SEStran Freight Routing Study (FRS) which was completed in mid 2009 a number of sites were identified as potential locations for multi-modal freight hubs. This study linked directly back to the Scottish Multi-Modal Freight Locations Study, undertaken by Scott Wilson on behalf of the Scottish Government, Transport Scotland and Scottish Enterprise. This was a national freight study which has identified a number of locations/options across Scotland for providing multi-modal freight facilities.

3.3.5 A number of these sites could be used as potential locations for a Consolidation Centre in and around the SEStran area. Consequently, from a review of the emerging multi-modal freight hubs strategy the Scottish Multi-Modal Freight Locations Study developed, the FRS identified 5 potential locations for a new facility, either within the SEStran boundary or adjacent to the area. These were:

- Option 1 – Leven/Methil Dock;
- Option 2 – Rosyth;
- Option 3 – Grangemouth/Falkirk;
- Option 4 – Coatbridge; and
- Option 5 – Lockerbie.

3.3.6 The first three options above are within SEStran while the other two are adjacent to the area. There are also synergies with some of the interventions from the Scottish Transport Projects Review (STPR)[10]. It was considered appropriate to include all of the above in an initial long-list of potential options/locations.

Identified Locations

3.3.7 From the above sections, some sites were identified from stakeholder consultation and some from previous studies. This produced a total list of six sites when combined which could be taken forward to the analysis as follows:

- Livingston;
- Grangemouth/Falkirk;
- Rosyth;
- Coatbridge;
- Leven/Methil Dock; and
- Lockerbie.

3.3.8 Of the above, Livingston is the only new location which was suggested from the consultations while the others were previously identified in the FRS.

3.3.9 However, not all sites might have enough demand for freight consolidation and this needs to be considered. Hence, in order to objectively look at those sites which realistically have enough demand the observed freight flows for each are examined in the next chapter to determine which have sufficient demand for a consolidation centre.

[10] Strategic Transport Projects Review, Report 4: Summary, Transport Scotland, 2008

4 EXISTING FREIGHT PATTERNS AND POTENTIAL DEMAND

4.1 Introduction

4.1.1 Scott Wilson developed the SEStran Freight Model (SESFM) for the Freight Routing Study undertaken on behalf of SEStran. This used detailed consultation and data collection in order to produce the model which is capable of examining freight movements across the network. It was therefore considered beneficial to use as much data from the SEStran Freight Model as possible in order to identify freight movements across the SEStran strategic road network. From this the model was developed at a more refined local level to cover key points of interest such as the likely location of a consolidation centre serving the SEStran area.

4.1.2 Details of the developed SESFM, including the calibration and statistical goodness-of-fit tests, can be found in the SEStran Freight Routing Study report[11]. This Chapter summarises the results from the freight movements and shows how the demand analysis was used to identify the potential locations for a consolidation centre.

4.2 Data Processing

4.2.1 Different areas of Scotland have distinct freight characteristics, patterns of movements and priorities. This means the data collected for the freight demand analysis has recognised the specifics of different regions of Scotland regarding the primary economic sectors. We have applied the enhanced SEStran Freight Model to establish base demand at 2007 levels and future demand levels using two projected scenarios, low growth and high growth scenarios.

4.2.2 The case studies reviewed in Chapter 2 showed that consolidation centres only effectively serve two sectors, the retail sector and the construction industry. Therefore the processed data relates specifically to those two sectors.

4.3 Presentation of Data

4.3.1 A significant element of the data provided is commercially sensitive and hence the surveys were carried out in accordance with the Market Research Society Code of Conduct (MRSCC) and the Interviewer Quality Control Scheme (IQCS). This states that all information provided by stakeholders would be treated in strict confidence. This is important since it facilitates a free and candid exchange of information and views from stakeholders, including operators and end-users, which would otherwise not have been available.

4.3.2 Consequently, this information cannot be presented at a very detailed level, but it is possible to present information in an outline format and aggregated for the main areas. SESFM was used under these conditions of operation. For future levels of freight demand and traffic patterns estimated in the study, flows at the aggregate level are shown in order to maintain the commercial sensitivities requested by stakeholders who donated data.

4.4 Future Estimates of Freight Demand in SEStran

Test Years

4.4.1 In order to assess the changes of freight movements regarding retail and construction in the future, a horizon year of 2020 was considered as being a suitable future analysis year. In particular, two different scenarios were appraised:

[11] Freight Routing Study Final Report, Scott Wilson Ltd, June 2009

- 2020 with low level of freight growth; and
- 2020 with high level of freight growth.

4.4.2 These two scenarios are consistent with the scenarios appraised in the National Scottish Multi-Model Freight Location Study[12].

Overall Freight Demand

4.4.3 Before looking at individual SEStran areas, it is worth looking at the overall changes in the demand for freight, in terms of the retail and construction sectors outlined in Section 4.2.

4.4.4 Table 4.1 and Table 4.2 below and overleaf show the estimated changes by 2020 for both low and high growth scenarios. Table 4.1 shows the levels of freight within the SEStran area (i.e. internal only demands) or having either an origin or destination in the SEStran area (i.e. internal-to-external or external-to-internal movements). Table 4.2 overleaf shows the through movements (i.e. external-to-external freight tonnages), which are for the rest of Scotland.

Table 4.1 – Forecast Tonnage per Sector (Single Trips) – SEStran-related Tonnages Only (i.e. Internal – Internal, Internal – External & External – Internal)

	2007		2020 Low Growth			2020 High Growth		
	Tonnes ('000s)	Proportion of grand total	Tonnes ('000s)	Proportion of grand total	Growth Rates	Tonnes ('000s)	Proportion of grand total	Growth Rates
Retail	8,792	16.03%	11,526	16.58%	1.31	13,128	17.24%	1.49
Construction	16,940	30.89%	21,968	31.60%	1.30	24,119	31.66%	1.42
Sub-total	25,732	46.93%	33,494	48.19%	1.30	37,247	48.90%	1.44
Total other	29,100	53.07%	36,015	51.81%	1.27	38,923	51.10%	1.39
Grand total	**54,832**		**69,509**		**1.28**	**76,170**		**1.41**

4.4.5 In effect, the total potential freight tonnage applicable to a consolidation centre in the SEStran area is represented by the sub-total of the retail and construction volumes. This is 25.7 million tonnes for 2007, rising to 33.5 million tonnes by 2020 in the low growth scenario and 37.2 million tonnes for the 2020 high growth scenario.

4.4.6 Although the amount of freight moved by the retail and construction sectors varies, total future forecasts are tied back to the Government's national indices for low and high growths.

[12] Scottish Multi-Model Freight Location Study, Scott Wilson Ltd, June 2009

Table 4.2 – Forecast Tonnage per Sector (Single Trips) – External – to – External (i.e. through trips)

	2007		2020 Low Growth			2020 High Growth		
	Tonnes ('000s)	Proportion of grand total	Tonnes ('000s)	Proportion of grand total	Growth Rates	Tonnes ('000s)	Proportion of grand total	Growth Rates
Retail	6,304	6.38%	8,264	6.47%	1.31	9,418	6.70%	1.49
Construction	39,203	39.69%	50,846	39.80%	1.30	55,824	39.73%	1.42
Sub-total	45,506	46.07%	59,110	46.26%	1.30	65,242	46.44%	1.44
Total other	53,270	53.93%	68,656	53.74%	1.27	75,255	53.56%	1.39
Grand total	**98,777**		**127,766**		**1.28**	**140,498**		**1.41**

4.4.7 As observed from the Tables above, the estimated growth rates are much the same for retail as for construction, although slightly higher for retail for the high growth scenario assumption. However actual volumes shifted are much higher for construction materials than retail goods for freight trips with a SEStran origin or destination (and for trips with a SEStran origin and destination), and for freight passing through the SEStran area. These growth rates for both the low and high growth scenarios are consistent with the increase in freight forecasted in the November 2005 Government National Road Traffic Forecasts.

4.4.8 In all cases, retail and construction together make up just less than half of freight movements by volume within, to, from and through SEStran.

Forecast by Local Authority and RTP

4.4.9 The 2020 freight trip distributions for both low and high growth scenarios are illustrated in Table 4.3, with the 2007 figures for comparison. There is little difference in the proportion of freight distributed between different areas and for the same areas between the 2020 low growth and high growth scenarios.

Table 4.3 – 2020 Forecasts by Distribution ('000 Tonnes)

Local Authority Area/RTP	Base 2007	2020 Low Growth		2020 High Growth	
	Proportion	Proportion	Growth	Proportion	Growth
Edinburgh	18.5%	18.47%	1.302	18.46%	1.447
East Lothian	16.5%	16.50%	1.304	16.60%	1.460
Mid Lothian	5.9%	5.87%	1.299	5.83%	1.437
West Lothian	4.2%	4.21%	1.297	4.16%	1.428
Borders	5.3%	5.34%	1.302	5.35%	1.449
Falkirk	27.0%	27.05%	1.302	27.06%	1.449
Clackmannanshire	3.3%	3.30%	1.297	3.26%	1.424
Fife	19.3%	19.27%	1.302	19.27%	1.448
Total SEStran	**100%**	**100%**	**1.302**	**100%**	**1.448**
SPT	53.4%	53.44%	1.300	53.54%	1.439
SWETRANS	8.72%	8.71%	1.298	8.68%	1.429
TACTRAN	15.46%	15.44%	1.298	15.38%	1.428
NESTRAN	15.69%	15.68%	1.299	15.66%	1.433
HITRANS	6.73%	6.73%	1.300	6.74%	1.438
Total SEStran / External	**100%**	**100%**	**1.299**	**100%**	**1.435**

4.4.10 The results show that for the total SEStran area, the growth rate between 2007 and the 2020 low growth scenario is approximately a 30% increase, and between 2007 and 2020 high growth scenario is a 45% increase.

4.4.11 Therefore, as Tables 4.1 and 4.2 indicate, the volumes of both construction materials and retail goods are increasing between 2007 and 2020, both in relative terms with other freight sectors and in absolute terms, which suggests that the demand for a consolidation centre in the SEStran area is likely to increase over the next 10 years.

4.5 Overview of the Incremental Elasticity Model

4.5.1 In order to estimate the potential demand for a Consolidation Centre, a standard Incremental Elasticity Model[13] (IEM) was used, which took the form of:

$$\text{Incremental Change} = (GC_{option} / GC_{base})^{E}$$

Where:

- GC_{option} is the generalised cost including the consolidation centre option being considered;
- GC_{base} is the generalised cost in the base case (i.e. without the Consolidation Centre);
- GC consists of the Time (including potential delays due to congestion), Distance, Interchange and Delivery Cost. Weighting coefficients of 2.7, 1.9 and 1.0 were used for time, distance and interchange, respectively, in order to convert the units into generalised costs; and
- E is the elasticity and a standard value of -0.9 was used for all options. Values for weighting coefficients and elasticity were sourced from academic research papers[14].

4.5.2 Freight demand estimation was sourced from matrices from the SEStran Freight Model, which were sectorised to a local authority level outside of Edinburgh and to a RTP level outside of SEStran. The above model was then applied to retail and construction freight demand, for both 2020 low growth and high growth scenarios.

4.5.3 The results of each analysis were reduction factors for measured origin-destination (OD) pairs of freight movements in the model. The base demand matrices in the model were factored down by the estimated transfer reductions, but some of the OD pairs were manually constrained in order to ensure that only the type of trips expected to use the Consolidation centre were represented (this also gave a conservative estimate of the network-wide impacts and associated benefits).

4.5.4 Using the estimates of freight transferred to the consolidation centre and base journey times and distances, HGV-kilometres and HGV-hours saved were calculated. These were then used to derive the monetised value of other benefits such as time and vehicle operating costs (VOC) savings. There would be other benefits and costs, but these would be captured within a full Transport Economic Efficiency (TEE) analysis which is outwith this study remit.

4.5.5 VOCs were estimated using the calculated annual veh-kms saved from the road network. Using values from WebTAG[15] and average default data, a monetised value of 8.2 pence per km was used to derive VOC benefits. Time benefits were estimated using an average value-of-time of £11.28 per hour, also sourced from WebTAG, and applied to the estimates of the veh-hrs saved.

4.5.6 Estimates of tonnage of freight using the consolidation centre were also used to forecast potential revenues for each option. Average data for charges were sourced from previous studies and experience.

[13] Enhanced cross-sectional models, Institute for Transport Studies, Leeds University, 1999
[14] Studies on GJT Functional Form, Institute for Transport Studies, Leeds University, 1995
[15] Web-based Transport Appraisal Guidance, Department for Transport, 2003

4.6 Locations Identified from the Demand Modelling

4.6.1 Six potential sites/locations were identified in the previous chapter of the report. Freight demand data from the SESFM was analysed to establish potential demand at each potential location for a consolidation centre serving the SEStran area. The main freight movements were identified by examining freight desire lines at a detailed zone level, within SEStran and between SEStran and externals regions.

4.6.2 When considering the six possible locations Lockerbie and Leven/Methil Dock were found to be too far away from the central SEStran area to serve as suitable locations for a consolidation centre. Furthermore, Rosyth was shown to have insufficient demand for such a facility. Therefore these three sites were discounted from further consideration. The demand analysis however suggested there could be sufficient demand at three key locations, which were Livingston, Grangemouth/Falkirk and Coatbridge.

4.6.3 The above remaining three sites are consistent with the consultation feedback which therefore provides an independent sense-check. However, since these sites have been identified solely on demand, it is still necessary to check they meet the planning objectives of producing area-wide benefits. This is carried out in the next section and Chapter 5.

4.7 Network Impact Appraisal

4.7.1 The results of the demand analysis are shown in Tables 4.4 and 4.5, respectively for Retail and Construction freight. These also show the changes in veh-kms and veh-hours (a negative means there is an increase, which is caused by the fact that using the consolidation centre can lead to an increase in journey times and/or distances for some OD movements).

Table 4.4 – Network-wide Impact of the Consolidation Centre Options (Annual Values) for Retail Freight

2020 Low Growth			
	Livingston	**Grangemouth/Falkirk**	**Coatbridge**
Transferred Tonnage	73,660	73,602	72,334
HGV Equivalent Removed	4,695	4,691	4,610
Veh-km Savings	15,246	15,058	-1,801
Veh-hours Savings	438	260	345
2020 High Growth			
	Livingston	**Grangemouth/Falkirk**	**Coatbridge**
Transferred Tonnage	83,849	83,783	82,338
HGV Equivalent Removed	5,344	5,340	5,248
Veh-km Savings	17,353	17,146	-1,885
Veh-Hours Savings	499	295	395

Table 4.5 – Network-wide Impact of the Consolidation Centre Options (Annual Values) for Construction Freight

2020 Low Growth			
	Livingston	**Grangemouth/Falkirk**	**Coatbridge**
Transferred Tonnage	215,227	210,318	208,663
HGV Equivalent Removed	13,346	13,041	12,939
Veh-km Savings	-33,520	-30,723	-216,705
Veh-hours Savings	33	-221	-1,561
2020 High Growth			
	Livingston	**Grangemouth/Falkirk**	**Coatbridge**
Transferred Tonnage	238,576	233,184	231,360
HGV Equivalent Removed	14,794	14,459	14,346
Veh-km Savings	-35,092	-33,597	-240,627
Veh-Hours Savings	56	-242	-1,730

4.7.2 The above tables suggest all three sites return similar results in terms of tonnage (and HGV equivalent) passing through the consolidation centre, with Livingston performing slightly better. However, results differ in terms of vehicle-kilometres and vehicle-hours savings. For retail freight, Livingston gives the best results, followed by Grangemouth/Falkirk. Coatbridge actually leads to a slight increase in vehicle-kilometres, due to this site being outside SEStran and therefore further away from the main attractors in the SEStran area. For construction freight, all three sites lead to an increase in vehicle-kilometres, particularly Coatbridge which also leads to an increase in vehicle-hours.

4.7.3 For all options, the consolidation centre is much more attractive for construction freight than retail freight, with transfer of construction freight being almost three times higher.

4.7.4 Clearly the above results are based on the assumptions applied in this study and also the definition of a consolidation centre.

4.7.5 While the network-wide impacts are useful in showing the potential benefits, it is also necessary to compare them against the costs of the consolidation centres before an emerging solution can be confirmed. Therefore, an economic appraisal of each location was carried out and is set out in the next chapter.

5 ECONOMICS AND OPERATIONS ASSESSMENT

5.1 Overview of Economic Appraisal

5.1.1 The economic appraisal method adopted is based on a Restricted Cost / Benefit Analysis (RCBA). The evaluation involves comparing estimated revenues and some other benefits (time savings, VOC reduction, reduction in sensitive lorry miles and carbon savings) against capital and operating costs. The aim is to identify those location options which support sustainable economic activity and return good value-for-money.

5.1.2 The central principle of the RCBA is to estimate the welfare gain from the transport investment, as measured by the "willingness to pay" for these improvements and the financial impact on the private sector transport operators. The RCBA does not include financial costs and benefits to the Government as these are quantified separately, and are outwith this study remit.

5.1.3 It should be noted that the emphasis on this appraisal is not to provide an exact, detailed, estimate but to allow for a comparison of the differences between the different options / locations. This helps us to understand which options are likely to perform better than others and hence are potentially worthy of taking forward for further, more detailed, study.

5.2 Capital and Operating Costs

5.2.1 The capital and operating costs associated with a consolidation centre were calculated, based on case studies of similar developments (a summary of the assumptions used can be found in Appendix B). A capital cost of £0.95m was estimated for a consolidation centre (all costs are in 2008 undiscounted price).

5.2.2 There has been a consistent bias in the calculation of capital costs for projects seeking Government funding resulting in a systematic under-reporting of the full costs. To compensate for this, an element of additional costs, estimated at 44% of the capital costs for standard *Civil Engineering* works was applied to the investment (sourced from HM Treasury Guidance), leading to a total capital cost of £1.37m.

5.2.3 Regarding operating expenditure, a total annual cost of £0.25m was estimated, again based on relevant case studies.

5.3 Assumptions

5.3.1 As noted in Chapter 4, some uncertainty surrounding forecast background economic growth which would affect the performance of the proposed consolidation centre has meant that high and low growth rate scenarios have been assessed in the appraisal.

5.3.2 The above calculations were incorporated into a spreadsheet-based RCBA which was used the following economic assumptions:

- a 60-year appraisal period, with a discount base year of 2002;
- an annual discount rate of 3.5% over the first 30 years falling to 3% for the remainder;
- an assumed opening year of 2014; and
- construction costs are assumed to be spread over 2 years, 2012 (40%) and 2013 (60%).

5.3.3 Clearly, if any option is taken forward for a more detailed study, then more information should be sourced and a Full TEE Appraisal would need to be carried out. However, for the purposes of this appraisal the above assumptions are considered to be suitable 'order-of-magnitude'

estimates. The analysis has been carried out testing costs (capital and operating) against revenue plus area-wide benefits (vehicle operating costs savings, time savings, reduction in sensitive lorry miles and carbon savings).

5.4 Summary of Appraisal Results

5.4.1 The results of the RCBA appraisal on monetised benefits and costs are summarised in Tables 5.1 and 5.2 (detailed annual benefits can be found in Appendix C). From these, it will be possible to gain an insight into the relative economic efficiency of the options.

Table 5.1 – Summary of Appraisal Results (Retail Freight)

	2020 Low Growth			2020 High Growth		
	Livingston	Gran/Falk	Coatbridge	Livingston	Gran/Falk	Coatbridge
Present Value of Benefits (PVB)	£4.61m	£4.54m	£4.07m	£5.90m	£5.81m	£5.21m
Present Value of Costs (PVC)	£6.09m	£6.09m	£6.09m	£6.09m	£6.09m	£6.09m
Net Present Value (NPV)	-£1.48m	-£1.55m	-£2.03m	-£0.19m	-£0.29m	-£0.89m
Benefit / Cost Ratio (BCR)	0.76	0.74	0.67	0.97	0.95	0.85
Revenue / Operating Cost (R/O)	0.82	0.82	0.80	1.05	1.05	1.03

Note: all monetary values discounted to 2002 prices

Table 5.2 – Summary of Appraisal Results (Construction Freight)

	2020 Low Growth			2020 High Growth		
	Livingston	Gran/Falk	Coatbridge	Livingston	Gran/Falk	Coatbridge
Present Value of Benefits (PVB)	£7.92m	£7.70m	£2.47m	£9.41m	£9.10m	£2.91m
Present Value of Costs (PVC)	£6.09m	£6.09m	£6.09m	£6.09m	£6.09m	£6.09m
Net Present Value (NPV)	£1.83m	£1.61m	-£3.62m	£3.31m	£3.01m	-£3.19m
Benefit / Cost Ratio (BCR)	1.30	1.26	0.41	1.54	1.49	0.48
Revenue / Operating Cost (R/O)	1.76	1.72	1.71	2.08	2.03	2.02

Note: all monetary values discounted to 2002 prices

5.4.2 The RCBA Appraisal results show the relative performance of the tested options in terms of the Benefit-to-Cost Ratio (BCR) and Net Present Value (NPV). As can be seen in the Tables, the consolidation centre in Livingston presents the highest BCR value, and offers the best returns to investment for both retail and construction freight, although the BCR for retail is just below 1. The results for the Grangemouth/Falkirk consolidation centre are slightly lower, and the Coatbridge consolidation centre returns the lowest BCR, due to the fact that it leads to significant increases in journey distances and times.

5.4.3 For both Livingston and Grangemouth/Falkirk, NPVs and BCRs are higher for construction freight than retail freight. For Coatbridge, retail freight leads to higher results than construction freight, but both return a negative NPV. This seems to confirm that consolidation centres for the retail market are more likely to necessitate public subsidies.

5.4.4 This is further confirmed by the revenue / operating cost ratio (R/O) which are below 1 or only slightly above 1 for the retail market, whereas the construction market returns much higher values.

6 DRYPORT / CONSOLIDATION CENTRE SYNERGIES

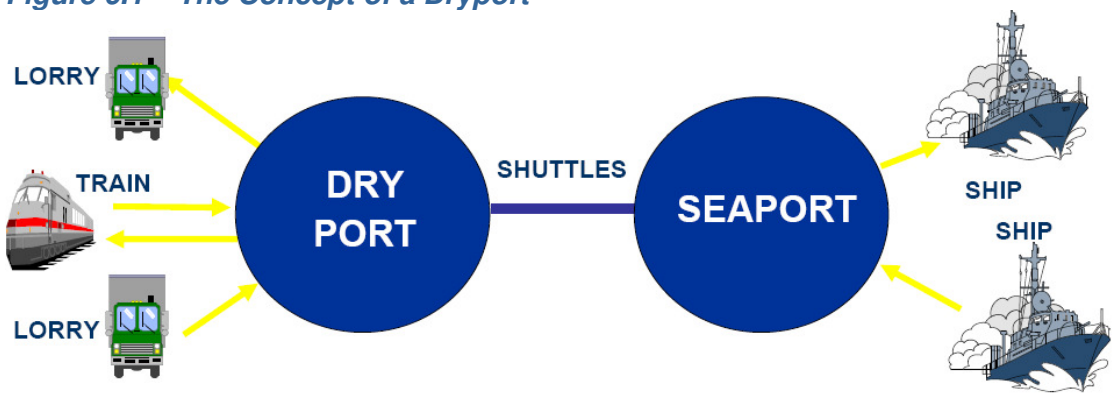
6.1 The Concept of a Dryport

Overview

6.1.1 Dryports are intermodal facilities that are located inland and which connect the rail and road network with sea ports in the region. They allow the movement of containers between modes and can help shift freight from road to rail and sea options. Furthermore, they can assist in relieving congestion at sea ports and provide these ports with support functions.

6.1.2 Dryports operate 24 hours a day in the transhipment of Twenty-foot Equivalent Units (TEUs). Essentially they can carry out all the functions and value added services of a sea port used for the shipping and forwarding of cargoes. These functions include customs clearance, storage, information exchange etc. These functions can save time and space at sea ports and reduce loading times. Figure 6.1 below shows the concept of a Dryport.

Figure 6.1 – The Concept of a Dryport



6.1.3 Dryports are designed to receive and deliver cargoes, distributing them by various means of transport, and in turn transfer freight from road to more environmentally sustainable forms of transport. Dryport facilities can be developed from existing suitable infrastructure, but the following three criteria should be fulfilled to meet the necessary requirements of a Dryport:

- the terminal should have a direct connection to a seaport by road or rail;
- the terminal should have a high capacity traffic mode; and
- the terminal should offer the same services and facilities as a sea port.

6.1.4 To ensure a Dryport operates effectively it should consolidate maritime goods into intermodal short and long distance transport flows for the collection and distribution of local, regional and international goods.

Dryports Research Project

6.1.5 SEStran are involved in the Dryport project, which is funded by the EU Interreg IVB North Sea Programme. The project partners are:

- South East Scotland Transport Partnership (SEStran), UK;
- Transport Research Institute, Napier University, UK;

- Essex County Council for Haven Gateway, UK;
- Babergh District Council, UK;
- Falkoping Kommun, Sweden;
- Port of Gothenburg, Sweden;
- Banverket Region Vastra Sverige, Sweden;
- Vagverket Region Vast, Sweden;
- Port of Zeebrugge, Belgium;
- Kamer van Koophandel West Vlaanderen, Belgium;
- Gemeente Emmen, the Netherlands;
- Provincie Friesland, the Netherlands;
- Provincie Drente (sub-partner), the Netherlands; and
- Gemeente Coevorden (sub-partner), the Netherlands.

6.1.6 Further information can be found at the Dryport website (http://www.tri-napier.org/current-tri-projects/current-tri-projects/dryport.html).

Previous Studies

6.1.7 Scott Wilson carried out the Freight Routing Study[16] for SEStran which, amongst other objectives, aimed to test the network impacts of potential locations for a Dryport serving the SEStran area. The five following sites were examined:

- Coatbridge;
- Leven;
- Lockerbie;
- Grangemouth/Falkirk; and
- Rosyth.

6.1.8 These potential locations also fitted in well with the findings and recommendations suggested in the Scottish Multi-Modal Freight Locations Study[17]. However, the results of the consultation exercise carried out for this study, and supported by the demand analysis, has identified that some of these suggested sites do not meet the performance criteria necessary for a consolidation centre. This is due to a number or reasons, most importantly there being insufficient demand. The Dryports at Coatbridge and Grangemouth/Falkirk were identified as being the most likely to generate adequate demand.

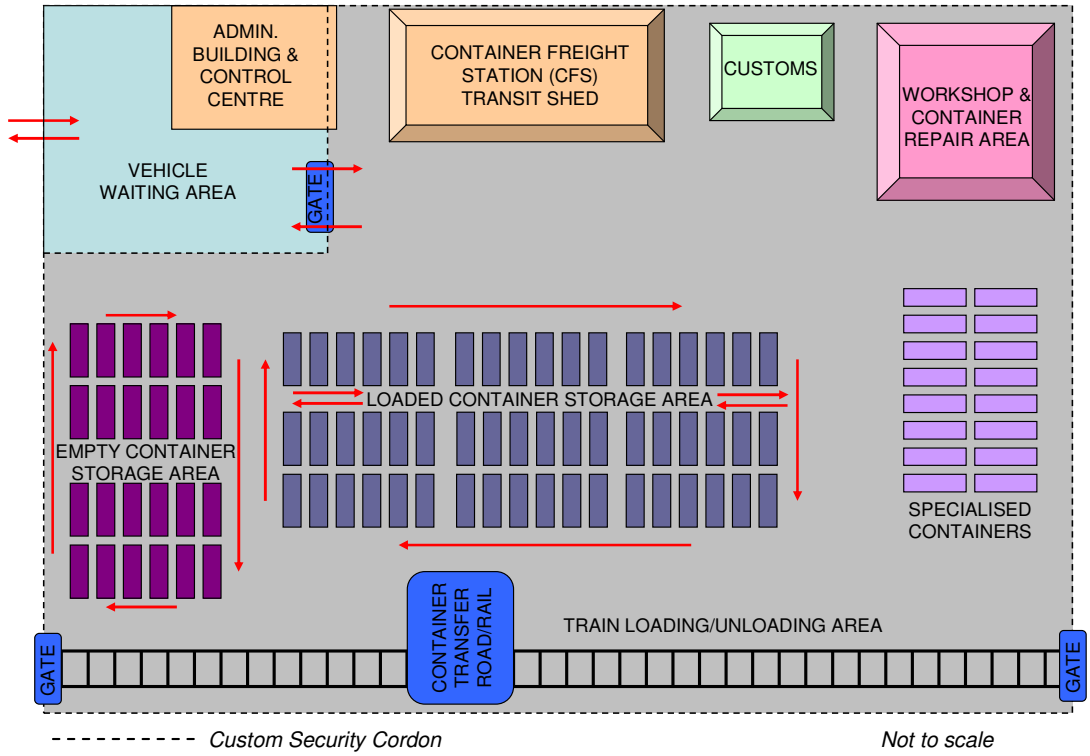
6.2 Potential Method of Operations

6.2.1 Although there will be synergies between a consolidation centre and a Dryport, they are in fact two separate operations. A consolidation centre largely serves the retail and/or construction industries, by aggregating client deliveries into different types of loads and using its own vehicles to distribute goods and materials to relatively local destinations on a frequent basis. On the other hand a Dryport will process container traffic much in the same way as a normal port, where each container is stored, checked and released for onward transportation, which is likely

[16] Freight Routing Study Final Report, Scott Wilson Ltd, June 2009
[17] Scottish Multi-Modal Freight Locations Study, Scott Wilson Ltd, June 2009

to be by a mixture of sea, rail or HGV, usually using a franchised transport operator or transport provided by the shipping company itself. Figure 6.2 below shows a general example of the layout and principal components of a rail-based Dryport.

Figure 6.2 – Dryport Layout



6.2.2 However, it is possible for a Dryport and a consolidation centre to operate on the same site. As can be seen in Figure 6.2, a Dryport generally includes a Container Freight Station (CFS), where more than one consignment are assembled or separated for onward transit[18]. This CFS in effect operates similarly to a consolidation centre, albeit only for freight transiting through the Dryport. This would suggest that there may be an opportunity to combine both facilities, with either the consolidation centre being included within the Dryport as part of the CFS, or with some level of segregation but with shared resources (staff and/or equipment).

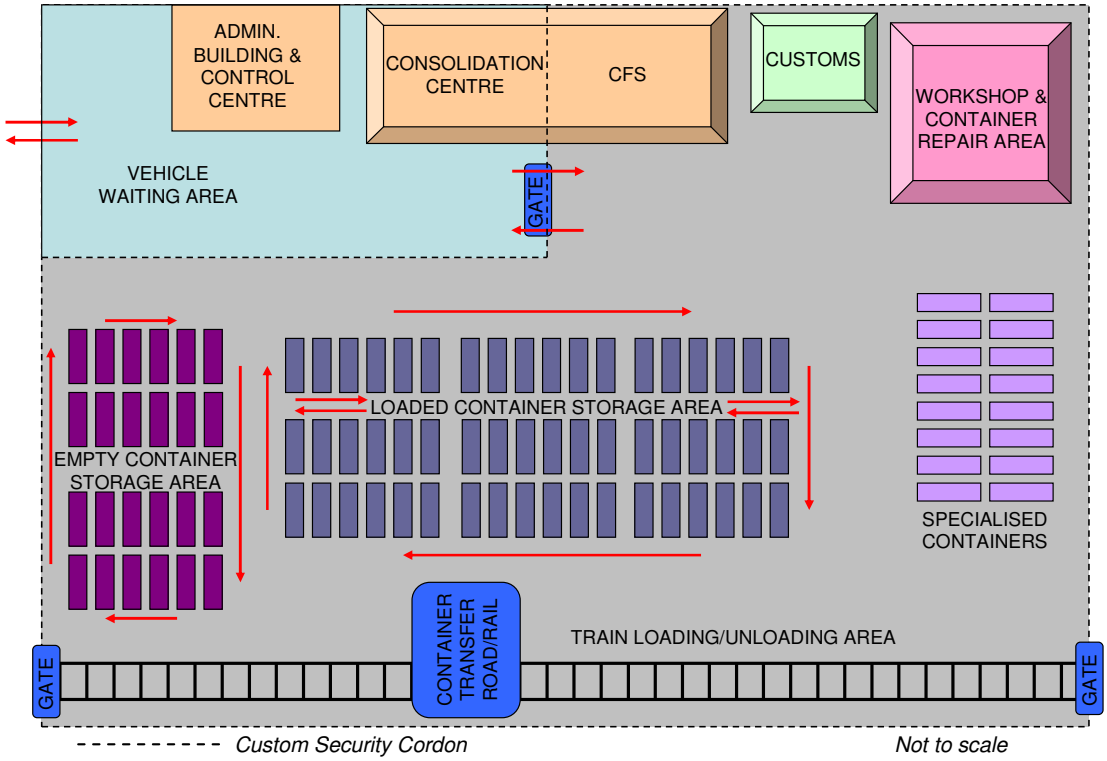
6.2.3 One of the requirements for a Dryport is that it is placed under customs control and is subject to a security cordon, as most of the containerised freight passing through the facility is likely to be import/export. On the other hand, a consolidation centre is not subject to this regulation, as it is generally aimed at serving the domestic freight market. As a result, mixing import and export consignments with cargo using the consolidation centre can raise some customs and security issues, as well as being a potential source of confusion and delay.

6.2.4 For this reason, it is suggested that the consolidation centre should be included within the grounds of the Dryport compound but partly segregated, for example with a gate separating the domestic freight handling by the consolidation centre from the freight transiting through the

[18] Handbook on the Management and Operation of Dry Ports, UNCTAD, 1991

Dryport which is under customs regulation. An example of possible layout is shown in Figure 6.3 below.

Figure 6.3 – Dryport Layout with a Consolidation Centre



6.2.5 In this example, the whole operation of the consolidation centre could occur outside of the customs-controlled area without impacting on the operation of the Dryport. Lorries deliver their cargo to the location which is then transferred to the consolidation centre part of the site. There, it is aggregated and stored before being loaded on delivery vehicles to be sent to their final destination.

6.2.6 A similar procedure occurs for some of the cargo from the Dryport (mostly arriving by train) which needs to be aggregated before onward travel by road. This cargo is transferred in the CFS for segregation/consolidation, but remains within the custom-controlled area. It can then leave the security cordon after checking by the custom authorities, either to be directly loaded onto delivery vehicles and sent off, or to be transferred into the consolidation centre to be further aggregated with similar domestic deliveries.

6.3 Synergies between a Dryport and a Consolidation Centre

6.3.1 As noted in the previous section, there is a possibility to generate some synergies by establishing a Dryport and a consolidation centre on the same site, thereby potentially decreasing costs and augmenting benefits.

6.3.2 A clear gain from having both facilities operating jointly would be the sharing of the management structure which can be vertically integrated with the consolidation centre under management of the Dryport administration.

6.3.3 Moreover, both the CFS within the Dryport and the consolidation centre could be managed by the same staff, which would lead to a reduction in operating costs. These savings could be significant given the fact that both facilities may experience peak workloads at different times of the day (i.e. early morning deliveries for the consolidation centre, and train arrival/departure throughout the day for the Dryport, synchronised with the scheduled shipping at the sea port). Sharing staff would therefore spread the workload more evenly during the day, avoiding the succession of peak periods and intervals of low activity.

6.3.4 In addition to sharing staff, the consolidation centre and the CFS can also share equipment (such as fork-lift trucks), which would further decrease the operating costs.

6.3.5 Compared with a purely road-based consolidation centre, cargo transiting through the Dryport / consolidation centre combined facility can utilise both rail and sea modes in addition to road. This could open the potential demand of a consolidation centre to wider markets, including long-distance and international freight.

6.3.6 Another consequence is that the combination of both facilities could lead to a reduction in vehicles-kilometres, as cargo from the Dryport that needs aggregating before onward travel could be aggregated directly with freight from the consolidation centre if they share a similar destination, providing the layout permits this as illustrated in Figure 6.3.

6.3.7 The combined Dryport / consolidation centre could also benefit from joint marketing, with advertising aimed at targeted customers such as retailers and the construction industry. Emphasis should be made on its status as a modern, multimodal facility offering complementary services to various types of freight, including domestic and international.

6.4 Impact on Cost/Benefit Analysis

Network Impact of Dryport Sites

6.4.1 The analysis undertaken in this study has shown that the locations which do show sufficient demand for a consolidation centre are the following:

- Livingston;
- Grangemouth/Falkirk; and
- Coatbridge.

6.4.2 It should be noted that both Grangemouth/Falkirk and Coatbridge were on the original list as potential Dryport sites in the Freight Routing Study, and these locations were also identified in the Scottish Multi-Modal Freight Locations Study. Although Livingston was not identified in these studies, it was acknowledged that Livingston generates the highest network benefits as a consolidation centre. It was therefore suggested to assess Livingston as a Dryport location, in order to compare effectively the potential costs and benefits of combining a consolidation centre and a Dryport in all three locations. This was carried out applying the same methodology as outlined in the Freight Routing Study Report[19] and the results are shown in Table 6.1 overleaf.

[19] Freight Routing Study Final Report, Scott Wilson Ltd, June 2009

Table 6.1 – Network-Wide Impact of the Dryport Options (per annum)

Site	2020 Low Growth		2020 High Growth	
	VOC Savings	Time Savings	VOC Savings	Time Savings
Livingston	£0.7m	£1.4m	£0.8m	£2.0m
Grangemouth/Falkirk	£1.3m	£2.6m	£1.4m	£3.4m
Coatbridge	£1.5m	£2.8m	£1.7m	£4.0m

Note: all monetary values are in 2002 prices

6.4.3 The results show that the Dryport at Livingston returns lower benefits than the two other sites, which is due to lower demand, and more importantly, to lower accessibility as a Dryport location.

Impact on Operating Costs

6.4.4 In order to estimate the costs savings highlighted in section 6.3, a restricted cost/benefit analysis (RCBA) was carried out for a consolidation centre as part of a Dryport. The RCBA model used was the same as that used in Chapter 5. Based on case studies, potential staff savings were identified which gave an average of circa 20% reduction in operating costs (as the highest observed reduction was 33%, the value of 20% used in this RCBA may be viewed as a more robust analysis).

6.4.5 The adjusted RCBA for a consolidation centre as part of a Dryport is shown in Tables 6.2 and 6.3 below, serving retail and construction freight respectively.

Table 6.2 – Summary of Appraisal Results with Dryports (Retail Freight)

	2020 Low Growth			2020 High Growth		
	Livingston	Gran/Falk	Coatbridge	Livingston	Gran/Falk	Coatbridge
Present Value of Benefits (PVB)	£4.61m	£4.54m	£4.07m	£5.90m	£5.81m	£5.21m
Present Value of Costs (PVC)	£5.10m	£5.10m	£5.10m	£5.10m	£5.10m	£5.10m
Net Present Value (NPV)	-£0.49m	-£0.56m	-£1.03m	£0.80m	£0.71m	£0.11m
Benefit / Cost Ratio (BCR)	0.90	0.89	0.80	1.16	1.14	1.02
Revenue / Operating Cost (R/O)	1.02	1.02	1.01	1.31	1.31	1.29

Note: all monetary values are discounted to 2002 prices

Table 6.3: Summary of Appraisal Results with Dryports (Construction Freight)

	2020 Low Growth			2020 High Growth		
	Livingston	Gran/Falk	Coatbridge	Livingston	Gran/Falk	Coatbridge
Present Value of Benefits (PVB)	£7.92m	£7.70m	£2.47m	£9.41m	£9.10m	£2.91m
Present Value of Costs (PVC)	£5.10m	£5.10m	£5.10m	£5.10m	£5.10m	£5.10m
Net Present Value (NPV)	£2.82m	£2.60m	-£2.63m	£4.30m	£4.00m	-£2.19m
Benefit / Cost Ratio (BCR)	1.55	1.51	0.48	1.84	1.78	0.57
Revenue / Operating Cost (R/O)	2.21	2.16	2.14	2.60	2.54	2.52

Note: all monetary values are discounted to 2002 prices

6.4.6 The above tables indicate that the savings in operating costs lead to an average 20% increase of the BCR and a 25% increase in R/O. As a result, the freight consolidation centres at Livingston and Grangemouth/Falkirk return a positive NPV in the high growth scenario.

6.4.7 Based on the Dryport network benefits and the Dryport/consolidation centre RCBA, for all three sites, the following can be observed:

- Livingston returns the best results for a consolidation centre, particularly for construction freight, as a result of its key location in the SEStran area and its proximity to the Edinburgh conurbation. However, it is less than ideal for a Dryport due to its insufficient demand and lower accessibility to rail freight;
- Coatbridge appears to be the best location for a Dryport because of its good connections to the rest of Scotland and its status as a major rail facility. However, its location outside the SEStran area makes it less suitable for a consolidation centre servicing SEStran as it leads to significant increases in journey times and distances on road, particularly for construction freight; and
- Grangemouth/Falkirk returns a slightly lower NPV than Livingston for a consolidation centre, but results are still positive. It comes second as a Dryport site as well, due to its proximity to the port of Grangemouth and its good accessibility by rail.

6.4.8 From these results, it can be concluded than the best location for a consolidation centre servicing the SEStran area would be Livingston, particularly for construction freight. However, this facility would be 'stand alone' as Livingston does not appear to be a suitable site for a Dryport.

6.4.9 In the event of Grangemouth/Falkirk being selected as the location for a Dryport, there would be significant benefits in establishing a consolidation centre alongside the Dryport. The slight decrease in NPV and BCR compared with Livingston would be largely counterbalanced by the decrease in operating costs and other synergies.

6.4.10 Finally, if Coatbridge is selected for establishing a Dryport, there does not appear to be sufficient benefits for the SEStran area in combining this facility with a consolidation centre. In this case, it is suggested that both facilities are separated, with the preferred location at Livingston being favoured for the consolidation centre.

6.5 Possible Funding / Operators

Operators

6.5.1 From the case study review, there would appear to be several different organisations involved in the operation of a Dryport. Depending on the set up, these can include:

- Freight Operating Companies;
- Port Authorities;
- Rail infrastructure companies;
- Goods distribution companies; and
- Local/Regional Authorities/Government.

6.5.2 However, to ensure a seamless operation it would be necessary to appoint one body for the overall management and operation of the site. To enable the development of a Dryport within the SEStran area, the different possibilities for both operators and sources of funding must be considered. In previous examples these have differed from site-to-site depending on the various business interests involved.

6.5.3 Within and adjacent to the SEStran area, possible operators of a Consolidation Centre within a Dryport could include:

- Forth Ports who operate both Rosyth and Grangemouth ports;
- freight operating companies such as Freightliner who already operate a depot at Coatbridge; and
- distribution companies such as DHL (which have a distribution centre at Eurocentral, Mossend) or Exel who also have a large operation is Scotland on behalf of the large supermarket chain, J. Sainsbury.

6.5.4 From the above it is worth noting that DHL and Exel already have significant experience operating existing consolidation centres at Bristol, Meadowhall and Heathrow Airport. In addition to the private sector there are also examples of public sector involvement in the operation of consolidation centres (e.g. Transport for London and the Principality of Monaco). However, the regulatory arrangements for these examples are different from those in Scotland.

6.5.5 The marketing of the facility would be very important in order to ensure its full capability was realised and potential for revenues maximised. In this regard the role of the operator would be crucial in ensuring the site was promoted to as wide a range of customers as possible.

6.5.6 Therefore it would be prudent to appoint an operator who has had previous experience of marketing freight services and who has knowledge of the type of customers who would use the facility. It would appear that commercial companies, or 'arms-length' public entities that operate commercially, such as DHL, Exel or Forth Ports, who have had previous freight and marketing experience, might be best placed to do this. We do not recommend that organisations such as SEStran operate any new facility, but there may be a role for the public sector to sit on the relevant management board or wider steering group.

Funding

6.5.7 In establishing a Dryport, whether building a dedicated new facility or adapting an existing facility, it may be possible that some sort of funding may be obtainable to cover or supplement the capital costs required, and this should certainly be investigated. The process of application and assessment of the grants might be similar to that required for the Freight Facilities Grants that are currently available from the Government, and which are aimed at encouraging modal shift to more sustainable modes of freight transport. This is of particular relevance to the Dryport / Consolidation Centre sector.

6.5.8 For the operation of the Consolidation Centre within a Dryport, there are several ways which it could be funded. The most common methods include:

- operate on a fully commercial (self-funding) basis;
- operations partly commercial and partly subsidised by public sector; or
- possible grants / funding from central Government / EU to cover all recurrent costs.

6.5.9 As seen from the case studies there are very few examples of Consolidation Centres / Dryports which have successfully operated on a commercial basis, requiring no external funding. Nevertheless, Tables 6.2 and 6.3 which display the results of the appraisal show that the Revenue / Operating Cost (R/O) ratios are greater than one for all sites. This implies that the facilities would be able to sustain themselves commercially, requiring little or no subsidy. However, these results are dependant on the assumptions made in the modelling and appraisal process.

6.5.10 There may also be opportunities for funding assistance (e.g. from the EU) in the future to support an initial pilot project. Such pilot projects have been evident from the case study review.

7 EMERGING FINDINGS AND RECOMMENDATIONS

7.1 Emerging Findings

7.1.1 This report has presented the results of a study examining the potential for developing a freight consolidation centre serving the SEStran area, as well as the opportunities to combine this facility with a Dryport and the benefits and issues resulting from their joint operation.

Case Study Review

7.1.2 A case study review was undertaken to identify lessons learned from operating consolidation centres elsewhere. Six examples were reviewed, focussing on their efficiency, sustainability and effect on freight transport and the supply chain. This review showed that there is a great variety of consolidation centres with different types of location and spatial coverage, and with various modes of operation and ownership, all serve either the retail of the construction market.

7.1.3 Nevertheless, the concept of a consolidation centre has been shown to work operationally in a number of different scenarios, with customers having a positive appreciation of the services provided and the enhancements to their supply chain performance. However, the main issue was the financial viability of consolidation centres which generally require public funding, despite the promotion of value-added services provided, by, for example, one of the facilities serving the retail market.

7.1.4 There is therefore a challenge to identify the right set of circumstances where a consolidation centre would be able to deliver the benefits that these facilities have achieved, while operating successfully from a commercial point of view, and with the least requirement for financial support.

Stakeholder Consultation

7.1.5 A stakeholder consultation exercise was carried out by interviewing businesses and organisations from a wide geographical area. This considered responses in terms of the requirement for a consolidation centre, potential locations and markets which can be served, and what facilities and functions a consolidation centre can or should be able to undertake.

7.1.6 From this, it appeared that the largest retail companies have little need for a separate consolidation centre as they already have sophisticated distribution networks in place. However, smaller retailers in urban areas may benefit more from such a scheme, with preferences for either overnight or very early morning deliveries.

7.1.7 On the other hand, all construction companies interviewed indicated a consolidation centre would be useful at some undefined period in the future. The construction sector favours a just-in time (on demand) approach to synchronise building operations with the delivery of materials.

7.1.8 From the point of view of freight operators, the major benefit of a consolidation centre was the ability to fully utilise vehicle capacity, resulting in significant increase in financial performance.

7.1.9 However, freight operating companies that are rail based tend to be locked into a rail-lorry structure hub-and-spoke system, using independent hauliers for the final delivery leg to the final destination, mainly using containers. This would restrict the ability of a consolidation centre from

operating as a Dryport, but does not preclude the possibility of both facilities operating separately on the same site.

7.1.10 Regarding the location for a consolidation centre, the apparent preferred locus was formed by a triangle linking the Coatbridge area in the south west to the Grangemouth/Falkirk region in the north, and the western fringes of Edinburgh itself. In particular, for the retail sector and freight operating companies, the favoured location would be an area in close proximity to Livingston, while construction companies favoured a site at Grangemouth/Falkirk, central to the region and close to a major port.

Existing Freight Patterns and Potential Demand

7.1.11 A previous study, the Scottish Multi-Modal Freight Locations Study, developed an emerging freight hubs strategy. In addition, the SEStran FRS identified five potential locations for a new facility, either within the SEStran boundary or adjacent to the area. The results of these two studies, combined with locations suggested in the stakeholder consultation has produced a list of six sites as follows:

- Livingston;
- Grangemouth/Falkirk;
- Rosyth;
- Coatbridge;
- Leven/Methil Dock; and
- Lockerbie.

7.1.12 Freight demand data from the SESFM was then analysed to establish potential demand at each potential location for a consolidation centre serving the SEStran area. When considering the six possible locations, Lockerbie and Leven/Methil Dock were found to be too far away from the central SEStran area to serve as suitable locations for a consolidation centre. Furthermore, Rosyth was shown to have insufficient demand for such a facility. Therefore these three sites were discounted from further consideration.

7.1.13 The data also suggested there might be sufficient demand at Livingston, Grangemouth/Falkirk and Coatbridge which was consistent with the consultation feedback.

7.1.14 In order to estimate the potential demand for a consolidation centre, an Incremental Elasticity Model was used, with data from the SEStran Freight Model as input. The model suggested that all three sites return similar results in terms of demand, but results differ in terms of network savings, with Livingston performing the best.

7.1.15 For all options, the consolidation centre is much more attractive for construction freight activity than retail freight activity, with freight transfers involving the construction sector occurring almost three times as often.

Economics and Operations Assessment

7.1.16 For all three options, an economic appraisal was carried out, using a Restricted Cost / Benefits Analysis (RCBA). The intention was to identify those locations which support sustainable economic activity and return good value-for-money.

7.1.17 The capital and operating costs associated with a consolidation centre were estimated from case studies of similar developments and were fed into the analysis, along with revenues and network benefits calculated from the Incremental Elasticity Model.

7.1.18 The results showed that the site at Livingston performs the best for both retail and construction freight, with Grangemouth/ Falkirk having slightly lower values, and Coatbridge returning a negative Net Present Value (NPV) in all cases. It was noted that the NPV for retail freight consolidation centres are negative in the low growth scenario and only marginally positive in the high growth scenario. This seems to confirm that consolidation centres for the retail freight market are more likely to necessitate public subsidies.

Dryport/Consolidation Centre Synergies

7.1.19 After the economic performance of each consolidation centre was undertaken, the opportunity to combine such a facility with a Dryport was analysed. It was noted that both facilities have, in fact, two different modes of operation with different constraints, and that the consolidation centre should not be completely physically incorporated within the Dryport.

7.1.20 However, there would be benefits in operating both these facilities on the same site and with shared resources. Such benefits include the reduction in operating costs through the integration of the management structure and the sharing of staff and resources. It would also improve accessibility for various modes and therefore have the potential to attract a wider market, and reduce the distance that freight vehicles need to travel by having the two facilities on one site.

7.1.21 In order to estimate the impact on their costs by combining both facilities, another RCBA was undertaken for a consolidation centre as part of a Dryport. The result of the analysis showed that this leads to an average increase of 20% of the BCR, suggesting significant improvements in terms of viability.

7.1.22 From these results, it was concluded that the best location for a consolidation centre servicing the SEStran area would be Livingston, particularly for construction freight activities, but this facility would be ‘stand alone’ as Livingston is not a suitable site for a Dryport.

7.1.23 A site at Grangemouth/Falkirk leads to a slight decrease in NPV and BCR for the consolidation centre, but this would be counterbalanced by the decrease in operating costs and other synergies if operations were synchronised with that of a Dryport.

7.1.24 Finally, a consolidation centre at Coatbridge would not generate sufficient benefits for the SEStran area, regardless of its inclusion in a Dryport. In the case that the site chosen for a Dryport is outside SEStran, both facilities are best kept separated.

Possible Funding / Operators

7.1.25 It is highly likely that financial assistance will be sought to establish a facility with the size and complexity of a Dryport. Although this is speculation at the moment, this sort of assistance may well be available along the lines of the Freight Facility Grant programme, sponsored by Government in order to meet national environmental objectives. There may also be opportunities for EU funding in the future to support an initial pilot project. Such pilot projects have been evident from the case study review. However, once established, in terms of operational costs, the analysis has shown that the sites could be able to meet their on-going costs.

7.2 Recommendations

7.2.1 Based on the findings of this report, the following is recommended:

- the Transport Research Institute (TRI) at Napier University is currently working on the Dryport project looking at preferred locations, costs and benefits. The findings of this report should be considered when undertaking their assessment;
- from the TRI study, the opportunities to combine both the consolidation centre and the Dryports market should be evaluated, and a full business case of their joint operation should be undertaken;
- the different possibilities for funding should be identified, with a review of the opportunities for third party financing; and
- the potential to initially operate a consolidation centre as a pilot scheme should be considered, as this procedure was followed successfully with one of the case studies assessed in this study (the London Consolidation Centre). It may be possible to pursue opportunities for funding support from various sources (e.g. EU grants) to assist with the pilot project.

Appendix A

Consultation Questionnaire

Record of Telephone Conversation

Project Data			
Title	Freight Routing Strategy	Reference Number	S106019
Call Information			
Date			
From (Receiver)	Jonathan Campbell, SWS&I	Time	
		Organisation	
Address		E-mail & telephone	
Actions			
Please return call ☐		Will call again ☐	

Message You should have received a copy of the Freight Routing Strategy recently, and I am calling to ask your opinion and comments on this document. May I have a few minutes of your time to ask you six very quick questions.

If yes – proceed; If no, when would be a good time - Day: Hour:

Record of Telephone Conversation

Q1 In terms of the existing truck stop analysis and how it is presented in Chapter 4, (i.e. T4.1) do you have any comments on this (*anything missing*)?

Q2 Of the three new potential truck stops examined in the study, one that was located in the Livingstone/Bathgate/M8 corridor (West Lothian) was dismissed owing to the unavailability of land; do you have any views or comments on the location of the other 2?

Q3 With regards to the third truck stop originally to be located in the M8 corridor, do you have any views as to where it should be placed?

Q4 Turning now to the Lorry Advisory Network presented in Chapter 5, do you have any views or comments on the identified locations and their key trip generators and attractors as presented in T5.1?

Q5 Referring to the signing strategy in Chapter 6, do you know of any place with weak signing for any particular location, what are the weaknesses in the signing and where are they?

Q6 Other than what is already presented in the Chapter, in your opinion what else should the signing strategy cover?

Record of Telephone Conversation

Q7 Given that our remit for the Dry Ports Appraisal in Chapter 7 was limited to a high level evaluation of the potential benefits that such a facility offered, rather than presenting a full business case, do you have any comments or views on the appraisal results?

End & Thank You

Appendix B

Cost Estimates

SEStran Freight Consolidation Centre Study

Veh op costs

No of Vehs		3	
Fuel diesel		5	km per litre
Ave distance travelled		32000	km per yr
Cost of diesel		£1.05	per litre
Veh leasing costs		£30,000	per vehicle
Depreciation		£6,000	per vehicle
Annual fuel & lube		£6,720	per vehicle
Tyres	5%	£1,500	per vehicle
Maintenance	15%	£4,500	per vehicle
Sub-Total (Per vehicle)		*£48,720*	*per vehicle*
Total Annual Veh OpEx		*£146,160*	

Building op costs

No of Staff		3	
Ave salary		£17,000	from Case Study
Staff Costs		£51,000	
Rates		£25,000	
Insurance	0.50%	£3,743	from Case Study
Electricity	0.50%	£3,743	from Case Study
Waste Disposal		£2,000	from Case Study
Security		£1,000	from Case Study
Administration		£6,000	from Case Study
Maintenance	1.00%	£9,523	from Case Study
Total Annual Building OpEx		*£102,008*	

Total Annual OpEx **£248,168**

Capital costs

CC floor area	500	sq.m
Overall site area	2,000	sq.m

Overall building rates (£/m^2 GFA) - Sourced from SteelConstruction.org (estimate for simple building frai

£1,518	concrete frame and floor option
£1,476	steel frame option

Ave rate	£1,497.00
Building Cost	£748,500
Road access	£150,000
Land purchase	£53,800
Total CapEx	**£952,300**
Optimism Bias	44%
Total CapEx (inc OB)	**£1,371,312**

Industrial and warehouse land values

Typical £ per ha	£269,000
sq.m to ha factor	10,000

ne)

Appendix C

Demand Analysis Model Results Tables

Consolidation Centres Study

Incremental Elasticity Model

Input Parameters

Site of Consolidation Centre	Coatbridge

	Retail	**Construction**
Generalised Costs Parameters		
Distance Co-efficient	1.9	1.9
Time Co-efficient	2.7	2.7
Interchange Penalty Co-efficient	1	1
Consolidation Centre Fee (£ per tonne)	£2.00	£1.50
Incremental Elasticity Model Parameters		
Elasticity Factor	-0.9	-0.9
Minimum Decrease Cut-Off	0%	0%
Maximum Decrease Cut-Off	20%	20%
Average Load per HGV (Tonnes/Vehicle)	15.689	16.127

	Retail	**Construction**
Delivery Costs		
Delivery Rate (per km)	£0.11	£0.11
Minimum Delivery Cost	£9.00	£9.00

Distance/Time from zones to Consolidation Centre (km)	**Distance**	**Time**
Edinburgh Centre	60	49
Hermiston Gait	53	39
Cameron Toll	68	52
Fort Kinnaird	73	52
Leith	63	52
Granton	60	49
Airport	50	38
Ratho	49	39
Newbridge	46	32
Queensferry	60	43
Bathgate	31	28
Midlothian	68	49
East Lothian	97	73
Scottish Borders	132	108
Falkirk	37	35
Clackmannanshire	52	47
Fife	66	50
SPT North	62	56
SPT Central	0	0
SPT South	54	43
Swestrans	112	80
Tactran West	65	52
Tactran Central	107	74
Tactran East	138	100
Nestran	241	185
Hitrans	273	224
North East England	233	169
Rest of UK	454	286

Economic Parameters	**Values**	**Units**
Vehicle Operating Costs (VOC)	£0.08	per HGV-km
Time Saving	£12.80	per HGV-hr
SLM	£0.81	per HGV-km
Climate Change (Carbon)	£0.04	per HGV-km

Consolidation Centres Study

Incremental Elasticity Model

Results for Consolidation Centre at Coatbridge

	2020 Low Growth		2020 High Growth	
	Retail	**Construction**	**Retail**	**Construction**
Tonnes Transferred	72,334	208,663	82,338	231,360
HGV equivalent Transferred	4,610	12,939	5,248	14,346
Tonnes-km Reduction	-28,263	-3,494,797	-29,569	-3,880,599
HGV-hrs Reduction	345	-1,561	395	-1,730
HGV-kms Reduction	-1,801	-216,705	-1,885	-240,627
Revenue	£144,667	£312,995	£164,675	£347,040
VOC	-£148	-£17,770	-£155	-£19,731
Time Saving	£4,422	-£19,981	£5,056	-£22,149
SLM	-£1,461	-£175,734	-£1,528	-£195,133
Climate Change (Carbon)	-£70	-£8,368	-£73	-£9,292
Total Benefit	£2,744	-£221,853	£3,300	-£246,306
PVB	***£147,411***	***£91,142***	***£167,975***	***£100,734***

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual Tonnes)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 tactran West	23 Tactran Centr	24 Tactran East	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,579	1,056	0	654	397	0	3,031	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,304	651	0	794	401	0	3,194	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	527	398	0	236	72	0	878	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	105	426	0	238	14	0	738	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	837	320	0	235	100	0	1,018	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	794	206	0	218	86	0	1,060	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	246	12	0	45	31	0	294	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	37	3	0	0	3	0	38	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	401	13	0	60	58	0	457	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	293	17	0	55	18	0	278	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,204	1,325	198	124	414	329	53	11	86	24	0	0	0	0	3,433	0	2,719	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,222	1,239	115	50	343	82	106	15	156	28	957	0	0	0	0	0	2,959	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	420	299	140	127	166	135	0	0	0	0	2,314	0	0	0	2,350	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	847	864	136	0	299	258	50	8	68	35	9,241	0	0	0	4,461	0	3,822	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	1	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	797	0	0	0	225	0	900	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	18	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 72,334 tonnes

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 tactran West	23 Tactran Centr	24 Tactran East	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,697	1,205	0	744	453	0	3,448	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,783	740	0	904	456	0	3,646	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	598	452	0	266	82	0	988	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	120	485	0	269	16	0	835	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	951	361	0	267	115	0	1,149	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	902	232	0	246	98	0	1,198	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	287	14	0	49	35	0	328	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	45	5	0	0	3	0	54	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	460	17	0	69	65	0	518	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	328	28	0	66	24	0	335	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,369	1,511	226	143	474	372	62	14	104	30	0	0	0	0	3,903	0	3,088	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,392	1,412	131	56	391	93	121	16	178	32	1,092	0	0	0	0	0	3,349	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	471	321	149	139	181	158	0	0	0	0	2,617	0	0	0	2,677	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	965	984	155	0	341	294	57	9	78	40	10,532	0	0	0	5,085	0	4,356	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	2	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	908	0	0	0	256	0	1,026	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	20	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 82,338 tonnes

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 tactran West	23 Tactran Centr	24 Tactran East	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,077	2,065	1,669	70	491	70	741	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,531	2,408	2,175	279	891	515	1,425	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	212	773	608	26	90	20	208	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	36	738	637	22	16	17	150	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	300	559	563	22	115	22	214	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	451	552	563	32	148	29	348	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	514	110	108	20	200	136	333	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	6	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	526	146	149	28	104	95	368	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,085	4,176	334	188	623	792	460	21	761	295	0	1,639	219	0	4,820	1,066	3,980	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,381	4,538	1,626	1,565	1,192	1,120	148	9	183	70	152	0	4,151	2,362	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	461	585	107	132	106	119	14	0	18	7	62	5,094	0	176	0	0	58	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	299	0	104	100	100	0	0	0	0	0	1	2,065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,117	2,018	116	44	266	125	444	15	662	128	3,217	0	212	1,895	0	1,983	1,847	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,679	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	6,523	9,440	1,861	1,581	2,054	2,702	1,762	96	2,682	1,973	12,856	0	605	0	16,564	3,944	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	917	1,663	0	0	284	383	281	10	379	170	7,844	0	0	0	12,994	570	4,624	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	673	0	3,546	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	34	0	0	0	4,070	0	310	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	64	81	14	16	17	23	10	1	14	11	0	0	0	0	2,517	1	3,036	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	842	0	0	0	2,009	0	305	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	8	0	0	0	0	2	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	2	5	0	0	0	0	0	0	0	0	362	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0

Total 208,663 tonnes

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 tactran West	23 Tactran Centr	24 Tactran East	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,184	2,296	1,832	76	539	77	817	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,779	2,643	2,388	306	978	566	1,567	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	233	851	668	28	99	22	227	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	39	809	700	24	17	19	166	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	330	614	618	24	126	24	233	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	496	604	618	35	162	32	385	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	564	122	118	21	219	150	370	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	7	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	854	150	146	28	326	188	559	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	580	164	167	29	114	102	406	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,267	4,586	367	207	684	869	506	22	856	258	0	1,796	241	0	5,296	1,172	4,368	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,808	4,982	1,784	1,717	1,309	1,228	163	9	201	77	164	0	4,555	2,594	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	506	642	118	145	116	131	16	0	19	7	66	5,592	0	192	0	0	62	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	329	0	115	110	110	0	0	0	0	0	1	2,266	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,226	2,215	127	49	292	137	488	16	727	140	3,531	0	233	2,079	0	2,177	2,029	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,063	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	7,166	10,363	2,043	1,735	2,259	2,966	1,933	98	2,947	2,176	14,117	0	669	0	18,183	4,332	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,006	1,826	0	0	312	421	309	11	416	187	8,612	0	0	0	14,267	626	5,076	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	739	0	3,894	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	38	0	0	0	4,468	0	341	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	70	89	15	17	18	25	11	1	16	12	0	0	0	0	2,763	1	3,333	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	924	0	0	0	2,206	0	335	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	8	0	0	0	0	3	0	0	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	3	5	0	0	0	0	0	0	0	0	397	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0

Total 231,360 tonnes

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual HGV equivalent)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cenf actran	24 Eas	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	164	67	0	42	25	0	193	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	211	41	0	51	26	0	204	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	34	25	0	15	5	0	56	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	7	27	0	15	1	0	47	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	53	20	0	15	6	0	65	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	51	13	0	14	5	0	68	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	16	1	0	3	2	0	19	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	26	1	0	4	4	0	29	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	19	1	0	4	1	0	18	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	77	84	13	8	26	21	3	1	6	2	0	0	0	0	219	0	173	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	78	70	7	3	22	5	7	1	10	2	61	0	0	0	0	0	189	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	27	19	9	8	11	9	0	0	0	0	147	0	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	54	55	9	0	19	16	3	1	4	2	589	0	0	0	284	0	244	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	51	0	0	0	14	0	57	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 4,610 **HGVs**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cenf actran	24 Eas	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	187	77	0	47	29	0	220	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	240	47	0	58	29	0	232	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	38	29	0	17	5	0	63	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	8	31	0	17	1	0	53	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	61	23	0	17	7	0	73	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	58	15	0	16	6	0	76	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	18	1	0	3	2	0	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	29	1	0	4	4	0	33	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	21	2	0	4	2	0	21	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	87	96	14	9	30	24	4	1	7	2	0	0	0	0	249	0	197	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	89	90	8	4	25	6	8	1	11	2	70	0	0	0	0	0	215	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	30	20	9	9	12	10	0	0	0	0	167	0	0	0	171	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	61	63	10	0	22	19	4	1	5	3	671	0	0	0	324	0	278	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	58	0	0	0	16	0	65	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 5,248 **HGVs**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cenf actran	24 Eas	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	67	130	104	4	30	4	46	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	157	149	135	17	55	32	88	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	13	48	38	2	6	1	13	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	46	40	1	1	1	9	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	19	35	35	1	7	1	13	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	28	34	35	2	9	2	22	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	32	7	7	1	12	8	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	33	9	9	2	6	6	23	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	128	259	21	12	39	49	29	1	48	15	0	102	14	0	299	66	247	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	272	281	101	97	74	69	9	1	11	4	9	0	257	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	29	36	7	8	7	7	1	0	1	0	4	316	0	11	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	19	0	6	6	6	0	0	0	0	0	6	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	69	125	7	3	16	8	28	1	41	8	199	0	13	117	0	123	115	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	405	585	115	98	127	168	109	6	166	122	797	0	38	0	1,027	245	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	57	103	0	0	18	24	17	1	24	11	486	0	0	0	806	35	287	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	220	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	252	0	19	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	5	1	1	1	1	0	0	1	1	0	0	0	0	156	0	188	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	52	0	0	0	125	0	19	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 12,939 **HGVs**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cenf actran	24 Eas	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	73	142	114	5	33	5	51	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	172	164	148	19	61	35	97	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	14	53	41	2	6	1	14	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	50	43	1	1	1	10	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	20	38	38	1	8	1	14	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	31	37	38	2	10	2	24	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	35	8	7	1	14	9	23	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	53	9	9	2	20	12	35	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	36	10	10	2	7	6	25	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	141	284	23	13	42	54	31	1	53	16	0	111	15	0	328	73	271	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	298	309	111	106	81	76	10	1	12	5	10	0	282	161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	31	40	7	9	7	8	1	0	1	0	4	347	0	12	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	20	0	7	7	7	0	0	0	0	0	7	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	76	137	8	3	18	8	30	1	45	9	219	0	14	129	0	135	126	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	444	643	127	108	140	184	120	6	183	135	875	0	42	0	1,128	269	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	62	113	0	0	19	26	19	1	26	12	534	0	0	0	885	39	315	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	241	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	277	0	21	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	6	1	1	1	2	1	0	1	1	0	0	0	0	171	0	207	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	57	0	0	0	137	0	21	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 14,346 **HGVs**

Consolidation Centres Study
Incremental Elasticity Model

Reduction in Tonnes-kilometres (Annual

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 :ameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-68,083	-55,867	0	10,196	-7,425	0	-96,987	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-87,226	-22,708	0	22,859	-6,455	0	-72,509	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-13,653	-23,772	0	543	-1,110	0	-30,896	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-2,741	-27,440	0	-1,260	-221	0	-27,446	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-21,933	-15,413	0	2,614	-1,858	0	-33,703	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-20,812	-9,202	0	4,185	-1,593	0	-36,142	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-6,355	-316	0	1,697	-564	0	-7,265	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-947	-67	0	0	-54	0	-958	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-10,391	-254	0	2,616	-1,069	0	-11,479	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-7,754	-358	0	2,367	-507	0	-13,749	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,770	-5,964	2,140	1,923	2,280	855	-395	-90	-943	44	0	0	0	0	-42,912	0	18,760	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-3,129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4,764	-372	1,754	982	2,434	338	-617	-102	-1,497	-153	-17,799	0	0	0	0	0	-22,779	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-16,079	-10,664	-4,670	-3,871	-6,015	-5,430	0	0	0	0	-64,794	0	0	0	-85,790	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	62,643	57,959	11,214	0	23,115	19,172	3,248	515	4,125	2,593	419,532	0	0	0	174,431	0	237,364	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	40	0	0	0	399	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4,188	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-22,319	0	0	0	-6,306	0	-54,896	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	-182	0	0	0	-532	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-18	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	166	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - **28,263** **tonnes-kilometres**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 :ameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-77,543	-63,752	0	11,611	-8,462	0	-110,693	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-99,349	-25,810	0	26,045	-7,349	0	-82,755	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-15,496	-26,963	0	612	-1,260	0	-34,773	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-3,143	-31,238	0	-1,423	-253	0	-31,072	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-24,910	-17,361	0	2,959	-2,126	0	-38,046	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-23,640	-10,358	0	4,731	-1,822	0	-40,842	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-7,393	-356	0	1,884	-634	0	-8,090	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-1,152	-141	0	0	-54	0	-1,345	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-11,917	-335	0	3,005	-1,209	0	-13,005	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-8,691	-579	0	2,827	-655	0	-16,551	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	3,150	-6,801	2,442	2,215	2,607	966	-460	-114	-1,137	55	0	0	0	0	-48,792	0	21,304	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-3,844	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	5,429	-424	1,994	1,113	2,777	383	-703	-114	-1,706	-171	-20,303	0	0	0	0	0	-25,940	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-18,048	-11,446	-4,975	-4,221	-6,574	-6,344	0	0	0	0	-73,272	0	0	0	-97,727	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	71,396	66,030	12,789	0	26,342	21,836	3,675	584	4,721	2,946	478,155	0	0	0	198,814	0	270,501	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	59	0	0	0	450	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4,733	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-25,412	0	0	0	-7,166	0	-62,560	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	-202	0	0	0	-587	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-20	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	192	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - **29,569** **tonnes-kilometres**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 :ameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-28,438	-110,819	-36,390	1,096	-9,190	-125	-23,800	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-66,810	-84,040	-12,617	8,040	-14,342	412	-32,342	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-5,483	-46,174	-21,350	60	-1,391	30	-7,307	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-933	-47,510	-27,153	-119	-245	19	-5,577	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-7,863	-26,899	-14,759	246	-2,124	-35	-7,069	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-11,826	-24,652	-10,252	624	-2,751	-298	-11,860	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-13,250	-2,806	355	756	-3,613	-164	-8,231	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-402	-125	12	0	-83	-10	-225	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-13,948	-3,075	1,209	1,185	-2,880	-2,465	-18,162	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	4,750	-18,792	3,609	2,911	3,427	2,059	-3,404	-167	-8,509	423	0	15,075	8,353	0	-60,245	5,119	27,464	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-268,089	-226,894	-97,532	-93,423	-63,669	-59,222	-6,543	-418	-7,761	-2,081	-4,230	0	-156,916	-11,339	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-27,320	-29,310	-6,931	-8,884	-6,410	-6,601	-626	0	-746	-208	-1,729	-341,288	0	-969	0	0	-1,314	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-16,918	0	-6,465	-6,437	-5,832	-5,630	0	0	0	-32	0	-141,878	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4,355	-605	1,763	873	1,888	511	-2,577	-102	-6,356	-690	-59,834	0	9,358	148,913	0	-30,532	-14,223	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	1	0	0	0	0	0	0	0	0	-7	0	0	0	-55,607	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-249,845	-337,006	-62,148	-48,049	-74,568	-108,609	-72,601	-4,046	-120,673	-110,484	-359,981	0	5,266	0	-604,592	-172,356	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	67,836	111,585	0	0	21,935	28,418	18,116	634	23,048	12,502	356,102	0	0	0	508,077	30,992	287,154	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,384	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,118	0	187,246	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	1	0	0	0	0	0	0	0	0	-158	0	27	0	-76,517	0	-1,179	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-2,432	-2,888	-456	-484	-610	-921	-402	-25	-639	-621	0	0	0	0	-81,291	-37	-185,170	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-15,620	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-23,581	0	0	0	-56,249	0	-18,603	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-57	-79	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	-264	0	0	0	0	-84	0	0	0	-2,284	-1	-1	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	35	74	0	0	0	7	0	0	0	0	9,304	0	0	0	114	17	205	0	0	0	0	0	0	0	0	0	0	0

Total - **3,494,797** **tonnes-kilometres**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 :ameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-31,256	-121,479	-39,944	1,210	-10,088	-138	-26,211	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-73,353	-92,237	-13,852	8,815	-15,749	453	-35,572	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-6,036	-50,832	-23,448	64	-1,523	33	-8,002	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1,029	-52,120	-29,799	-127	-268	21	-6,157	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-8,633	-29,552	-16,198	262	-2,324	-39	-7,709	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-12,990	-27,007	-11,254	678	-3,022	-329	-13,134	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-14,542	-3,114	389	803	-3,969	-180	-9,146	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-417	-125	12	0	-83	-12	-225	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-22,131	-3,046	1,268	1,233	-6,035	-338	-14,033	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-15,369	-3,436	1,350	1,228	-3,141	-2,645	-20,068	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	5,215	-20,637	3,968	3,203	3,764	2,261	-3,742	-178	-9,335	465	0	16,526	9,203	0	-66,202	5,627	30,140	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-294,276	-249,081	-107,030	-102,512	-69,917	-64,983	-7,203	-418	-8,514	-2,294	-4,565	0	-172,170	-12,452	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-30,022	-32,165	-7,622	-9,762	-7,030	-7,293	-697	0	-817	-214	-1,859	-374,676	0	-1,058	0	0	-1,394	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-18,596	0	-7,117	-7,075	-6,415	-6,177	0	0	0	-33	0	-155,698	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4,781	-665	1,936	965	2,072	561	-2,832	-112	-6,975	-759	-65,685	0	10,266	163,432	0	-33,528	-15,624	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	1	0	0	0	0	0	0	0	0	-7	0	0	0	-61,055	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-274,464	-369,949	-68,230	-52,742	-81,988	-119,231	-79,637	-4,145	-132,609	-121,879	-395,273	0	5,823	0	-663,693	-189,320	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	74,477	122,499	0	0	24,072	31,205	19,898	691	25,306	13,724	390,975	0	0	0	557,832	34,029	315,236	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,807	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,082	0	205,599	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	1	0	0	0	0	0	0	0	0	-173	0	27	0	-84,003	0	-1,294	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-2,674	-3,166	-499	-532	-668	-1,018	-438	-25	-701	-678	0	0	0	0	-89,250	-37	-203,292	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-17,157	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-25,882	0	0	0	-61,762	0	-20,406	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-67	-79	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	-290	0	0	0	0	-92	0	0	0	-2,507	-1	-1	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	39	81	0	0	0	8	0	0	0	0	10,215	0	0	0	128	20	213	0	0	0	0	0	0	0	0	0	0	0

Total - **3,880,599** **tonnes-kilometres**

Consolidation Centres Study

Incremental Elasticity Model

Reduction in HGV-kilometers (Annual)

Retail 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-4,340	-3,561	0	660	-473	0	-6,182	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-5,560	-1,447	0	1,457	-411	0	-4,622	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-870	-1,515	0	35	-71	0	-1,969	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-175	-1,749	0	-80	-14	0	-1,749	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-1,398	-982	0	167	-118	0	-2,148	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-1,327	-587	0	267	-102	0	-2,304	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-405	-20	0	108	-36	0	-463	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-60	-4	0	0	-3	0	-61	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-662	-16	0	167	-68	0	-732	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-494	-23	0	151	-32	0	-876	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	177	-380	136	123	145	55	-25	-6	-60	3	0	0	0	0	-2,735	0	1,196	0	0	0	0	0	0	0	0	0	0	-25
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	504	-24	112	63	155	22	-39	-7	-65	-10	-1,134	0	0	0	0	0	-1,452	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-1,025	-680	-298	-247	-383	-346	0	0	0	0	-4,130	0	0	0	-5,468	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	3,993	3,694	715	0	1,473	1,222	207	33	263	165	26,741	0	0	0	11,118	0	15,129	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	3	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-267	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1,423	0	0	0	-402	0	-3,499	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	-12	0	0	0	-34	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	11	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - **1,801** **HGV-kilometers**

Retail 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-4,943	-4,065	0	740	-539	0	-7,055	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-6,332	-1,645	0	1,660	-468	0	-5,275	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-988	-1,719	0	39	-80	0	-2,216	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-200	-1,991	0	-91	-16	0	-1,980	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-1,588	-1,107	0	189	-136	0	-2,425	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-1,507	-660	0	302	-116	0	-2,603	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-471	-23	0	120	-40	0	-516	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-73	-9	0	0	-3	0	-86	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-760	-21	0	192	-77	0	-829	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-554	-37	0	180	-42	0	-1,055	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	201	-433	156	141	166	62	-29	-7	-72	3	0	0	0	0	-3,110	0	1,358	0	0	0	0	0	0	0	0	0	0	-29
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	346	-27	127	71	177	24	-45	-7	-109	-11	-1,294	0	0	0	0	0	-1,653	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-1,150	-730	-317	-269	-419	-404	0	0	0	0	-4,670	0	0	0	-6,229	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	4,551	4,209	815	0	1,679	1,392	234	37	301	188	30,477	0	0	0	12,672	0	17,241	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	4	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-302	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1,620	0	0	0	-457	0	-3,987	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	-13	0	0	0	-37	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	12	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - **1,885** **HGV-kilometers**

Construction 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-1,763	-6,872	-2,256	68	-570	-8	-1,476	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-4,143	-5,211	-762	499	-889	26	-2,005	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-340	-2,863	-1,324	4	-86	2	-453	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-58	-2,946	-1,684	-7	-15	1	-346	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-488	-1,668	-915	15	-132	-2	-438	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-733	-1,529	-636	39	-171	-18	-735	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-822	-174	22	47	-224	-10	-510	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-25	-8	1	0	-5	-1	-14	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-865	-191	75	73	-179	-153	-1,126	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	695	518	0	-3,736	317	1,703	0	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	295	-1,165	224	181	212	128	-211	-10	-528	26	0	0	0	0	-3,736	317	1,703	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-16,624	-14,069	-6,048	-5,793	-3,948	-3,672	-606	-26	-481	-129	-262	0	-9,730	-703	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-1,694	-1,817	-430	-551	-397	-409	-39	0	-46	-13	-107	-21,343	0	-60	0	0	-81	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-1,049	0	-401	-399	-362	-349	0	0	0	-2	0	-8,798	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	270	-38	109	54	117	32	-160	-6	-394	-43	-3,710	0	580	9,234	0	-1,893	-882	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3,448	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-15,492	-20,897	-3,854	-2,979	-4,624	-6,735	-4,502	-251	-7,483	-6,851	-22,322	0	327	0	-37,489	-10,687	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	4,206	6,919	0	0	1,360	1,762	1,123	39	1,429	775	22,081	0	0	0	31,505	1,922	17,806	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,247	0	11,611	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-10	0	2	0	-4,745	0	-73	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-151	-179	-28	-30	-38	-57	-25	-2	-40	-39	0	0	0	0	-5,041	-2	-11,482	0	0	0	0	0	0	0	0	0	0	-25
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-969	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1,462	0	0	0	-3,488	0	-1,154	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-5	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	-16	0	0	0	0	-5	0	0	0	-142	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	2	5	0	0	0	0	0	0	0	0	577	0	0	0	7	1	13	0	0	0	0	0	0	0	0	0	0	0

Total - **216,705** **HGV-kilometers**

Construction 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Htrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-1,938	-7,533	-2,477	75	-626	-9	-1,625	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-4,548	-5,719	-859	547	-977	28	-2,206	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-374	-3,152	-1,454	4	-94	2	-496	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-64	-3,232	-1,848	-8	-17	1	-382	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-535	-1,832	-1,004	16	-144	-2	-478	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-805	-1,675	-698	42	-187	-20	-814	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-902	-193	24	50	-246	-11	-567	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-26	-8	1	0	-5	-1	-14	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-1,372	-189	79	76	-374	-21	-870	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-953	-213	84	76	-195	-164	-1,244	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	323	-1,280	246	199	233	140	-232	-11	-579	29	0	1,025	571	0	-4,105	349	1,869	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-18,247	-15,445	-6,637	-6,357	-4,335	-4,029	-447	-26	-528	-142	-283	0	-10,676	-772	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-1,862	-1,995	-473	-605	-436	-452	-43	0	-51	-13	-115	-23,233	0	-66	0	0	-86	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-1,153	0	-441	-439	-398	-383	0	0	0	-2	0	-9,654	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	296	-41	120	60	128	35	-176	-7	-432	-47	-4,073	0	637	10,134	0	-2,079	-969	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3,786	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-17,019	-22,940	-4,231	-3,270	-5,084	-7,393	-4,938	-257	-8,223	-7,557	-24,510	0	361	0	-41,154	-11,730	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	4,618	7,596	0	0	1,493	1,935	1,234	43	1,569	851	24,244	0	0	0	34,590	2,110	19,547	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	298	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,369	0	12,749	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-11	0	2	0	-5,209	0	-80	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-166	-196	-31	-33	-41	-63	-27	-2	-43	-42	0	0	0	0	-5,534	-2	-12,606	0	0	0	0	0	0	0	0	0	0	-27
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,064	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1,605	0	0	0	-3,830	0	-1,265	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-5	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	-18	0	0	0	0	-6	0	0	0	-155	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	2	5	0	0	0	1	0	0	0	0	633	0	0	0	8	1	13	0	0	0	0	0	0	0	0	0	0	0

Total - **240,627** **HGV-kilometers**

Consolidation Centres Study

Incremental Elasticity Model

Reduction in HGV-kilometers (Annual)

Retail 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gait	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-41	-39	0	18	-4	0	-55	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-53	-15	0	31	-3	0	-34	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-8	-18	0	4	-1	0	-14	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-2	-19	0	3	0	0	-9	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-13	-13	0	4	-1	0	-19	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-13	-6	0	6	-1	0	-21	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-3	0	0	2	0	0	-3	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-6	0	0	3	-1	0	-5	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-5	0	0	3	0	0	-9	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	8	-6	2	1	4	2	0	0	-1	0	0	0	0	2	-15	0	14	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	5	-5	1	0	3	0	0	0	-2	0	-11	0	0	0	0	0	-19	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-8	-7	-2	-1	-3	-3	0	0	0	0	-42	0	0	0	-52	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	52	44	9	0	19	16	3	0	3	2	373	0	0	0	166	0	215	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-14	0	0	0	-2	0	-37	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **345.5** **HGV-hours**

Retail 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gait	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-47	-45	0	18	-5	0	-62	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-60	-17	0	36	-4	0	-39	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-10	-20	0	4	-1	0	-16	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-2	-22	0	3	0	0	-10	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-15	-15	0	5	-1	0	-22	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-14	-7	0	7	-1	0	-24	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-4	0	0	2	0	0	-3	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-6	0	0	4	-1	0	-6	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-5	0	0	3	0	0	-10	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	9	-6	2	1	5	2	0	0	-1	0	0	0	0	2	-17	0	16	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	-5	0	0	3	0	0	-10	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	6	-6	1	1	3	0	-1	0	-2	0	-13	0	0	0	0	0	-21	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-9	-7	-2	-1	-3	-3	0	0	0	0	-47	0	0	0	-60	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	59	50	10	0	22	18	3	0	4	2	425	0	0	0	189	0	245	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-16	0	0	0	-3	0	-42	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **395.0** **HGV-hours**

Construction 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gait	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-17	-76	-26	2	-5	0	-13	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-39	-55	4	11	-7	3	-15	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-3	-34	-14	0	-1	0	-3	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1	-33	-18	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-5	-22	-12	0	-1	0	-4	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-7	-16	-6	1	-1	0	-7	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-6	-2	1	1	-1	1	-3	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-8	-2	2	1	-1	-1	-11	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	13	-17	3	2	6	3	-1	0	-7	0	0	5	6	0	-20	13	21	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-158	-150	-66	-65	-43	-32	-4	0	-5	-1	-3	0	-86	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-19	-19	-5	-7	-5	-4	0	0	0	0	-1	213	0	2	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-11	0	-4	-5	-4	-3	0	0	0	0	0	-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	5	-8	1	0	2	1	-2	0	-8	0	-37	0	6	123	0	-23	-11	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-45	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-121	-205	-25	-15	-34	-56	-38	-2	-80	-73	-226	0	7	0	-359	-90	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	55	82	0	0	18	23	15	1	17	9	308	0	0	0	470	28	253	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	154	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-63	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-1	-2	0	0	0	0	0	0	0	0	0	0	0	0	-34	0	-122	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-15	0	0	0	-21	0	-12	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **-** **1,561.0** **HGV-hours**

Construction 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gait	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-18	-83	-28	2	-6	0	-14	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-43	-60	5	12	-8	3	-16	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-4	-37	-16	0	-1	0	-4	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1	-36	-20	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-5	-24	-13	0	-1	0	-4	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-8	-17	-7	1	-2	0	-8	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-7	-2	1	1	-2	1	-3	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-11	-2	2	1	-3	3	-6	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-9	-2	2	1	-1	-1	-12	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	14	-19	3	2	6	5	-1	0	-8	0	0	6	7	0	-22	15	23	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-174	-165	-72	-71	-47	-36	-4	0	-6	-1	-3	0	-94	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-20	-21	-5	-7	-5	-5	0	0	-1	0	-1	254	0	3	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-12	0	-5	-5	-4	-4	0	0	0	0	0	-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	5	-9	1	0	2	1	-2	0	-9	0	-40	0	7	135	0	-25	-13	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-49	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-133	-225	-27	-16	-37	-61	-42	-2	-88	-81	-248	0	8	0	-395	-98	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	60	91	0	0	20	26	16	1	18	10	338	0	0	0	516	31	278	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	169	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-66	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-1	-2	0	0	0	-1	0	0	0	0	0	0	0	0	-37	0	-134	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-11	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-16	0	0	0	-23	0	-13	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **-** **1,730.4** **HGV-hours**

Consolidation Centres Study

Incremental Elasticity Model

Input Parameters

Site of Consolidation Centre	Falkirk

	Retail	**Construction**
Generalised Costs Parameters		
Distance Co-efficient	1.9	1.9
Time Co-efficient	2.7	2.7
Interchange Penalty Co-efficient	1	1
Consolidation Centre Fee (£ per tonne)	£2.00	£1.50
Incremental Elasticity Model Parameters		
Elasticity Factor	-0.9	-0.9
Minimum Decrease Cut-Off	0%	0%
Maximum Decrease Cut-Off	20%	20%
Average Load per HGV (Tonnes/Vehicle)	15.689	16.127

	Retail	**Construction**
Delivery Costs		
Delivery Rate (per km)	£0.11	£0.11
Minimum Delivery Cost	£9.00	£9.00

Distance/Time from zones to Consolidation Centre (km)	**Distance**	**Time**
Edinburgh Centre	40	39
Hermiston Gait	36	29
Cameron Toll	50	42
Fort Kinnaird	55	43
Leith	43	43
Granton	40	40
Airport	29	29
Ratho	29	31
Newbridge	26	25
Queensferry	30	32
Bathgate	18	25
Midlothian	51	39
East Lothian	80	63
Scottish Borders	114	98
Falkirk	0	0
Clackmannanshire	21	25
Fife	29	29
SPT North	91	78
SPT Central	47	38
SPT South	83	65
Swestrans	149	107
Tactran West	46	37
Tactran Central	74	61
Tactran East	108	89
Nestran	211	174
Hitrans	253	209
North East England	207	187
Rest of UK	491	313

Economic Parameters	**Values**	**Units**
Vehicle Operating Costs (VOC)	£0.08	per HGV-km
Time Saving	£12.80	per HGV-hr
SLM	£0.81	per HGV-km
Climate Change (Carbon)	£0.04	per HGV-km

Consolidation Centres Study

Incremental Elasticity Model

Results for Consolidation Centre at Falkirk

	2020 Low Growth		2020 High Growth	
	Retail	**Construction**	**Retail**	**Construction**
Tonnes Transferred	73,602	210,318	83,783	233,184
HGV equivalent Transferred	4,691	13,041	5,340	14,459
Tonnes-km Reduction	236,248	-495,472	269,002	-541,822
HGV-hrs Reduction	260	-221	295	-242
HGV-kms Reduction	15,058	-30,723	17,146	-33,597
Revenue	£147,204	£315,477	£167,565	£349,776
VOC	£1,235	-£2,519	£1,406	-£2,755
Time Saving	£3,325	-£2,834	£3,782	-£3,104
SLM	£12,211	-£24,914	£13,904	-£27,245
Climate Change (Carbon)	£581	-£1,186	£662	-£1,297
Total Benefit	£17,353	-£31,454	£19,754	-£34,401
PVB	***£164,556***	***£284,023***	***£187,319***	***£315,374***

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual Tonnes)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran West	23 Tactran Central	24 Tactran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,579	1,056	0	654	397	0	3,031	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,304	651	0	794	401	0	3,194	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	527	398	0	236	72	0	878	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	105	426	0	238	14	0	738	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	837	320	0	235	100	0	1,018	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	794	206	0	218	86	0	1,060	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	246	12	0	57	31	0	294	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	37	3	0	0	3	0	38	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	401	13	0	76	58	0	457	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	293	17	0	66	18	0	278	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,204	1,325	198	124	414	329	53	11	86	24	0	0	0	0	3,433	0	2,719	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,222	1,239	115	50	343	82	106	15	156	28	957	0	0	0	0	0	2,959	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	420	299	140	127	166	135	0	0	0	0	2,314	0	0	0	2,350	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	847	864	136	224	299	258	50	8	68	35	9,241	0	0	0	4,461	0	3,822	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	1	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	69	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,082	0	0	0	306	0	1,433	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	22	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	3	0	0	0	0	0	0	0	0	0	19	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **73,602** **tonnes**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran West	23 Tactran Central	24 Tactran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,697	1,205	0	744	453	0	3,448	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,783	740	0	904	456	0	3,646	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	598	452	0	266	82	0	988	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	120	485	0	269	16	0	835	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	951	361	0	267	115	0	1,149	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	902	232	0	246	98	0	1,198	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	287	14	0	63	35	0	328	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	45	5	0	0	3	0	54	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	460	17	0	87	65	0	518	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	328	28	0	79	24	0	335	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,369	1,511	226	143	474	372	62	14	104	30	0	0	0	0	3,903	0	3,088	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,392	1,412	131	56	391	93	121	16	178	32	1,092	0	0	0	0	0	3,369	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	471	321	149	139	181	158	0	0	0	0	2,617	0	0	0	2,677	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	965	984	155	256	341	294	57	9	78	40	10,532	0	0	0	5,085	0	4,356	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	2	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0	78	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,232	0	0	0	347	0	1,634	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	24	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	3	0	0	0	0	0	0	0	0	0	22	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **83,783** **tonnes**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran West	23 Tactran Central	24 Tactran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,077	2,065	1,669	70	491	70	741	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,531	2,408	2,175	353	891	515	1,425	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	212	773	608	26	90	20	208	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	36	738	637	22	16	17	150	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	300	559	563	22	115	22	214	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	451	552	563	32	148	29	348	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	514	110	108	25	200	136	333	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	6	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	526	146	149	33	104	95	368	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,085	4,176	334	188	623	792	460	21	761	295	0	1,639	219	0	4,820	1,066	3,980	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,381	4,538	1,626	1,565	1,192	1,120	148	9	183	70	152	0	4,151	2,362	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	461	585	107	132	106	119	14	0	18	7	62	5,094	0	274	0	0	58	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	299	54	104	100	100	68	2	0	3	4	0	2,065	1,103	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,117	2,018	116	44	266	125	444	15	662	128	3,217	0	212	0	0	1,983	1,847	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,679	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	6,523	9,440	1,861	1,581	2,054	2,702	1,762	96	2,682	1,973	12,856	0	605	0	16,564	3,944	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	917	1,663	281	200	284	383	281	10	379	170	7,844	1,055	63	780	12,994	570	4,624	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0	2,079	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	34	0	1	0	4,070	0	310	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	64	81	14	16	17	23	10	1	14	11	0	0	0	0	2,517	1	3,036	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	256	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,142	0	0	0	2,723	0	485	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	173	34	20	37	55	76	1	0	1	1	46	0	0	0	279	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	1	1	0	0	0	0	0	0	0	0	148	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0

Total **210,318** **tonnes**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran West	23 Tactran Central	24 Tactran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,184	2,296	1,832	78	539	77	817	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,779	2,643	2,388	387	978	566	1,567	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	233	851	668	28	99	22	227	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	39	809	700	24	17	19	166	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	330	614	618	24	126	24	233	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	496	604	618	35	162	32	385	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	564	122	118	27	219	150	370	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	7	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	854	150	146	35	326	188	559	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	580	164	167	34	114	102	406	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,267	4,586	367	207	684	869	506	22	856	258	0	1,796	241	0	5,296	1,172	4,398	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,808	4,982	1,784	1,717	1,309	1,228	163	9	201	77	164	0	4,555	2,594	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	506	642	118	145	116	131	16	0	19	7	66	5,592	0	299	0	0	62	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	329	59	115	110	110	74	3	0	4	4	0	2,266	1,212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,226	2,215	127	49	292	137	488	16	727	140	3,531	0	233	0	0	2,177	2,029	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,063	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	7,166	10,363	2,043	1,735	2,259	2,966	1,933	98	2,947	2,176	14,117	0	669	0	18,183	4,332	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,006	1,826	309	219	312	421	309	11	416	187	8,612	1,158	69	857	14,267	626	5,076	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329	0	2,283	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	38	0	1	0	4,468	0	341	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	70	89	15	17	18	25	11	1	16	12	0	0	0	0	2,763	1	3,333	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	0	281	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,253	0	0	0	2,990	0	532	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	190	37	22	40	60	84	1	0	1	1	51	0	0	0	306	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	1	2	0	0	0	0	0	0	0	0	162	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0

Total **233,184** **tonnes**

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual HGV equivalent)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cectran East	24 actran Eas	25 Nestran	26 Htrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	164	67	0	42	25	0	193	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	211	41	0	51	26	0	204	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	34	25	0	15	5	0	56	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	7	27	0	15	1	0	47	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	53	20	0	15	6	0	65	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	51	13	0	14	5	0	68	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	16	1	0	4	2	0	19	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	26	1	0	5	4	0	29	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	19	1	0	4	1	0	18	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	77	84	13	8	26	21	3	1	6	2	0	0	0	0	219	0	173	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	78	70	7	3	22	5	7	1	10	2	61	0	0	0	0	0	189	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	27	19	9	8	11	9	0	0	0	0	147	0	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	54	55	9	14	19	16	3	1	4	2	589	0	0	0	284	0	244	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	69	0	0	0	19	0	91	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 4,691 **HGVs**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cectran East	24 actran Eas	25 Nestran	26 Htrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	187	77	0	47	29	0	220	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	240	47	0	58	29	0	232	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	38	29	0	17	5	0	63	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	8	31	0	17	1	0	53	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	61	23	0	17	7	0	73	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	58	15	0	16	6	0	76	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	18	1	0	4	2	0	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	29	1	0	6	4	0	33	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	21	2	0	5	2	0	21	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	87	96	14	9	30	24	4	1	7	2	0	0	0	0	249	0	197	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	89	90	8	4	25	6	8	1	11	2	70	0	0	0	0	0	215	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	30	20	9	9	12	10	0	0	0	0	167	0	0	0	171	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	61	63	10	16	22	19	4	1	5	3	671	0	0	0	324	0	278	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	5	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	79	0	0	0	22	0	104	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 5,340 **HGVs**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cectran East	24 actran Eas	25 Nestran	26 Htrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	67	130	104	4	30	4	46	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	157	149	135	22	55	32	88	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	13	48	38	2	6	1	13	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	46	40	1	1	1	9	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	19	35	35	1	7	1	13	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	28	34	35	2	9	2	22	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	32	7	7	2	12	8	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	33	9	9	2	6	6	23	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	128	259	21	12	39	49	29	1	48	15	0	102	14	0	299	66	247	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	272	281	101	97	74	69	9	1	11	4	9	0	257	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	29	36	7	8	7	7	1	0	1	0	4	316	0	17	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	19	3	6	6	6	0	0	0	0	0	6	128	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	69	125	7	3	16	8	28	1	41	8	199	0	13	0	0	123	115	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	405	585	115	98	127	168	109	6	166	122	797	0	38	0	1,027	245	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	57	103	17	12	18	24	17	1	24	11	486	65	4	48	806	35	287	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	129	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	252	0	19	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	5	1	1	1	1	0	0	1	1	0	0	0	0	156	0	188	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	16	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	71	0	0	0	169	0	30	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	11	2	1	2	3	5	0	0	0	0	3	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 13,041 **HGVs**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Cectran East	24 actran Eas	25 Nestran	26 Htrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	73	142	114	5	33	5	51	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	172	164	148	24	61	35	97	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	14	53	41	2	6	1	14	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	50	43	1	1	1	10	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	20	38	38	1	8	1	14	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	31	37	38	2	10	2	24	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	35	8	7	2	14	9	23	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	53	9	9	2	20	12	35	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	36	10	10	2	7	6	25	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	141	284	23	13	42	54	31	1	53	16	0	111	15	0	328	73	271	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	298	309	111	106	81	76	10	1	12	5	10	0	282	161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	31	40	7	9	7	8	1	0	1	0	4	347	0	19	0	0	4	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	20	4	7	7	7	0	0	0	0	0	7	141	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	76	137	8	3	18	8	30	1	45	9	219	0	14	0	0	135	126	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	444	643	127	108	140	184	120	6	183	135	875	0	42	0	1,128	269	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	62	113	19	14	19	26	19	1	26	12	534	72	4	53	885	39	315	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	142	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	277	0	21	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	6	1	1	1	2	1	0	1	1	0	0	0	0	171	0	207	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	17	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	78	0	0	0	185	0	33	0	0	0	0	0	0	0	0	0	0	0
26 Htrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	12	2	1	2	4	5	0	0	0	0	3	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 14,459 **HGVs**

Consolidation Centres Study
Incremental Elasticity Model

Reduction in Tonnes-kilometres (Annual)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 Clackmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran Wes	23 Tactran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-16,247	-34,639	0	23,333	556	0	-36,257	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-29,406	-11,321	0	36,748	561	0	-16,610	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-4,428	-16,803	0	4,674	151	0	-15,536	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-889	-19,898	0	2,949	27	0	-14,387	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-4,939	-8,908	0	7,394	181	0	-13,033	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-4,766	-5,044	0	8,588	137	0	-14,732	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-1,355	-65	0	3,334	69	0	-1,294	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-217	-17	0	0	4	0	-202	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-2,447	-6	0	4,786	75	0	-2,424	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	907	146	0	4,783	37	0	-5,511	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	19,031	11,928	4,814	3,598	7,875	5,295	325	62	225	373	0	0	0	0	3,433	0	55,464	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-1,159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	50,331	45,831	6,060	2,832	15,224	3,414	3,351	450	4,319	901	17,894	0	0	0	0	0	87,566	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-546	388	503	840	116	-432	0	0	0	0	20,827	0	0	0	1,175	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	23,280	17,794	4,901	9,137	9,192	7,157	903	139	970	950	-10,165	0	0	0	-33,013	0	59,628	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	-133	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	136	0	-2,149	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,731	0	0	0	489	0	-45,011	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	207	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-38	0	0	0	0	0	0	0	0	0	-198	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-28	0	0	0	-6	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 236,248 tonnes-kilometres

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 Clackmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran Wes	23 Tactran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-18,505	-39,529	0	26,571	634	0	-41,381	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-33,493	-12,868	0	41,871	639	0	-18,957	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-5,026	-19,060	0	5,267	172	0	-17,485	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1,020	-22,652	0	3,330	30	0	-16,288	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-5,610	-10,034	0	8,371	207	0	-14,712	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-5,414	-5,677	0	9,708	157	0	-16,648	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-1,576	-74	0	3,704	77	0	-1,441	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-264	-35	0	0	4	0	-284	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-2,807	-8	0	5,499	85	0	-2,746	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	1,017	237	0	5,712	47	0	-6,634	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	21,638	13,602	5,494	4,144	9,006	5,984	379	78	271	466	0	0	0	0	3,903	0	62,987	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-1,424	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	57,352	52,234	6,888	3,208	17,365	3,870	3,820	501	4,922	1,007	20,412	0	0	0	0	0	99,718	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-613	417	536	916	127	-505	0	0	0	0	23,552	0	0	0	1,339	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	26,532	20,272	5,589	10,431	10,475	8,152	1,021	158	1,110	1,080	-11,585	0	0	0	-37,627	0	67,952	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	-150	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155	0	-2,429	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,971	0	0	0	556	0	-51,294	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	229	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-43	0	0	0	0	0	0	0	0	0	-226	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-32	0	0	0	-6	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 269,002 tonnes-kilometres

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 Clackmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran Wes	23 Tactran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-6,786	-68,712	-2,838	2,509	688	1,276	-8,897	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-22,523	-41,899	25,452	16,359	1,247	9,432	-7,409	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-1,778	-32,639	-10,705	517	190	381	-3,674	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-303	-34,452	-15,871	279	30	327	-2,923	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-1,771	-15,546	-3,324	697	207	407	-2,734	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-2,708	-13,512	1,127	1,280	237	281	-4,834	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-2,825	-581	2,542	1,473	439	2,606	-1,466	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-92	-31	96	0	6	110	-48	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	1,632	1,259	5,627	2,393	209	341	-7,279	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	32,633	37,584	8,120	5,447	11,837	12,748	2,806	115	2,030	3,592	0	37,197	11,305	0	4,820	19,516	81,198	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-191,430	-147,481	-69,085	-66,038	-42,804	-39,631	-3,952	-258	-4,550	-855	-1,567	0	-84,270	30,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-19,211	-19,013	-5,043	-6,554	-4,551	-4,511	-378	0	-437	-85	-642	-251,636	0	3,319	0	0	-291	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-11,628	-1,741	-4,616	-4,671	-4,055	-3,746	-62	-3	-86	-45	0	-105,324	-24,829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	46,004	74,650	6,088	2,519	11,809	5,161	13,995	449	18,338	4,079	60,155	0	17,272	0	0	43,418	54,677	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	8	0	0	0	0	0	0	0	0	7	0	0	0	939	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-8,480	12,272	6,699	10,432	1,438	-8,646	-7,401	-507	-21,453	-37,486	115,708	0	27,661	0	8,282	-26,425	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	25,209	34,257	10,135	8,128	8,723	10,609	5,035	171	5,421	4,582	-8,628	37,879	4,071	77,723	-96,158	4,501	72,135	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,461	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2,186	0	32,437	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	3	0	0	0	0	0	0	0	0	510	0	45	0	2,442	0	4,842	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-349	-220	-7	38	-59	-168	-80	-6	-173	-256	0	0	0	0	1,258	-14	-85,603	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	-8,015	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,827	0	0	0	4,357	0	-15,215	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-33	-55	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-2,165	-1,106	-354	-755	-775	-671	-14	0	-19	-9	-477	0	0	0	474	5	-1	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-16	-30	0	0	0	-3	0	0	0	0	-1,699	0	0	0	-12	2	35	0	0	0	0	0	0	0	0	0	0	0

Total - 495,472 tonnes-kilometres

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 Clackmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 Tactran Wes	23 Tactran Cent	24 Tactran Eas	25 Nestran	26 Hitrans	27 North East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-7,459	-75,322	-3,115	2,769	755	1,404	-9,799	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-24,729	-45,986	27,942	17,936	1,369	10,356	-8,149	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-1,958	-35,931	-11,757	551	208	424	-4,024	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-334	-37,795	-17,418	296	32	360	-3,228	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-1,944	-17,080	-3,648	742	226	452	-2,981	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-2,975	-14,803	1,237	1,391	260	310	-5,354	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-3,100	-645	2,783	1,563	482	2,859	-1,629	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-96	-31	96	0	6	122	-48	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-5,212	-75	4,155	2,238	424	3,379	-2,963	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	1,798	1,407	6,283	2,480	228	366	-8,043	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	35,821	41,273	8,928	5,993	13,001	13,998	3,085	123	2,227	3,955	0	40,777	12,456	0	5,296	21,453	89,110	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-210,128	-161,903	-75,813	-72,463	-47,004	-43,486	-4,351	-258	-4,991	-942	-1,692	0	-92,462	32,945	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-21,111	-20,866	-5,546	-7,202	-4,992	-4,985	-421	0	-479	-88	-690	-276,254	0	3,622	0	0	-308	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-12,781	-1,913	-5,082	-5,134	-4,460	-4,110	-67	-3	-94	-47	0	-115,583	-27,266	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	50,512	81,968	6,686	2,784	12,956	5,667	15,379	493	20,124	4,482	66,038	0	18,950	0	0	47,679	60,060	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	8	0	0	0	0	0	0	0	0	7	0	0	0	1,031	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-9,316	13,472	7,354	11,451	1,581	-9,491	-8,118	-519	-23,575	-41,352	127,052	0	30,587	0	9,092	-29,026	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	27,677	37,608	11,150	8,926	9,573	11,649	5,531	187	5,952	5,030	-9,473	41,559	4,490	85,401	-105,574	4,942	79,190	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,602	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2,400	0	35,616	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	3	0	0	0	0	0	0	0	0	555	0	45	0	2,681	0	5,312	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-384	-241	-7	42	-64	-185	-88	-6	-190	-280	0	0	0	0	1,382	-14	-93,981	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	0	-8,803	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	2,005	0	0	0	4,784	0	-16,690	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-38	-55	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-2,377	-1,215	-388	-830	-851	-737	-16	0	-22	-9	-523	0	0	0	521	5	-1	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-17	-33	0	0	0	-3	0	0	0	0	-1,866	0	0	0	-14	2	37	0	0	0	0	0	0	0	0	0	0	0

Total - 541,822 tonnes-kilometres

Consolidation Centres Study
Incremental Elasticity Model

Reduction in HGV-kilometers (Annual)

Retail 2020 Low Growth

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Edinburgh Cent	Hermiston Gai	Cameron To	Fort Kinnair	Leith	Granton	Airport	Ratho	Newbridge	Queensferr	West Lothian	Midlothian	East Lothia	ottish Bord	Falkirk	ckmannans	Fife	SPT North	SPT Central	SPT South	Swestrans	actran We	actran Cent	actran Eas	Nestran	Hitrans	rth East Engl	Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-1,036	-2,208	0	1,487	35	0	-2,311	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-1,874	-722	0	2,342	36	0	-1,059	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-282	-1,071	0	298	10	0	-990	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-57	-1,268	0	188	2	0	-917	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-315	-568	0	471	12	0	-831	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-304	-321	0	547	9	0	-939	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-86	-4	0	213	4	0	-82	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-14	-1	0	0	0	0	-13	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-156	0	0	305	5	0	-154	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	58	9	0	305	2	0	-351	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,213	760	307	229	502	338	21	4	14	24	0	0	0	0	219	0	3,535	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	3,208	2,921	386	181	970	218	214	29	275	57	1,141	0	0	0	0	0	5,581	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-35	25	32	54	7	-28	0	0	0	0	1,327	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,484	1,134	312	582	586	456	58	9	62	61	-648	0	0	0	-2,104	0	3,801	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-8	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	-137	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	110	0	0	0	31	0	-2,869	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	13	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-2	0	0	0	0	0	0	0	0	0	-13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 15,058 **HGV-kilometers**

Retail 2020 High Growth

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Edinburgh Cent	Hermiston Gai	Cameron To	Fort Kinnair	Leith	Granton	Airport	Ratho	Newbridge	Queensferr	West Lothian	Midlothian	East Lothia	ottish Bord	Falkirk	ckmannans	Fife	SPT North	SPT Central	SPT South	Swestrans	actran We	actran Cent	actran Eas	Nestran	Hitrans	rth East Engl	Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-1,179	-2,520	0	1,694	40	0	-2,638	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-2,135	-820	0	2,669	41	0	-1,208	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-320	-1,215	0	336	11	0	-1,115	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-65	-1,444	0	212	2	0	-1,038	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-358	-640	0	534	13	0	-938	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-345	-362	0	619	10	0	-1,061	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-100	-5	0	236	5	0	-92	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-17	-2	0	0	0	0	-18	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-179	-1	0	350	5	0	-175	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	65	15	0	364	3	0	-423	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,379	867	350	264	574	381	24	5	17	30	0	0	0	0	249	0	4,015	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	3,656	3,329	439	205	1,107	247	243	32	314	64	1,301	0	0	0	0	0	6,356	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-39	27	34	58	8	-32	0	0	0	0	1,501	0	0	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,691	1,292	356	665	668	520	65	10	71	69	-738	0	0	0	-2,398	0	4,331	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	-155	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	126	0	0	0	35	0	-3,269	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-3	0	0	0	0	0	0	0	0	0	-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 17,146 **HGV-kilometers**

Construction 2020 Low Growth

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Edinburgh Cent	Hermiston Gai	Cameron To	Fort Kinnair	Leith	Granton	Airport	Ratho	Newbridge	Queensferr	West Lothian	Midlothian	East Lothia	ottish Bord	Falkirk	ckmannans	Fife	SPT North	SPT Central	SPT South	Swestrans	actran We	actran Cent	actran Eas	Nestran	Hitrans	rth East Engl	Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-421	-4,261	-176	156	43	79	-552	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-1,397	-2,598	1,578	1,014	77	585	-459	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-110	-2,024	-664	32	12	24	-228	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-19	-2,136	-984	17	2	20	-181	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-110	-964	-206	43	13	25	-170	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-168	-838	70	79	15	17	-300	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-175	-36	158	91	27	162	-91	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-6	-2	6	0	0	7	-3	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	101	78	349	148	13	21	-451	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,024	2,331	503	338	734	790	174	7	126	223	0	2,306	701	0	299	1,210	5,035	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-11,870	-9,145	-4,284	-4,095	-2,654	-2,457	-245	-16	-282	-53	-97	0	-5,225	1,860	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-1,191	-1,179	-313	-406	-282	-280	-23	0	-27	-5	-40	-15,603	0	206	0	0	-18	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-721	-108	-286	-290	-251	-232	-4	0	-5	-3	0	-6,531	-1,540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	2,853	4,629	378	156	732	320	868	28	1,137	253	3,730	0	1,071	0	0	2,692	3,390	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-526	761	415	647	89	-536	-459	-31	-1,330	-2,324	7,175	0	1,715	0	514	-1,639	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,563	2,124	628	504	541	658	312	11	336	284	-535	2,349	252	4,819	-5,963	279	4,473	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-91	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-136	0	2,011	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	32	0	3	0	151	0	300	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-22	-14	0	2	-4	-10	-5	0	-11	-16	0	0	0	0	78	-1	-5,308	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	-497	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	113	0	0	0	270	0	-943	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-3	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-134	-69	-22	-47	-48	-42	-1	0	-1	-1	-30	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-1	-2	0	0	0	0	0	0	0	0	-105	0	0	0	-1	0	2	0	0	0	0	0	0	0	0	0	0	0

Total - 30,723 **HGV-kilometers**

Construction 2020 High Growth

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Edinburgh Cent	Hermiston Gai	Cameron To	Fort Kinnair	Leith	Granton	Airport	Ratho	Newbridge	Queensferr	West Lothian	Midlothian	East Lothia	ottish Bord	Falkirk	ckmannans	Fife	SPT North	SPT Central	SPT South	Swestrans	actran We	actran Cent	actran Eas	Nestran	Hitrans	rth East Engl	Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-463	-4,671	-193	172	47	87	-608	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-1,533	-2,852	1,733	1,112	85	642	-505	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-121	-2,228	-729	34	13	26	-249	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-21	-2,344	-1,080	18	2	22	-200	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-121	-1,059	-226	46	14	28	-185	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-184	-918	77	86	16	19	-332	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-192	-40	173	97	30	177	-101	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	-6	-2	6	0	0	8	-3	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-323	-5	258	139	26	210	-184	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	111	87	390	154	14	23	-499	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,221	2,559	554	372	806	868	191	8	138	245	0	2,528	772	0	328	1,330	5,526	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-13,030	-10,039	-4,701	-4,493	-2,915	-2,696	-270	-16	-310	-58	-105	0	-5,733	2,043	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-1,309	-1,294	-344	-447	-310	-309	-26	0	-30	-5	-43	-17,130	0	225	0	0	-19	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-792	-119	-315	-318	-277	-255	-4	0	-6	-3	0	-7,167	-1,691	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	3,132	5,083	415	173	803	351	954	31	1,248	278	4,095	0	1,175	0	0	2,956	3,724	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-578	835	456	710	98	-589	-503	-32	-1,462	-2,564	7,878	0	1,897	0	564	-1,800	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,716	2,332	691	553	594	722	343	12	369	312	-587	2,577	278	5,296	-6,546	306	4,910	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-99	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-149	0	2,208	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	34	0	3	0	166	0	329	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-24	-15	0	3	-4	-11	-5	0	-12	-17	0	0	0	0	86	-1	-5,828	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	-546	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	124	0	0	0	297	0	-1,035	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-3	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-147	-75	-24	-51	-53	-46	-1	0	-1	-1	-32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-1	-2	0	0	0	0	0	0	0	0	-116	0	0	0	-1	0	2	0	0	0	0	0	0	0	0	0	0	0

Total - 33,597 **HGV-kilometers**

Consolidation Centres Study
Incremental Elasticity Model

Reduction in HGV-kilometers (Annual)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gai	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-14	-28	0	23	0	0	-22	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-18	-8	0	40	1	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-3	-14	0	6	0	0	-5	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1	-15	0	5	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-5	-10	0	7	0	0	-10	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-5	-4	0	9	0	0	-11	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-3	0	0	4	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-1	0	0	4	0	0	-5	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	12	-1	3	2	5	3	0	0	-1	0	0	0	0	0	-4	0	23	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	51	41	5	2	16	4	4	0	4	1	24	0	0	0	0	0	91	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	1	0	1	2	1	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	18	9	3	6	7	6	1	0	0	1	0	0	0	0	-14	0	61	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	0	0	-43	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 259.8 **HGV-hours**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gai	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-16	-32	0	26	0	0	-26	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-20	-9	0	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-3	-15	0	7	0	0	-5	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	-1	-18	0	6	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-6	-11	0	7	0	0	-11	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-6	-5	0	10	0	0	-13	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-3	0	0	5	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-1	0	0	5	0	0	-6	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	13	-2	3	2	6	4	0	0	-1	0	0	0	0	0	-4	0	26	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	58	46	6	3	18	4	4	1	4	1	28	0	0	0	0	0	104	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	2	0	1	2	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	20	10	4	7	8	7	1	0	0	1	0	0	0	0	-16	0	69	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-8	0	0	0	0	0	-49	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 295.5 **HGV-hours**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gai	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-6	-54	-9	2	0	1	-5	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-13	-30	27	17	2	8	0	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-1	-26	-8	1	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	0	-26	-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-2	-17	-7	1	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-3	-11	-1	1	0	0	-4	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-2	-1	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-2	0	4	2	0	0	-7	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	19	-4	4	2	8	7	0	0	-5	1	0	10	7	0	-5	17	33	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-113	-103	-49	-49	-31	-21	-2	0	-3	-1	-1	0	-43	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-14	-13	-4	-5	-3	-3	0	0	0	0	0	-179	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-8	-1	-3	-4	-3	-2	0	0	0	0	0	-81	-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	45	65	5	2	12	5	14	0	16	5	80	0	14	0	0	49	55	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	20	0	15	20	11	3	0	0	-22	-31	53	0	20	0	0	-4	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	19	17	7	5	7	8	3	0	2	2	0	21	3	63	-40	6	72	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	32	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-82	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-7	0	0	0	3	0	-14	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-5	0	-1	-1	-2	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - 221.4 **HGV-hours**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gai	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	-6	-59	-9	3	0	1	-6	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	-14	-33	30	19	2	9	0	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	-1	-28	-9	1	0	0	-1	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	0	-28	-13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	-2	-18	-8	1	0	0	-2	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	-3	-12	-1	1	0	0	-4	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	-2	-1	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	-5	-1	3	2	-1	4	-2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	-2	0	4	2	0	1	-8	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	21	-5	5	3	8	8	1	0	-5	1	0	11	8	0	-5	18	36	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-124	-113	-53	-53	-34	-23	-3	0	-4	-1	-1	0	-47	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-15	-15	-4	-6	-4	-3	0	0	0	0	0	-196	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-9	-1	-4	-4	-3	-3	0	0	0	0	0	-89	-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	49	71	6	2	13	6	16	1	17	5	88	0	15	0	0	54	61	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	22	0	17	22	12	3	0	0	-24	-34	58	0	22	0	0	-4	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	21	19	7	5	7	9	4	0	2	3	0	23	3	69	-44	6	79	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	35	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-90	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-8	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-8	0	0	0	3	0	-15	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-6	0	-1	-1	-2	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total - 242.5 **HGV-hours**

Consolidation Centres Study

Incremental Elasticity Model

Input Parameters

Site of Consolidation Centre	Livingston

	Retail	**Construction**
Generalised Costs Parameters		
Distance Co-efficient	1.9	1.9
Time Co-efficient	2.7	2.7
Interchange Penalty Co-efficient	1	1
Consolidation Centre Fee (£ per tonne)	£2.00	£1.50
Incremental Elasticity Model Parameters		
Elasticity Factor	-0.9	-0.9
Minimum Decrease Cut-Off	0%	0%
Maximum Decrease Cut-Off	20%	20%
Average Load per HGV (Tonnes/Vehicle)	15.689	16.127

	Retail	**Construction**
Delivery Costs		
Delivery Rate (per km)	£0.11	£0.11
Minimum Delivery Cost	£9.00	£9.00

Distance/Time from zones to Consolidation Centre (km)	**Distance**	**Time**
Edinburgh Centre	25	29
Hermiston Gait	15	14
Cameron Toll	28	32
Fort Kinnaird	37	33
Leith	28	32
Granton	27	34
Airport	19	22
Ratho	13	16
Newbridge	15	17
Queensferry	29	28
Bathgate	12	0
Midlothian	33	29
East Lothian	62	53
Scottish Borders	96	88
Falkirk	42	36
Clackmannanshire	58	50
Fife	35	34
SPT North	100	82
SPT Central	55	43
SPT South	92	69
Swestrans	133	103
Tactran West	83	63
Tactran Central	76	58
Tactran East	107	84
Nestran	210	169
Hitrans	259	209
North East England	189	177
Rest of UK	475	309

Economic Parameters	**Values**	**Units**
Vehicle Operating Costs (VOC)	£0.08	per HGV-km
Time Saving	£12.80	per HGV-hr
SLM	£0.81	per HGV-km
Climate Change (Carbon)	£0.04	per HGV-km

Consolidation Centres Study

Incremental Elasticity Model

Results for Consolidation Centre at Livingston

	2020 Low Growth		2020 High Growth	
	Retail	**Construction**	**Retail**	**Construction**
Tonnes Transferred	73,660	215,227	83,849	238,576
HGV equivalent Transferred	4,695	13,346	5,344	14,794
Tonnes-km Reduction	239,197	-540,576	272,249	-565,924
HGV-hrs Reduction	438	33	499	56
HGV-kms Reduction	15,246	-33,520	17,353	-35,092
Revenue	£147,320	£322,841	£167,698	£357,865
VOC	£1,250	-£2,749	£1,423	-£2,878
Time Saving	£5,608	£423	£6,384	£711
SLM	£12,364	-£27,182	£14,072	-£28,457
Climate Change (Carbon)	£589	-£1,294	£670	-£1,355
Total Benefit	£19,810	-£30,803	£22,549	-£31,978
PVB	***£167,131***	***£292,038***	***£190,247***	***£325,886***

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual Tonnes)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Central	24 actran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,579	1,056	0	654	397	0	3,031	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,304	651	0	794	401	0	3,194	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	527	398	0	236	72	0	878	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	105	426	0	238	14	0	738	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	837	320	0	235	100	0	1,018	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	794	206	0	218	86	0	1,060	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	246	12	0	64	31	0	294	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	37	3	0	0	3	0	38	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	401	13	0	85	58	0	457	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	293	17	0	67	18	0	278	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,204	1,325	198	124	414	329	53	11	86	24	0	0	0	0	3,433	0	2,719	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,222	1,239	115	50	343	82	106	15	156	28	957	0	0	0	0	0	2,959	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	420	299	140	127	166	135	0	0	0	0	2,314	0	0	0	2,350	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	847	864	136	198	299	258	50	8	68	35	9,241	0	0	0	4,461	0	3,822	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	1	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0	69	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,095	0	0	0	309	0	1,459	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	21	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	6	0	0	0	0	0	0	0	0	0	34	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **73,660** **tonnes**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Central	24 actran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	2,697	1,205	0	744	453	0	3,448	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	3,783	740	0	904	456	0	3,646	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	598	452	0	266	82	0	988	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	120	485	0	269	16	0	835	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	951	361	0	267	115	0	1,149	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	902	232	0	246	98	0	1,198	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	287	14	0	71	35	0	328	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	45	5	0	0	3	0	54	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	460	17	0	97	65	0	518	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	328	28	0	80	24	0	335	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,369	1,511	226	143	474	372	62	14	104	30	0	0	0	0	3,903	0	3,088	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,392	1,412	131	56	391	93	121	16	178	32	1,092	0	0	0	0	0	3,349	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	471	321	149	139	181	158	0	0	0	0	2,617	0	0	0	2,677	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	965	984	155	226	341	294	57	9	78	40	10,532	0	0	0	5,085	0	4,356	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	2	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	0	78	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,247	0	0	0	352	0	1,662	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	23	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	6	0	0	0	0	0	0	0	0	0	39	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **83,849** **tonnes**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Central	24 actran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,077	2,065	1,669	70	491	70	741	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,531	2,408	2,175	442	891	515	1,425	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	212	773	608	26	90	20	208	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	36	738	637	22	16	17	150	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	300	559	563	22	115	22	214	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	451	552	563	32	148	29	348	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	514	110	108	28	200	136	333	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	6	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	526	146	149	33	104	95	368	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,085	4,176	334	188	623	792	460	21	761	295	0	1,639	219	0	4,820	1,066	3,980	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,381	4,538	1,626	1,565	1,192	1,120	148	9	183	70	152	0	4,151	2,362	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	461	585	107	132	106	119	14	0	18	7	62	5,094	0	376	0	0	58	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	299	263	104	100	100	66	6	0	6	0	2,065	2,474	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,117	2,018	116	44	266	125	444	15	662	128	3,217	0	212	1,812	0	1,983	1,847	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,679	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	6,523	9,440	1,861	1,581	2,054	2,702	1,762	96	2,682	1,973	12,856	0	605	0	16,564	3,944	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	917	1,663	247	177	284	383	281	10	379	170	7,844	929	57	731	12,994	570	4,624	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	464	0	2,726	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	34	0	0	0	4,070	0	310	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	64	81	14	16	17	23	10	1	14	11	0	0	0	0	2,517	1	3,036	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	256	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,156	0	0	0	2,757	0	493	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	300	166	38	77	98	125	1	0	2	1	78	0	2	0	409	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	1	3	0	0	0	0	0	0	0	0	243	0	1	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0

Total **215,227** **tonnes**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameson Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Central	24 actran East	25 Nestran	26 Hitrans	27 North East Englan	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,184	2,296	1,832	78	539	77	817	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,779	2,643	2,388	485	978	566	1,567	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	233	851	668	28	99	22	227	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	39	809	700	24	17	19	166	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	330	614	618	24	126	24	233	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	496	604	618	35	162	32	385	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	564	122	118	30	219	150	370	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	16	5	4	0	4	7	9	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	854	150	146	39	326	188	559	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	580	164	167	35	114	102	406	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,267	4,586	367	207	684	869	506	22	836	258	0	1,796	241	0	5,296	1,172	4,368	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	4,808	4,982	1,784	1,717	1,309	1,228	163	9	201	77	164	0	4,555	2,594	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	506	642	118	145	116	131	16	0	19	7	66	5,592	0	411	0	0	62	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	329	289	115	110	110	73	7	0	9	7	0	2,266	2,717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	1,226	2,215	127	49	292	137	488	16	727	140	3,531	0	233	1,989	0	2,177	2,029	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,063	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	7,166	10,363	2,043	1,735	2,259	2,966	1,933	98	2,947	2,176	14,117	0	669	0	18,183	4,332	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,006	1,826	272	195	312	421	309	11	416	187	8,612	1,020	63	803	14,267	626	5,076	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	2,993	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	38	0	0	0	4,468	0	341	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	70	89	15	17	18	25	11	1	16	12	0	0	0	0	2,763	1	3,333	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	0	281	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	1,269	0	0	0	3,027	0	541	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
27 North East England	330	182	42	84	108	137	2	0	2	1	85	0	2	0	449	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	2	3	0	0	0	0	0	0	0	0	267	0	2	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0

Total **238,576** **tonnes**

Consolidation Centres Study

Incremental Elasticity Model

Transferred Freight (Annual HGV equivalent)

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wrexctran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	164	67	0	42	25	0	193	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	211	41	0	51	26	0	204	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	34	25	0	15	5	0	56	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	7	27	0	15	1	0	47	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	53	20	0	15	6	0	65	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	51	13	0	14	5	0	68	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	16	1	0	4	2	0	19	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	26	1	0	5	4	0	29	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	19	1	0	4	1	0	18	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	77	84	13	8	26	21	3	1	6	2	0	0	0	0	219	0	173	173	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	78	79	7	3	22	5	7	1	10	2	61	0	0	0	0	0	189	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	27	19	9	8	11	9	0	0	0	0	147	0	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	54	55	9	13	19	16	3	1	4	2	589	0	0	0	284	0	244	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	70	0	0	0	20	0	93	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **4,695** **HGVs**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wrexctran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	187	77	0	47	29	0	220	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	240	47	0	58	29	0	232	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	38	29	0	17	5	0	63	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	8	31	0	17	1	0	53	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	61	23	0	17	7	0	73	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	58	15	0	16	6	0	76	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	18	1	0	5	2	0	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	29	1	0	6	4	0	33	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	21	2	0	5	2	0	21	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	87	96	14	9	30	24	4	1	7	2	0	0	0	0	249	0	197	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	89	90	8	4	25	6	8	1	11	2	70	0	0	0	0	0	215	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	30	20	9	9	12	10	0	0	0	0	167	0	0	0	171	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	61	63	10	14	22	19	4	1	5	3	671	0	0	0	324	0	278	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	5	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	79	0	0	0	22	0	106	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **5,344** **HGVs**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wrexctran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	67	130	104	4	30	4	46	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	157	149	135	27	55	32	88	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	13	48	38	2	6	1	13	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	46	40	1	1	1	9	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	19	35	35	1	7	1	13	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	28	34	35	2	9	2	22	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	32	7	7	2	12	8	21	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	33	9	9	2	6	6	23	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	128	259	21	12	39	49	29	1	48	15	0	102	14	0	299	66	247	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	272	281	101	97	74	69	9	1	11	4	9	0	257	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	29	36	7	8	7	7	1	0	1	0	4	316	0	23	0	4	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	19	16	6	6	6	5	0	0	1	0	6	128	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	69	125	7	3	16	8	28	1	41	8	199	0	13	112	0	123	115	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	405	585	115	98	127	168	109	6	166	122	797	0	38	0	1,027	245	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	57	103	15	11	18	24	17	1	24	11	486	58	4	45	806	35	287	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	169	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	252	0	19	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	5	1	1	1	1	0	0	1	1	0	0	0	0	156	0	188	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	16	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	72	0	0	0	171	0	31	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	19	10	2	5	6	8	0	0	0	0	5	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **13,346** **HGVs**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Jameron Tc	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothia	14 Scottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wrexctran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	73	142	114	5	33	5	51	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	172	164	148	30	61	35	97	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	14	53	41	2	6	1	14	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	2	50	43	1	1	1	10	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	20	38	38	1	8	1	14	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	31	37	38	2	10	2	24	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	35	8	7	2	14	9	23	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	53	9	9	2	20	12	35	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	36	10	10	2	7	6	25	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	141	284	23	13	42	54	31	1	53	16	0	111	15	0	328	73	271	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	298	309	111	106	81	76	10	1	12	5	10	0	282	161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	31	40	7	9	7	8	1	0	1	0	4	347	0	25	0	4	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	20	18	7	7	7	6	0	0	1	0	7	141	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	76	137	8	3	18	8	30	1	45	9	219	0	14	123	0	135	126	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	444	643	127	108	140	184	120	6	183	135	875	0	42	0	1,128	269	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	62	113	17	12	19	26	19	1	26	12	534	63	4	50	885	39	315	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	186	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	2	0	0	0	277	0	21	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	4	6	1	1	1	2	1	0	1	1	0	0	0	0	171	0	207	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	17	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	79	0	0	0	188	0	34	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	20	11	3	5	7	9	0	0	0	0	5	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **14,794** **HGVs**

Consolidation Centres Study
Incremental Elasticity Model

Reduction in Tonnes-kilometres (Annual

Retail 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	22,952	-18,587	0	33,268	6,591	0	9,668	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	39,978	2,342	0	53,416	8,981	0	50,469	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	7,275	-7,964	0	9,914	1,752	0	3,950	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	1,015	-12,144	0	7,277	281	0	-959	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	7,702	-4,070	0	10,949	1,697	0	2,342	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	5,719	-2,326	0	11,465	1,268	0	-742	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	1,306	68	0	4,414	405	0	1,882	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	380	24	0	0	51	0	416	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	2,086	135	0	6,299	728	0	2,744	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	1,317	170	0	4,912	62	0	-5,121	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	25,656	19,218	5,904	4,281	10,155	7,104	618	123	701	507	0	0	0	0	22,314	0	70,418	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	889	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-366	-5,574	1,270	774	994	-8	-1,064	-164	-2,152	-271	-21,818	0	0	0	0	0	-35,204	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-3,065	-1,404	-336	76	-878	-1,243	0	0	0	0	6,942	0	0	0	-12,927	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	15,915	10,279	3,720	6,345	6,587	4,909	464	69	380	643	-90,560	0	0	0	-71,825	0	26,374	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-14	0	0	0	-290	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270	0	-2,053	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	3,286	0	0	0	928	0	-43,761	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	66	0	0	0	-183	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	31	0	0	0	0	0	0	0	0	0	265	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	22	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 239,197 **tonnes-kilometres**

Retail 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	26,141	-21,211	0	37,884	7,512	0	11,035	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	45,535	2,662	0	60,862	10,225	0	57,601	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	8,257	-9,033	0	11,173	1,988	0	4,445	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	1,164	-13,824	0	8,217	322	0	-1,086	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	8,747	-4,584	0	12,397	1,942	0	2,644	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	6,497	-2,618	0	12,960	1,449	0	-838	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	1,519	76	0	4,903	455	0	2,096	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	462	51	0	0	51	0	584	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	2,393	178	0	7,238	824	0	3,109	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	1,476	276	0	5,867	81	0	-6,165	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	29,170	21,914	6,737	4,931	11,613	8,028	722	156	845	634	0	0	0	0	25,372	0	79,969	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	1,092	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-418	-6,353	1,443	877	1,134	-9	-1,213	-183	-2,452	-303	-24,887	0	0	0	0	0	-40,089	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-3,440	-1,507	-357	83	-960	-1,452	0	0	0	0	7,851	0	0	0	-14,726	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	18,138	11,710	4,242	7,244	7,507	5,592	525	78	435	730	-103,214	0	0	0	-81,864	0	30,056	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-20	0	0	0	-326	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308	0	-2,320	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	3,741	0	0	0	1,055	0	-49,870	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	73	0	0	0	-202	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	35	0	0	0	0	0	0	0	0	0	302	0	0	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	25	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0

Total 272,249 **tonnes-kilometres**

Construction 2020 Low Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	9,587	-36,870	22,535	3,577	8,158	2,335	2,373	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	30,621	8,669	71,134	29,770	19,954	20,256	22,511	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	2,921	-15,469	2,798	1,097	2,195	826	934	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	345	-21,025	-4,271	687	312	643	-195	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	2,761	-7,102	5,183	1,032	1,940	736	491	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	3,250	-6,232	8,562	1,709	2,189	658	-243	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	2,722	603	3,705	1,942	2,595	4,079	2,133	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	161	45	164	0	78	208	98	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	2,369	1,464	5,836	2,458	355	474	-6,765	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	43,993	60,552	9,958	6,480	15,264	17,103	5,337	229	6,323	4,884	0	46,209	12,508	0	31,327	25,382	103,090	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-111,704	-64,892	-39,500	-37,557	-21,104	-19,256	-1,258	-92	-1,211	420	1,202	0	-8,718	72,993	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-10,781	-8,307	-3,079	-4,131	-2,619	-2,339	-121	0	-116	43	488	-158,419	0	11,439	0	0	773	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-6,187	-3,757	-2,716	-2,854	-2,228	-1,809	-54	-3	-56	38	0	-67,738	-10,637	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-335	-9,079	1,276	688	771	-12	-4,443	-164	-9,136	-1,227	-73,344	0	8,466	134,822	0	-38,858	-21,981	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	-1	0	0	0	0	0	0	0	0	-11	0	0	0	-68,569	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-47,621	-44,368	-4,466	948	-10,887	-24,856	-17,974	-1,081	-37,543	-49,323	38,569	0	24,029	0	-91,103	-50,090	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	17,234	19,789	6,778	5,676	6,251	7,277	2,588	85	2,123	3,100	-76,868	25,279	3,226	66,417	-209,208	-456	31,906	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3,179	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,223	0	87,230	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-768	0	14	0	-148,557	0	-6,673	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-464	-366	-32	10	-89	-209	-98	-7	-199	-276	0	0	0	0	-3,272	-15	-91,067	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249	0	-7,657	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	3,468	0	0	0	8,271	0	-14,792	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-42	-65	0	0	0	0	0	0	0	0	0	0	0
27 North East England	1,682	-2,392	4	-192	393	1,162	-13	0	-13	7	605	-3	-69	0	8,101	13	4	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-9	-14	0	0	0	-1	0	0	0	0	1,241	0	0	0	25	7	96	0	0	0	0	0	0	0	0	0	0	0

Total - 540,576 **tonnes-kilometres**

Construction 2020 High Growth

	1 Edinburgh Cent	2 Hermiston Gait	3 Cameron To	4 Fort Kinnair	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferr	11 West Lothian	12 Midlothian	13 East Lothia	14 ottish Bord	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran We	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	10,537	-40,417	24,736	3,948	8,955	2,571	2,613	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	33,620	9,514	78,095	32,642	21,912	22,240	24,759	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	3,216	-17,029	3,073	1,169	2,403	920	1,023	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	381	-23,066	-4,687	731	341	709	-215	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	3,032	-7,803	5,688	1,099	2,123	817	536	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	3,570	-6,827	9,399	1,856	2,405	727	-270	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	2,987	669	4,057	2,062	2,851	4,476	2,370	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	167	45	164	0	78	232	98	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	4,443	1,621	5,803	2,936	4,110	5,500	3,355	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	2,610	1,636	6,517	2,547	387	509	-7,475	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	48,291	66,496	10,949	7,130	16,765	18,780	5,866	245	6,937	5,376	0	50,657	13,781	0	34,425	27,901	113,135	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-122,615	-71,237	-43,347	-41,211	-23,175	-21,129	-1,385	-92	-1,328	463	1,297	0	-9,565	80,157	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-11,847	-9,117	-3,386	-4,539	-2,872	-2,584	-135	0	-127	44	525	-173,917	0	12,483	0	0	820	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-6,801	-4,128	-2,989	-3,137	-2,451	-1,985	-58	-3	-62	40	0	-74,336	-11,681	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-368	-9,969	1,401	761	846	-14	-4,882	-180	-10,026	-1,349	-80,517	0	9,289	147,967	0	-42,672	-24,146	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	-1	0	0	0	0	0	0	0	0	-11	0	0	0	-75,288	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-52,313	-48,705	-4,903	1,041	-11,971	-27,287	-19,716	-1,107	-41,256	-54,410	42,351	0	26,571	0	-100,008	-55,020	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	18,921	21,725	7,457	6,233	6,860	7,991	2,843	92	2,331	3,403	-84,396	27,734	3,557	72,978	-229,696	-500	35,026	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3,486	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,635	0	95,779	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-837	0	14	0	-163,090	0	-7,321	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-510	-401	-34	10	-98	-231	-107	-7	-218	-302	0	0	0	0	-3,592	-15	-99,979	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273	0	-8,410	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	3,806	0	0	0	9,082	0	-16,226	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-49	-65	0	0	0	0	0	0	0	0	0	0	0
27 North East England	1,847	-2,627	4	-211	431	1,276	-14	0	-14	8	663	-3	-76	0	8,893	13	4	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-10	-16	0	0	0	-1	0	0	0	0	1,363	0	0	0	28	8	100	0	0	0	0	0	0	0	0	0	0	0

Total - 565,924 **tonnes-kilometres**

Consolidation Centres Study

Incremental Elasticity Model

Reduction in HGV-kilometers [Annual]

Retail 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,443	-1,185	0	2,130	430	0	616	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,548	149	0	3,405	572	0	3,217	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	464	-508	0	632	112	0	252	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	65	-774	0	464	18	0	-61	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	491	-259	0	698	108	0	149	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	365	-148	0	731	81	0	-47	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	83	4	0	281	26	0	120	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	24	2	0	0	3	0	27	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	133	9	0	402	46	0	175	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	84	11	0	313	4	0	-326	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,635	1,225	376	273	647	453	39	8	45	32	0	0	0	0	1,422	0	4,488	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-23	-355	81	49	63	-1	-68	-10	-137	-17	-1,391	0	0	0	0	0	-2,244	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-195	-89	-21	5	-56	-79	0	0	0	0	442	0	0	-824	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,014	655	237	404	420	313	30	4	24	41	-5,772	0	0	0	-4,578	0	1,681	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	-18	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	-131	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	209	0	0	0	59	0	-2,789	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	4	0	0	0	-12	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	2	0	0	0	0	0	0	0	0	0	17	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **15,246** **HGV-kilometers**

Retail 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	1,666	-1,352	0	2,415	479	0	703	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,902	170	0	3,879	652	0	3,671	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	526	-576	0	712	127	0	283	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	74	-881	0	524	21	0	-69	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	558	-292	0	790	124	0	169	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	414	-167	0	826	92	0	-53	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	97	5	0	312	29	0	134	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	29	3	0	0	3	0	37	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	152	11	0	461	52	0	198	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	94	18	0	374	5	0	-393	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	1,859	1,397	429	314	740	512	46	10	54	40	0	0	0	0	1,617	0	5,097	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-27	-405	92	56	72	-1	-77	-12	-156	-19	-1,586	0	0	0	0	0	-2,555	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-219	-96	-23	5	-61	-93	0	0	0	0	500	0	0	0	-939	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,156	746	270	462	478	356	33	5	28	47	-6,579	0	0	0	-5,218	0	1,916	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	-21	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	-148	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	238	0	0	0	67	0	-3,179	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	5	0	0	0	-13	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	2	0	0	0	0	0	0	0	0	0	19	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **17,353** **HGV-kilometers**

Construction 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	594	-2,286	1,397	222	506	145	147	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	1,809	538	4,411	1,846	1,237	1,256	1,396	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	181	-959	173	68	136	51	58	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	21	-1,304	-265	43	19	40	-12	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	171	-440	321	64	120	46	30	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	202	-386	531	106	136	41	-15	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	169	37	230	120	161	253	132	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	10	3	10	0	5	13	6	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	147	91	362	152	22	29	-419	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,728	1,755	617	402	946	1,061	331	14	392	303	0	2,865	778	0	1,943	1,574	6,392	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-6,927	-4,024	-2,449	-2,329	-1,309	-1,194	-78	-6	-75	26	75	0	-541	4,526	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-668	-515	-191	-256	-162	-145	-7	0	-7	3	30	-3,823	0	709	0	0	48	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-384	-233	-168	-177	-138	-112	-3	0	-3	2	0	-4,200	-660	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-21	-563	79	43	48	-1	-275	-10	-567	-76	-4,548	0	525	8,360	0	-2,410	-1,363	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	-4,252	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-2,953	-2,751	-277	59	-675	-1,541	-1,115	-67	-2,328	-3,058	2,392	0	1,490	0	-5,649	-3,106	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,069	1,227	420	352	388	451	160	5	132	192	-4,766	1,567	200	4,118	-12,973	-28	1,978	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-197	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252	0	5,409	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-48	0	1	0	-9,212	0	-414	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-29	-23	-2	1	-6	-13	-6	0	-12	-17	0	0	0	0	-203	-1	-5,647	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	-475	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	215	0	0	0	513	0	-917	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-4	0	0	0	0	0	0	0	0	0	0	0
27 North East England	104	-148	0	-12	24	72	-1	0	-1	0	38	0	-4	0	502	1	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-1	-1	0	0	0	0	0	0	0	0	77	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0

Total **-** **33,520** **HGV-kilometers**

Construction 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron Toll	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 Wescran Cent	24 actran East	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	653	-2,506	1,534	245	555	159	162	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	2,085	590	4,843	2,024	1,359	1,379	1,535	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	199	-1,056	191	72	149	57	63	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	24	-1,430	-291	45	21	44	-13	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	188	-484	353	68	132	51	33	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	221	-423	583	115	149	45	-17	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	185	41	252	128	177	278	147	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	10	3	10	0	5	14	6	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	276	100	360	182	255	341	208	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	162	101	404	158	24	32	-463	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	2,994	4,123	679	442	1,040	1,184	364	15	430	333	0	3,141	855	0	2,135	1,730	7,015	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-7,603	-4,417	-2,688	-2,555	-1,437	-1,310	-86	-6	-82	29	80	0	-593	4,970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-735	-565	-210	-281	-178	-160	-8	0	-8	3	33	-10,364	0	774	0	0	51	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-422	-256	-185	-195	-152	-123	-4	0	-4	2	0	-4,609	-724	0	0	0	-4	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	-23	-618	87	47	52	-1	-303	-11	-622	-84	-4,993	0	576	9,175	0	-2,646	-1,497	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	-4,668	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-3,244	-3,020	-304	65	-742	-1,692	-1,223	-69	-2,558	-3,374	2,626	0	1,648	0	-6,201	-3,412	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	1,173	1,347	462	387	425	495	176	6	145	211	-5,233	1,720	221	4,525	-14,243	-31	2,172	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-216	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287	0	5,939	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	-52	0	1	0	-10,113	0	-454	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	-32	-25	-2	1	-6	-14	-7	0	-14	-19	0	0	0	0	-223	-1	-6,200	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	-521	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	236	0	0	0	563	0	-1,006	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-4	0	0	0	0	0	0	0	0	0	0	0
27 North East England	115	-163	0	-13	27	79	-1	0	-1	0	41	0	-5	0	551	1	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	-1	-1	0	0	0	0	0	0	0	0	84	0	0	0	2	1	6	0	0	0	0	0	0	0	0	0	0	0

Total **-** **35,092** **HGV-kilometers**

Consolidation Centres Study

Incremental Elasticity Model

Reduction in HGV-kilometers (Annual)

Retail 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron To	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	14	-17	0	30	4	0	10	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	35	2	0	52	7	0	51	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	3	-9	0	9	1	0	5	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	0	-11	0	8	0	0	6	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	4	-6	0	9	1	0	2	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	0	-3	0	10	1	0	-5	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	1	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	-4	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	44	34	8	5	16	12	1	0	2	1	0	0	0	12	88	0	95	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4	-7	1	0	3	0	-1	0	-2	0	-12	0	0	0	0	0	-22	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-1	-2	0	1	0	-1	0	0	0	0	-2	0	0	0	-12	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	13	5	3	4	6	4	0	0	0	0	-49	0	0	0	-38	0	41	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-2	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	2	0	-36	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **438.1** **HGV-hours**

Retail 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron To	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	16	-19	0	34	5	0	11	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	40	2	0	60	8	0	58	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	3	-11	0	10	1	0	5	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	1	-12	0	9	0	0	7	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	5	-7	0	10	1	0	2	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	0	-3	0	11	1	0	-5	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	1	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	-5	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	49	39	9	6	19	13	2	0	2	1	0	0	0	13	100	0	108	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4	-7	1	0	3	0	-1	0	-2	0	-14	0	0	0	0	0	-25	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-1	-2	0	1	0	-1	0	0	0	0	-3	0	0	0	-14	0	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	15	5	3	5	7	5	0	0	0	0	-56	0	0	0	-43	0	46	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-2	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	2	0	-41	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **498.8** **HGV-hours**

Construction 2020 Low Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron To	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	6	-32	9	3	5	2	2	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	26	7	61	28	16	16	22	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	1	-18	-2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	0	-18	-5	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	2	-10	-1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	0	-7	2	1	1	1	-1	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	2	0	3	2	2	3	2	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	0	0	4	2	1	1	-5	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	73	104	13	7	24	28	12	1	15	7	0	52	13	0	120	44	136	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-68	-56	-32	-32	-18	-9	-1	0	-2	0	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-9	-7	-3	-4	-2	-2	0	0	0	0	0	-126	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-5	-3	-2	-2	-1	-2	0	0	0	0	0	-60	-13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	3	-10	1	0	2	1	-2	0	-9	0	-40	0	6	116	0	-25	-13	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-50	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-13	-49	6	11	0	-11	-9	-1	-36	-41	-13	0	17	0	-86	-24	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	14	9	5	3	5	6	2	0	0	2	-41	13	2	55	-107	3	48	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-109	0	-4	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	8	0	-72	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	17	0	-12	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-6	1	-1	-2	-2	-2	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **33.0** **HGV-hours**

Construction 2020 High Growth

	1 Edinburgh Cen	2 Hermiston Gat	3 Cameron To	4 Fort Kinnaird	5 Leith	6 Granton	7 Airport	8 Ratho	9 Newbridge	10 Queensferry	11 West Lothian	12 Midlothian	13 East Lothian	14 Scottish Borde	15 Falkirk	16 ckmannans	17 Fife	18 SPT North	19 SPT Central	20 SPT South	21 Swestrans	22 actran West	23 actran Cent	24 actran Eas	25 Nestran	26 Hitrans	27 rth East Engl	28 Rest of UK
1 Edinburgh Centre	0	0	0	0	0	0	0	0	0	0	6	-36	9	3	6	2	3	0	0	0	0	0	0	0	0	0	0	0
2 Hermiston Gait	0	0	0	0	0	0	0	0	0	0	29	8	67	31	17	18	24	0	0	0	0	0	0	0	0	0	0	0
3 Cameron Toll	0	0	0	0	0	0	0	0	0	0	1	-19	-2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
4 Fort Kinnaird	0	0	0	0	0	0	0	0	0	0	0	-20	-6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5 Leith	0	0	0	0	0	0	0	0	0	0	2	-11	-1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
6 Granton	0	0	0	0	0	0	0	0	0	0	0	-8	3	2	1	1	-2	0	0	0	0	0	0	0	0	0	0	0
7 Airport	0	0	0	0	0	0	0	0	0	0	2	0	3	2	2	4	3	0	0	0	0	0	0	0	0	0	0	0
8 Ratho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Newbridge	0	0	0	0	0	0	0	0	0	0	2	1	4	3	2	6	2	0	0	0	0	0	0	0	0	0	0	0
10 Queensferry	0	0	0	0	0	0	0	0	0	0	0	1	5	2	1	1	-6	0	0	0	0	0	0	0	0	0	0	0
11 West Lothian	80	114	14	8	26	31	14	1	17	7	0	58	14	0	131	48	149	0	0	0	0	0	0	0	0	0	0	0
12 Midlothian	-75	-62	-35	-35	-20	-10	-1	0	-2	0	0	0	0	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 East Lothian	-10	-8	-3	-4	-3	-2	0	0	0	0	0	-139	0	13	0	0	1	0	0	0	0	0	0	0	0	0	0	0
14 Scottish Borders	-5	-4	-2	-3	-2	-1	-3	0	0	0	0	-66	-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Falkirk	4	-11	1	0	2	1	-3	0	-10	0	-44	0	6	127	0	-27	-15	0	0	0	0	0	0	0	0	0	0	0
16 Clackmannanshire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-55	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Fife	-15	-54	6	13	0	-12	-10	-1	-40	-45	-15	0	19	0	-94	-27	0	0	0	0	0	0	0	0	0	0	0	0
18 SPT North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 SPT Central	16	9	5	4	6	7	2	0	0	2	-44	15	2	61	-118	3	52	0	0	0	0	0	0	0	0	0	0	0
20 SPT South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Swestrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	59	0	0	0	0	0	0	0	0	0	0	0
22 Tactran West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-120	0	-4	0	0	0	0	0	0	0	0	0	0	0
23 Tactran Central	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	9	0	-79	0	0	0	0	0	0	0	0	0	0	0
24 Tactran East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-7	0	0	0	0	0	0	0	0	0	0	0
25 Nestran	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	19	0	-13	0	0	0	0	0	0	0	0	0	0	0
26 Hitrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 North East England	-6	2	-1	-2	-2	-2	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Rest of UK	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total **55.6** **HGV-hours**

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