



Tactran Freight Consolidation Centre Trial

Report

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1 Introduction

1.1 Tayside and Central Scotland Transport Partnership (Tactran) commissioned JMP Consultants Ltd and TTR Ltd to undertake a detailed freight consolidation study to progress towards implementing a trial consolidation scheme to serve retailers in Perth. This study follows on from the successfully completed freight consolidation feasibility study. The focus of this study is to understand the key issues for implementing a trial freight consolidation scheme including:

- Raising awareness and engaging with key stakeholders, most importantly retailers;
- Defining the operating structure for a trial freight consolidation scheme;
- Identifying potential complementary measures that could help achieve the scheme's aims and objectives; and
- Presenting a way forward for implementing a trial scheme.

Aim and Objectives

1.2 The overarching objectives for developing a freight consolidation centre (FCC) to serve retailers in Perth remain unchanged from the feasibility study and are therefore:

- To address air quality issues and environmental targets in Perth and Dundee;
- To improve the environmental and operational efficiency of freight distribution in the region.

1.3 The Transport Planning Objectives (TPOs) developed in the feasibility study also remain valid for this study and are defined as:

- Contribute to an improvement in Air Quality in the target area;
- Improve distribution efficiency and sustainability in the Tactran region;
- Reduce the number of delivery vehicles travelling into the target area;
- Contribute to enhancing the retail environment of the target area;
- Reduce conflict between delivery vehicles, other road users and pedestrians;
- Provide an improved delivery service to retailers; and
- Provide the opportunity for value added services such as off-site storage and collection of waste and packaging material.

1.4 From a financial perspective the premise for any potential consolidation centre remains the same and therefore any consolidation scheme should be:

- Self supporting financially and run on a commercial basis. Potential for some assistance with set-up costs;
- Retailer participation would be voluntary with no direct or inferred enforcement i.e. through increased access restrictions;

1.5 It should however be noted that it is anticipated, based on the outcomes of this study, that Perth and Kinross Council (PKC) would submit an Air Quality funding bid to the Scottish Government, which would seek to cover the costs associated with setting up and running a trial freight consolidation scheme.

Background

- 1.6 The original Tactran freight consolidation feasibility study considered the potential for a freight consolidation centre to serve retailers in Perth and Dundee either separately or together. The overall outcome from the study was that a trial consolidation scheme could be implemented in the short to medium term which would yield reductions in pollutant emissions in the study area.
- 1.7 The option generation exercise undertaken identified a small number of locations that were considered as having the potential to be used for a freight consolidation centre based on a number of guiding principles. Of the three locations that were investigated the Inveralmond Industrial Estate to the north of Perth on the A9 was identified as the best performing option in terms of cost effectiveness. Of particular relevance to this outcome was the existence of a current distribution facility operated by DHL and through discussions with DHL it was identified that there was the potential to incorporate a consolidation delivery service for both Perth and Dundee within its existing operation. Subsequent discussions with DHL have, however, indicated that the previously identified facility will not actually be available for use from March 2011 and therefore an alternative property solution would need to be found. Within the feasibility study this option was identified as 5d: Perth Inveralmond serving Perth and Dundee; equally the Inveralmond site would also be suitable to serve just retailers in Perth as identified in option 2b.
- 1.8 The principles under which a consolidation scheme should operate were also defined indicating that retailer participation would be voluntary, that the scheme should look to be self financing, and if this was not deemed possible, at least in the beginning, then the level of subsidy required should be indicated.
- 1.9 It was stressed that a trial consolidation scheme should form part of a wider package of measures that would address not only emissions from goods vehicles delivering to Perth and Dundee, but also emissions from HGV through traffic and traffic on the local road network.
- 1.10 As described above the original feasibility study focused on both Perth and Dundee. However for the purposes of this study the focus is solely on Perth. Further information on Perth, in particular the latest information on air quality, is provided in Section 2. Brief synopsis of the air quality issues in Dundee is provided, which indicates why, at this point in time, they are not actively pursuing freight consolidation.
- 1.11 Through their air quality work and subsequent Air Quality Action Plan (AQAP) Dundee City Council (DCC) have identified that their primary interest in terms of transport is the local bus fleet and they are therefore focussing on measures to address the emissions impact from this source. However as can be seen below Measure M6 in the Dundee AQAP targets HGVs and considers a potential role for freight consolidation.

Dundee Air Quality Action Plan

Measure M6: Measures Targeting Heavy Goods Vehicles

- 1.12 The AQAP states that 'further Assessment has clearly shown the disproportionately high contribution from HDVs to NO₂ and PM₁₀ concentrations in the AQMA' and that they are planning to undertake a detailed study for the potential for a tri-modal interchange in the Dundee port area, which could include freight consolidation.
- 1.13 *'A tri-modal interchange provides facilities for rail, road and water interchanges. In Dundee, a tri-modal interchange is being investigated in the Port area, accessed via Broughty Ferry Road, which could incorporate such a freight consolidation scheme. This is part of a wider strategy for the Port*

of Dundee to facilitate further development of the Port, through improvements to road links, and potential for development of a tri-modal railhead. A site of 25 hectares adjacent to the deep-water terminal has been identified to accommodate this use.' 'A detailed study of tri-modal interchanges at docks will be carried out to formulate a holistic view of the development and air quality and associated issues and to inform the scheme about the wider implications for air quality in Dundee'.

1.14 Measure M6 also contains an aspiration to set up a Freight Quality Partnership for the local Dundee area.

1.15 The table below indicates the prioritisation exercise undertaken by DCC in their AQAP and shows that the freight consolidation scheme scored 17 points therefore giving it a medium priority. The comments below the table are feedback from the steering committee meeting on Measure M6 in the AQAP prioritisation process.

Table 1 Dundee City Council Air Quality Action Plan

Measure	Actions	Lead Authority	Timescale	Status	Impact	Cost	Cost Effective Score	Feasibility	Prioritisation Score	Targets/ Indicators
Measure M6: DCC will introduce measures to reduce emissions from Heavy Goods Vehicles	Perth & Dundee Retail Freight Consolidation Centre	DCC City Development Department (Transport Division) TACTRAN	2011+	Funding required	2	6	12	5	17	Implementation of scheme Vehicle fleet in the AQMA Study for the alternate system of retail freight

- Based on other discussions with retail/freight sector the current proposals will have limited impact;
- Convince City Centre Management Group about benefits of freight consolidation; need commercial engagement;
- Co-operation of medium sized stores.

1.16 On the basis of the information above, which shows the focus of the study is solely Perth, the outline scheme proposal from the feasibility study has been adjusted to suit the parameters of the scheme and is shown in Table 4 in the following pages. The vehicle trip and emissions reduction estimates from the feasibility for scenario 2b are also summarised below in Tables 2 & 3 for information.

1.17 It should be noted that the slight increases to CO₂ emissions observed in Scenario 2 are due to the location of Inveralmond to the north of Perth with delivery traffic having to divert around the M90/A9 to reach the consolidation facility. The additional emissions would be occurring on the strategic road network rather than the urban road network where the benefits of the FCC could still be applied.

Table 2 Scenario 2 Perth Inveralmond Serving Perth Estimated Vehicle Trip reduction

Scenario Number	Serving	Location	Level of uptake	Vehicle type	Daily delivery vehicles not using FCC			Daily delivery vehicles delivering to FCC			Daily delivery vehicle trips from FCC	Daily reduction in vehicle trips
					Artic/ Large Rigid	Rigid	Van	Artic/ Large Rigid	Rigid	Van		
S2a	Perth	Perth - Inveralmond	10% of retailers	Euro 4 diesel	18	45	45	2	5	5	1 vehicle 2 rounds	10 (83%)
S2b	Perth	Perth - Inveralmond	10% of retailers	Electric	18	45	45	2	5	5	1 vehicle 2 rounds	10 (83%)
S2c	Perth	Perth - Inveralmond	20% of retailers	Euro 4 diesel	16	40	40	4	10	10	1 vehicle 3 rounds	21 (88%)
S2d	Perth	Perth - Inveralmond	20% of retailers	Electric	16	40	40	4	10	10	1 vehicle 4 rounds	20 (83%)

Table 3 Scenario 2 Perth Inveralmond Serving Perth Estimated Vehicle Emissions Impact

Scenario 2a 10%	Annual Emissions							
	Without CC	With CC – point of use			Without CC	With CC – life cycle		
		Euro IV	Difference	% change		Euro IV	Difference	% change
CO ₂ (T)	222.4	233.5	11.1	5.0	245.8	258	12.2	5.0
NO _x (kg)	1122	1120	-2	-0.2	1246	1250	4	0.3
PM ₁₀ (kg)	65.9	63.9	-2	-3.0	69.6	67.9	-1.7	-2.4
Scenario 2b 10%	Without CC	With CC – point of use			Without CC	With CC – life cycle		
		Electric	Difference	% change		Electric	Difference	% change
	CO ₂ (T)	222.4	226.8	4.4	2.0	245.8	254.2	8.4
NO _x (kg)	1122	1099	-23	-2.0	1246	1234	-12	-1.0
PM ₁₀ (kg)	65.9	63.4	-2.5	-3.8	69.6	67.8	-1.8	-2.6

Table 4 Perth Consolidation Scheme Outline Proposal

Item	Retail Consolidation Scheme Proposal
Target Area	The FCC should focus primarily on the core city centre retailing area of Perth as this provides the highest concentration of retailers and allows for the highest benefits to be achieved. However retailers outside of this area should not necessarily be excluded if they were to express an interest in the scheme. It may also be appropriate to consider widening the scope of the FCC to look at non-retail businesses such as offices and whether the deliveries they receive such as office consumables could also be consolidated.
Location and Facility Type	From the locations identified an FCC at Perth Inveralmond, North Muirton or Perth Harbour area work best in terms of transport operations. Perth Inveralmond appears to offer the greatest potential due to the agglomeration of warehousing facilities located on the industrial estate. These may provide the opportunity to combine freight consolidation with other distribution activities, which is considered key for any potential scheme due to the reduced operating costs of a shared scheme. However other locations should not be ruled out at this stage based on further investigation.
Retailers and Products	Based on the findings from the retailer survey and previous experience, it is recommended that an FCC scheme should look to target those retailers that receive a large number of small consignments or part loads, most likely to be small to medium sized retailers. In the early stages of a consolidation scheme it is also recommended that products being consolidated are not temperature sensitive i.e. chilled or frozen, do not require specialist handling equipment i.e. kegs or gas canisters and are not extremely high value. This will help keep costs down and if a longer term scheme emerges the operation can be developed to incorporate their needs.
Additional Services	Any FCC scheme should look to provide additional services to retailers such as the collection and recycling of waste and packaging material, provision of off-site storage space for use by retailers and pre-retailing services. Offering additional services can provide a revenue stream to help cross subsidise the scheme.
Vehicles	Road freight vehicles should be used to carry out consolidation deliveries to retailers. As a minimum low emission Euro V engine standard should be used. However electric vehicles should be considered the preferred option due to their enhanced environmental credentials and improving market availability.
Costs/Finance	An FCC scheme, in particular a trial, should look to be free of charge to retailers, at least in the initial stages and will therefore require subsidy. This would enable retailers to try the service and also for the benefits to be monitored and evaluated to see if objectives are being met. The risk and benefits of the scheme should be shared amongst all of the key stakeholders including the operator where key performance indicators could be used to ensure maximum performance is achieved.
Compulsory/ Voluntary	Participation by retailers in an FCC scheme would be on a voluntary basis with likely no direct or inferred enforcement. On this basis it is expected that take up by retailers is likely to be between 7.5% and 20% as shown in the worked scenarios.
Incentives/ Restrictions	Due to the voluntary nature of the FCC, and in order to help encourage retailer take up, it is suggested that complementary measures such as increased access restrictions, or reduced business rates for participating retailers are investigated to understand the potential for implementation.
Operation	To maximise attractiveness and provide flexibility the FCC should look to operate 24 hours a day, seven days a week, this is particularly important for inbound deliveries to the FCC. This type of operation and the associated cost could be more easily accommodated through combining freight consolidation with other distribution operations.
Marketing/ Promotion	Marketing and promotion of the scheme would be crucial to its success. A voluntary scheme would need to clearly demonstrate the benefits for retailers including potential cost savings. A dedicated retail recruitment manager may be necessary to ensure sufficient participation levels are reached. It is considered vital to keep retailers informed of developments and where possible involve a potential scheme operator in this process.

2 Study Context

Perth

- 2.1 Much of the information provided in the feasibility study describing Perth, its background, the city centre and wider area and also its supply chain remains valid, and therefore is not repeated here. However, an update has been provided by Gail Cain and Gillian Coyne of Perth City Centre Management (PCCM) regarding the status of a number of key developments.
- 2.2 Environmental improvements to Perth city centre will begin shortly, with the aim of enhancing the High Street and King Edward Street area for residents, businesses, shoppers and visitors alike. The works will be carried out by contractors RJ MacLeod, improving the underlying structure of the street and resurfacing it, as well as replacing street furniture including seating and lighting. Natural stone will be used to enhance the street surfaces.
- 2.3 On Perth High Street, the former Woolworths building is being renovated with plans recently submitted to sub-divide and modernize the building in order to attract retail tenants.
- 2.4 PKC is considering demolition of its City Hall building to create a civic square/public space. This option was widely supported by the public and local businesses and an independent appraisal concluded it could deliver significant benefits to economic growth and the wider community.

Perth & Kinross Air Quality

- 2.5 As stated in the objectives, the need to address poor air quality in Perth is the key driver for the study. Emphasis is being placed on improving air quality in urban areas at all levels of Government especially as the European Commission (EC) will be imposing fines on the Scottish Government based on the failings to meet air quality targets. The level of fine is not yet known; nor whether the responsibility for payment of the fine will be passed on to the Local Authorities. However the potential for large fines to be incurred places a fiscal incentive to find solutions to local air quality problems and subsequently providing the necessary funding to implement AQAPs.
- 2.6 The 2010 Perth & Kinross Air Quality Progress Report considers new monitoring data for the calendar year 2009. During 2009, Perth & Kinross Council undertook ambient monitoring of NO₂ tubes at 54 sites within Perth and Kinross. When assessing the 2009 annual mean nitrogen dioxide concentrations (bias adjusted) against the AQS objective of 40µg/m³, exceedences are evident at 16 of the diffusion tube monitoring sites within AQMA and 1 site outside the AQMA, in Crieff. The 16 diffusion tube sites that showed exceedences are all sites within Perth & Kinross Council's AQMA and the Air Quality Action Plan addresses these exceedences through the measures.
- 2.7 The monitoring has shown there are still exceedences in and around Perth City Centre therefore the AQMA will stay in place. The AQAP is now in place and Perth and Kinross Council have received grant funding from the Scottish Government towards measures contained within the plan.
- 2.8 Within the AQAP a package of nineteen measures are being progressed ranging from infrastructure improvements such as the Cross Tay Link where a full Environmental Appraisal has been carried out in the last twelve months to bus quality improvements, travel planning and local air quality marketing. Freight improvements are linked to the completion of the freight consolidation feasibility study and ongoing regional freight quality partnership.

- 2.9 The AQAP progress report confirms the continuing importance of tackling air quality issues through effective measures across a range of initiatives including freight management.

Air Quality Branding

- 2.10 Previous studies have highlighted that retailers and suppliers in Perth do not currently experience, or indeed perceive, there to be a problem either receiving or making deliveries. This therefore poses one of the greatest challenges for the proposed FCC trial as sign-up is intrinsically dependant on all parties buying into and being enthused about the scheme and the potential benefits that can be realised.
- 2.11 However, while there may not be a traditional raft of delivery or supply chain issues to be addressed by the FCC, there is and remains a prevalent air quality problem in Perth with a large contribution arising from freight and HGV movements. The potential the FCC has to reduce city centre freight movements, and the associated air quality impact, is significant.
- 2.12 It is therefore important that, when communicating the 'benefits' of the proposed FCC, the potential for it to reap these air quality improvements is not overlooked. Indeed, it may be appropriate to package the FCC trial as an air quality improvement measure in its own right, in addition to marketing the benefits it can bring to individual retailers.
- 2.13 That said, however, retailers and suppliers can only be expected to commit to a measure to improve air quality if they are firstly aware of the air quality problem and their contribution to it. To that end, it is noted that PKC and TACTRAN should consider the platform from which the proposed FCC trial will be launched.
- 2.14 As noted above the FCC is just one of a suite of measures set out in the AQAP to improve air quality in Perth. Another important action is one to better market the LAQM process and its findings. Such marketing, if undertaken well, has the potential to greatly increase knowledge, awareness and understanding of air quality issues experienced in Perth and the roles residents, businesses and visitors have to play. By giving air quality a 'brand' and potential improvement measures a home, awareness raising campaigns can be effective in generating support for and buy in to such measures.
- 2.15 A well-known and commonly cited example of such marketing and branding is South Yorkshire's Care4Air campaign (www.care4air.org) and in particular, underneath the umbrella of the Care4Air brand, South Yorkshire's ECO Stars scheme to reduce emissions from commercial vehicle fleets. For more information on Care4Air and ECO Stars, please see the case study contained in Figure 1.
- 2.16 It is therefore our recommendation that PKC considers firstly progressing such a measure rather than pursuing an FCC trial as an air quality improvement in isolation. Such marketing could seek to build on the 'Action on Air' web pages already developed and included on the PKC website.

Figure 1 Care4Air Case Study

Care4Air: South Yorkshire Clean Air Campaign

Care4Air is a partnership between the four South Yorkshire local authorities and is funded by the South Yorkshire Local Transport Plan. Care4Air aims to raise awareness of air quality issues and highlights what is happening in the region to improve the quality of air. In particular, Care4Air aims to provide individuals, organisations, schools and businesses with information that will enable them to 'do their bit' and improve air quality. The 'Learn to Care4Air' section provides users with background information on air pollutants, how to measure air quality, glossary and games.

ECO Stars (Efficient and Cleaner Operations) Fleet Recognition Scheme

A free voluntary scheme designed to provide recognition, guidance and advice to operators of goods vehicles, buses and coaches across South Yorkshire. ECO Stars rates individual vehicles and the organisation's fleet overall road transport operation using star rating criteria, to recognise levels of operational and environmental performance.

Advice and Tools

The website provides advice to the wider public on steps they can take to help improve air quality in the region. Advice includes taking more sustainable modes of transport such as walking and cycling and being more energy efficient around the home. This includes a section on Eco-Driving, providing tips and associated benefits.

Care4Air TV

Care4Air provides updates across the South Yorkshire region through video episodes posted on their websites and YouTube. Episodes include how people are doing their bit in the region to improve air quality and how to get from A to B in a sustainable manner.

Awards

Care4Air holds its own annual awards to recognise organisations in South Yorkshire that have made a significant contribution to improving air quality.

3 Methodology

3.1 The process diagram in Figure 2 indicates the stages and tasks undertaken by the project team to carry out the study and understand the potential to set up a trial consolidation scheme to serve retailers in Perth

Figure 2 Tactran Freight Consolidation Trial Study Methodology



4 Trial Freight Consolidation Scheme

4.1 The aim of this section of the report is to define in detail what a trial freight consolidation scheme for Perth could look like and covers five key areas:

- *Retailer participation*
- *Consolidation centre operating structure*
- *Consolidation centre charging structure*
- *Key Performance Indicators*
- *Identification of a preferred option*

Retailer Participation

4.2 Retailer participation is fundamental to the success on any freight consolidation scheme and therefore it has become a priority for the project team. Previous experience from existing consolidation schemes in the UK shows that keeping retailers informed and engaging with them is crucial to ensure buy in to the scheme, to understand their supply chain and any issues they may be experiencing.

4.3 To date communication with retailers in Perth has been channelled through the existing links provided by the Perth City Centre Management (PCCM) team. At this point the project team would like to acknowledge and thank PCCM for their help and support in distributing information to retailers. Prior to the retailer engagement described below, initial contact was made with retailers during the feasibility study. Firstly an information note was disseminated introducing the freight consolidation concept, indicating that a feasibility study was being carried out and informing retailers that they may be asked to fill out a retailer survey. During this stage of the project retailer engagement has been carried out as described below:

Retailer information note and invitation to attend retailer presentation

4.4 In early November 2010 an information note was distributed to all retailers within the PCCM contact database providing them with a general update on progress with the scheme and also inviting them to attend a retailer presentation where much more detailed information would be provided.

Retailer presentations

4.5 Two retailer presentations took place on Wednesday 24th November 2010 at the Salutation Hotel on South Street. The first presentation was held at lunchtime and the second at store closing time. The presentation lasted about 15 minutes and then retailers were given the opportunity to ask questions and chat to members of the project team.

4.6 The presentation explained the freight consolidation concept, the benefits to retailers and their suppliers, discussed some of the findings from the retailer survey and explained how a potential trial scheme for Perth would work including what happens next.

4.7 Unfortunately attendance at the retailer presentations was disappointing. It is believed this was due to a combination of factors:

- Busy time of year (run up to Christmas) for retailers. Time pressures very high;
- Over a year elapsed since previous survey engagement;
- Lack of specific clarity on scheme and its likely impact;

- Lack of engagement in / feeling of lack of control of their supply chain by retailers, especially independents, and associated lack of understanding of how it could be arranged differently;
- Lack of general awareness / understanding of Perth's air quality problem and its causes.

4.8 All these factors combined to give a lack of priority to react to the invitation to the meetings. In order to address this situation a number of steps have been taken or are proposed in order to generate sufficient interest by retailers in participating in a consolidation scheme for Perth and provide the necessary information for inclusion in a bid for further air quality funding. The measures are outlined below:

- **Step 1:** Retailer information note (based on information in the retailer presentation) providing an update on scheme progress circulated to retailers via PCCM week commencing 17/01/2011 – see Appendix A.
- **Step 2:** The target list of retailers has been refined and checked i.e. still trading and then cross referenced with retailers involved at existing consolidation schemes - Bristol, Heathrow and Meadowhall. New retailers were added to the list as a result of this process i.e. not identified as most suitable, but involved in one or more existing consolidation schemes.
- **Step 3:** In depth consultation with targeted retailers will be needed and will involve meetings/discussions at both store level and further up the supply chain. This would ideally include a member of staff from JMP/TTR and a representative from a potential scheme operator to add weight and credibility. In Bristol this approach worked well and enabled buy in from a number of retailers at an early stage.
- **Step 4:** Hold an open follow up meeting with the targeted retailers once they have a better understanding of the scheme, what it will mean for them and outline to them what happens next.

4.9 Steps 1 & 2 have been completed as part of this stage in the process and the retailer information note can be found in the Appendices. Steps 3 & 4 are included in the Action Plan found in Section 7. The targeted list of retailers can be seen in Table 5.

4.10 Although the retailer presentations were not well attended, a number of specific issues were raised and summarised below. They have been taken in to consideration when developing the trial scheme and identifying a preferred option.

- **Collections:** this would be a standard element of consolidation centre offer, just as for any courier. The scheme would most likely be operated by a courier under contract and hence they will understand the requirements of business clients such as this; for example the scheme would also need to be able to handle returns, mail order dispatch and inter-store transfers. Also consider options of home delivery and potential to deliver to park and ride sites. Collections generally at end of day, which implies a need for a minimum of 2 journeys from the FCC (1 in the morning primarily focused on deliveries, but which could bring back any early collections and 1 in the afternoon to bring in a 2nd round of deliveries and deal with any collections that are required).
- **Delays to deliveries compared to existing situation:** This will need to be looked at on a case by case basis for each supply chain. Possible delivery time will depend on phasing of trunking routes as compared to despatch time of consolidation centre vehicle into Perth. Exact details will vary from supplier to supplier and will need to consider liaison with other couriers in some detail. For example, with respect to the location of their hubs – they could be delivering into

Perth from a local hub, in which case this is an easy transition or they could be delivering into Perth from somewhere else e.g. Kirkcaldy and so the FCC depot might require either additional trunking mileage or to be fed by local network vehicles, which could result in delays – hence the key is to integrate with trunk network as much as possible.

- Costs: The aim of the trial needs to be to test the service without additional costs. If benefits can be identified then it will be necessary to look at subsequent sharing of costs between all parties. Also need to consider cost savings upstream in the supply chain in order to show a cost saving or cost neutrality to retailer.
- Compulsory / voluntary nature: There is no intention to make this consolidation scheme compulsory at this stage. However, changes to restrictions in the future may mean that the FCC would be the only delivery service that can meet environmental requirements in an economic way – e.g. daytime deliveries by an electric vehicle would mean that it is not practical or economic for many retailers to use any other form of delivery service than the FCC.

Perth FCC Target Retailer List

- 4.11 As described in point 4.8 Step 2, a target list of retailers has been created based on suitability to consolidation and participation in other UK freight consolidation schemes. Table 5 shows a total of 39 retailers in Perth who should be targeted as part of the retail recruitment process. Some of the largest retailers (WHSmith, Boots, Argos and Marks & Spencer have been removed from this list on the basis that they are not well suited to consolidation due to their current supply chain delivering full or close to full loads, which could result in additional cost and an increase in the number of delivery trips as a result of using a consolidation centre. WHSmiths and Boots' are also known to be very reluctant to participate in consolidation schemes – their participation at Heathrow is forced.
- 4.12 It was originally identified that retailer participation in a trial scheme would likely range from 10 – 20% of retailers from a list of approximately 250. Therefore between 25 and 50 retailers would look to be recruited over the life of the trial scheme. The retailer list below therefore represents a significant proportion of the upper target.

Table 5 Perth Target Retailer List

No.	Perth Retailers	Bristol	Heathrow	Meadowhall, Sheffield
1	A McKenzie Opticians			
2	Accessorize		✓	
3	Arabesque			
4	Camera Shop			
5	Campus Sports			
6	Carphone Warehouse	✓		
7	Claire's Accessories			
8	Clarks Shoes		✓	
9	Clinton Cards			
10	Debenhams (concessions)			✓
11	Early Learning Centre			
12	Fat Face		✓	
13	Game			
14	Gap			✓
15	Hine Opticians			
16	HMV		✓	
17	Jane Norman			
18	Lush Cosmetics	✓		
19	Monsoon			
20	New Look			✓
21	O2			
22	Optical Express			
23	Orange			
24	Past Times			
25	PD Malloch			
26	Phones 4 U			
27	Robertson Opticians			
28	Shoe Zone			
29	Sony Centre	✓		
30	Specsavers			
31	The Body Shop	✓		
32	The Health Store			
33	Thornton's	✓		
34	Timpson			
35	T-Mobile			
36	Top Shop			✓
37	Vodafone		✓	
38	W J Henderson Opticians			
39	Watson & Sons			

Consolidation Centre Operating Structure

- 4.13 In order to define an operating structure the project team has engaged with a number of logistics operators, undertaken site visits where appropriate and conducted in depth discussions to understand the feasibility for each of them to potentially run a trial consolidation scheme for Perth.
- 4.14 Through the feasibility study DHL and Clipper Logistics were identified as being logistics operators who had significant experience of setting up and running freight consolidation schemes and were already involved in existing consolidation centres in the UK. In addition to this Kuehne & Nagel (K&N) were also identified as a potential operator due to their presence in the region with an existing facility.
- 4.15 Site visits and meetings were held with both DHL and Kuehne & Nagel at their respective facilities. Clipper Logistics were engaged through telephone discussions due to their lack of a facility in the region, their nearest facility being at Bellshill near Glasgow.
- 4.16 A briefing note was supplied to operators prior to the site visits outlining some of the key findings from the feasibility study. The aim of the site visit was primarily for the operators to describe how they would envisage running a consolidation centre and indicate that they had the required skills and resources for a scheme to be successful. The site visits also allowed the project team to see the facilities first hand and ask any questions they may have.
- 4.17 Further detailed information on the scheme requirements based on the retailer take up scenarios from the feasibility study, the associated inbound and outbound delivery trips and key criteria such as retailer recruitment and using electric vehicles were then provided to the logistics operators. It was requested that based on this information they provide the project team a 'ball park' cost estimate for running a trial consolidation scheme for 12 months. The purpose of this was not that the operators would be held to this figure, but that it would help indicate the level of funding required and also validate the cost estimates developed in the feasibility study. A summary of the data provided to the operators is shown below.
- 4.18 Each operator subsequently submitted a cost estimate and each one has, in turn, been reviewed to help inform the scheme development. It should be noted that each operator took a different approach to their proposal and therefore their responses are not represented in a standardised format. However a number of criteria, also shown below, have been identified to help assess each of the operators and their respective proposal. This will allow the strengths and weaknesses of each operator and proposal to be recognised and will help the project team move towards identifying a preferred option.

Operator Data

- Initial scenarios of demand were based on 10% and 20% uptake from the 250 retailer base in Perth;
- Average (mean) number of deliveries per store per week was approximately 5.5 deliveries (N.B the most common figure was less than this but the mean is skewed by the handful who have a lot more deliveries);
- Ballpark total of 1375 deliveries per week of varying size (not including office and catering supplies which might provide an opportunity to increase throughput);
- Assuming a 6 day delivery week, this equates to around 220 deliveries per day;

- Scenario 1: 10% consolidation centre initial take up scenario, this equates to 22 deliveries per day;
- Scenario 2: 20% consolidation centre initial take up scenario, this equates to 44 deliveries per day;
- Both scenarios should be well within scope of a single 7.5T diesel vehicle or the electric equivalent.

Assessment Criteria

- **Previous experience:** knowledge and experience of setting up and running a freight consolidation service for retailers;
- **Depot location:** suitability of the depot location to serve retailers in Perth;
- **Depot facilities:** availability of the required facilities to run a successful consolidation service i.e. sufficient floor space, handling equipment, loading and unloading equipment, back office space and equipment;
- **Electric vehicle:** ability to ensure provision of an electric delivery vehicle for use in the scheme;
- **Retailer recruitment:** experience of undertaking retailer recruitment tasks and having existing links with retailers located in Perth and also involved in other consolidation schemes;
- **Estimated cost:** competitiveness of price quoted in proposal and also on the potential for re-negotiation once further.

4.19 It is important to bear in mind that the figures quoted are considered as estimates by the operators and therefore they are not bound by this figure.

Kuehne & Nagel

4.20 Kuehne + Nagel provide integrated solutions across the supply chain. They are a global leader in international forwarding, and also rank among the top three worldwide contract logistics operators following their 2006 acquisition of ACR Logistics. The company, founded in 1890, has over 56,000 employees at 900 locations in more than 100 countries.

Consolidation Scheme Proposal

Operational Assumptions

- Vehicle is an electric 12 Tonne Rigid with tail lift;
- The battery range = 100 miles;
- Vehicle capacity:
 - 10 pallets;
 - 6.7 tonnes payload;
- The mileage of 1 trip = 62 miles (Dundee to Perth (10 miles within the city centre) return to Dundee);
- Based on Monday to Friday operations;
- Deliveries are made 07:00-17:00 or within shop opening hours;
- 22 deliveries can be loaded on to 1 vehicle and delivered in 1 trip (this would equal an average pallets per delivery of 0.45 assuming the vehicle left full);

- In scenario 2 the requirement will be for 2 vehicles;

Cost Assumptions

4.21 Includes the following:

- Core driver(s) and agency cover for ASH;
- Core warehouse operative(s) working day shift and agency cover for ASH;
- 1 x FLM to cover transport + warehouse;
- Cost of vehicle(s);
- Contribution for MHE;
- Facility Costs - £10 per Sq Ft, 5,000 Sq Ft required;
- Insurance – vehicle & employee liability;
- Cab phone(s);
- Vehicle consumables;
- Office costs – stationery, printing, desk, chair, PC & printer;
- Depreciation of all capital items based on 5 years;
- Management Fee at 10%.

4.22 Excludes the following:

- Any IT costs required for WMS & TMS;
- Communication costs e.g. telephone, broadband etc;
- Hire costs of additional vehicles;
- Handling equipment that may be required at delivery points;
- Warehouse consumables e.g. labels, shrinkwrap ;
- The cost of pallets;
- Cost of vehicle charging points.

Table 6 Kuehne & Nagel Cost Estimate

Item	Annual Cost	
	Scenario One – 22 deliveries per day	Scenario 2 – 44 deliveries per day
Warehouse		
Direct Labour	£47,176	£47,176
Facility	£50,000	£50,000
MHE	£8,640	£8,640
Total Warehouse Cost	£105,816	£105,816
Transport		
Direct Labour	£45,356	£89,843
Vehicle Fixed	£31,678	£63,357
Vehicle Running	£7,258	£14,517
Total Transport Cost	£84,293	£167,716
Management & Admin	£29,001	£29,001
Office Costs	£900	£900
Capital Costs	£5,738	£5,738
Total Operational Cost	£225,748	£313,914
Management Fee	£22,575	£31,391
Total Cost	£248,323	£345,305

Strengths and Weaknesses

- 4.23 **Previous experience:** Although an experienced international logistics and supply chain operator their knowledge and experience of urban freight consolidation is limited. It is understood that this would be their first operational experience of setting up and running an urban freight consolidation service for retailers. However they are familiar with the process of consolidation through their existing supply chain operations.
- 4.24 **Depot location:** The K&N depot is located to the east of Dundee on the West Pitkerro Industrial Estate and is therefore not ideally located to serve retailers in Perth. As stated in the proposal a round trip is some 62 miles. Also with the supply chain for Perth identified as coming from the south and west of Perth using the K&N depot would also require deliveries to Perth, that were not heading to Dundee or further east, to incur a significant amount of extra mileage.
- 4.25 **Depot facilities:** The K&N depot was observed as being adequately equipped to run a consolidation service in terms of floor space, handling equipment etc largely due to the existing trunking operation. However a potential problem was raised with inbound deliveries as it was identified that the peak (5am – 8am) for the consolidation service and the existing trunking operation may coincide, which could lead to issues regarding staff availability and vehicle turning movements.

- 4.26 **Electric vehicle:** The proposal has been put forward and costed on the basis of using an electric delivery vehicle. However there is a potential operational issue with the electric vehicle having a range of 100 miles as a single round delivery trip is 62 miles and would therefore require the vehicle to be re-charged before undertaking any necessary afternoon collections or remain in Perth to carry out collections from retailers in the afternoon.
- 4.27 **Retailer recruitment:** Although there is a lack of specific experience with urban freight consolidation K&N do have experience of undertaking retailer recruitment. Through their core work they have experience of developing bespoke supply chain solutions for their customers, and this should be transferable for a freight consolidation service. However they have unfortunately not costed the retailer recruitment element within their proposal.
- 4.28 **Estimated cost:** Prices quoted for both scenarios appear high based on previous experience. The variable cost between the two scenarios relates to additional transport costs and the need to employ a second vehicle to cope with additional deliveries. The cost estimate also quotes for 5000 sq ft of floor space, which is considered to be too much for the needs of the trial scheme and appears to negate the aspiration of sharing the facility and subsequently costs for labour and equipment. The cost estimate does not build in any element of retailer recruitment and is focused solely on the operational costs, which is not realistic for a start up trial as is proposed.

Kuehne & Nagel Summary

- 4.29 K&N are a vastly experienced global logistics operator. However their lack of knowledge of the specialist requirements of urban freight consolidation is apparent in their proposal. The location of the depot is not suitable for a consolidation service for retailers in Perth and operational problems would likely be encountered through range limitations of using an electric delivery vehicle. The cost estimate provided is considered to be overly expensive and would need to be re-evaluated in order to provide a more realistic option. A number of costs relating to the sharing of the K&N depot with the existing operation would need to be reduced, whilst the retailer recruitment costs would need to be built in.

Clipper Logistics

- 4.30 Clipper Logistics started in 1992 with a team of three and a single driver. Today, they are one of the UK's leading independent logistics companies with a turnover of £200 million. They pride themselves on challenging the old order and providing their customers with a real alternative. They now employ over 2500 employees, have a network of 28 distribution centres, 3.5m sq ft of warehousing space and a fleet of 650 vehicles.

Consolidation Scheme Proposal

- 4.31 Clipper Logistics have stated that a 'standard' annual charge for the first year of a consolidation centre is focused around a maximum budget of approximately £220,000. This would cover operation of the necessary warehouse space, provision of labour, vehicles, fuel, handling equipment, stock management systems and retailer recruitment. This figure is quoted as a maximum budget because it is based on the most optimistic rate of retailer uptake that would lead to the facility exceeding likely targets and fully occupying the initial warehouse space and vehicle capacity allocated. In other words quick achievement of Perth retailer uptake scenario number 2. In practice they would expect the charge to be less than £220,000 because a lot of the effort (and hence cost) would need to be invested in retailer recruitment so that extensive early scheme adoption and associated operational charges would take longer to materialise.

- 4.32 However, it must be noted that the figure of £220,000 is an initial standard response based on operation from an existing Clipper warehouse facility with conventional vehicles that incorporates assumed economies of scale with existing operations. This would not be the case for Clipper in Perth, as they do not have such a local facility. If they were to hire a dedicated facility and need to cover the full operating cost solely for the Perth consolidation centre the figure would be higher and in their view clearly unrealistic.
- 4.33 Given this situation Clipper Logistics has proposed an alternative approach of using an existing secure Council owned storage / warehouse facility, if one exists. This approach is based on a collaborative operation model that they are developing with Newcastle City Council making best use of the skills and assets of both parties in order to try to minimise the additional cost of the consolidation centre to the local authority. Their costing for this operational model is considerably lower at £120,000 and is on the same maximum budget basis with the expectation that the actual charge would be less, depending on the balance of recruitment versus operational costs during the trial.
- 4.34 Exact details of this operational model remain confidential, in part because it is still under development. However, the key aspects are as follows:
- Warehousing is provided using existing, secure council facilities with sufficient spare capacity. (Given the initial space requirement is relatively small they expect that somewhere within the local authority property portfolio such a facility will exist);
 - Clipper would conduct all retailer engagement / recruitment activities, including costs associated with marketing material and publicity, and provide a centre manager;
 - Centre staff would be drawn from existing council personnel who would receive the appropriate specialist training;
 - Clipper would arrange for the necessary insurance, handling equipment, stock management systems and would be responsible for initial vehicle provision. This would be a standard diesel delivery vehicle. They do have an electric vehicle demonstrator within their fleet, but they feel that it is unlikely that they would be able to provide this on more than a one month temporary trial basis due to pressure from elsewhere within the business.
- 4.35 The cost and risk associated with procuring an electric delivery vehicle for what could be a limited trial with no guaranteed ongoing life is considered to be too great for them as a business. The approach being taken in Newcastle is for the City Council to take on the commitment to purchase / lease the vehicle and the necessary recharging infrastructure and for Clipper to agree to operate it in the same way as a conventional vehicle.

Strengths and Weaknesses

- 4.36 **Previous experience:** Significant experience in setting up and running freight consolidation schemes through their existing operation at Meadowhall in Sheffield and also their on-going innovative work with Newcastle City Council to establish a consolidation centre to serve Newcastle retailers through a shared facility.
- 4.37 **Depot location:** As Clipper do not have a local base for Perth their proposal indicates two property solutions either a standalone operation based on hiring premises or a shared facility relying on the use of existing PKC facilities or potentially a third party premises. It is anticipated that either solution would be suitably located to serve retailers in Perth.

- 4.38 **Depot facilities:** Depending on the property solution Clipper would either have the ability to identify an appropriate base with the necessary facilities or they would be relying on the facilities available through PKC. However they would be able to then equip the facility with the necessary equipment to run a successful consolidation scheme.
- 4.39 **Electric vehicle:** Unfortunately Clipper has specified that they do not believe it would be feasible to provide an electric vehicle for the entire trial scheme as it is considered too great a risk for their business. They have indicated they may be able to provide an electric vehicle for part of the trial, but would be reliant on using standard diesel engine delivery vehicles for the remainder. Whilst this solution would still provide emissions savings through a reduction in delivery trips it does not provide the bigger statement of zero city centre emissions linked to the air quality driven nature of the trial.
- 4.40 **Retailer recruitment:** Clipper have a good understanding of the requirements for undertaking retailer recruitment tasks through their existing consolidation operation and have a number of established relationships with retailers/retail groups, which is considered advantageous. They have built in the necessary retailer recruitment costs to the proposal and understand the importance of this element in establishing a successful scheme.
- 4.41 **Estimated cost:** The estimates provided are encouraging and are based on a maximum cost assuming full retailer take up. The figures for both a standalone operation and a shared facility operation are considered realistic with an obvious preference for lower costs associated with using PKC facilities. The cost of leasing an electric vehicle by either Clipper or PKC/Tactran should be looked at in more detail.

Clipper Logistics Summary

- 4.42 Clipper's knowledge and experience of freight consolidation means they are considered highly capable of setting up and running a consolidation scheme. In particular their approach and understanding of retailer recruitment is sound. The key issues surround the property solution and the use of electric vehicles with significant cost implications associated with the options put forward.

DHL

- 4.43 DHL provides expertise in international express, air and ocean freight, road and rail transportation, contract logistics and international mail services to its customers. They have a global network composed of more than 220 countries and territories and 300,000 employees worldwide and are the world's largest contract logistics specialist.

Assumptions

- Based on Scenario 2: 20% retailer take up and 44 deliveries per day;
- Space is no more than 8kms from Perth retailers, this enables 3 to 4 trips per charge if using an electric vehicle;
- The space is available from a DHL, council source or third party on a shared user basis. £9 per square foot assumes power/services included;
- Driver costs are a double manned vehicle, both being able to drive. This improves security, reduces risk in heavy or difficult deliveries and;
- Facilitates spot hire of vehicles for volume spikes, holiday/sick cover and split shifts if required;
- The average delivery volume will be 1.25 cages per retailer (half Bristol's average);

- Does not include management fee, this will need to be negotiated.

4.44 The DHL costing is based on combination of recruitment and operational cost elements.

Table 7 DHL Cost Estimate

Item	Quantity	Est. Annual cost	Est. weekly cost
Floorspace	1200 sq ft @ £9	£10,800.00	£207.69
Manager	As required	£28,000.00	£538.46
Travel/accommodation		£750.00	£14.42
PC		£900.00	£17.31
PC support		£900.00	£17.31
Drivers (Agency initially)	80 hrs per week	£45,760.00	£880.00
Warehouse (Good quality individual)	40 hrs per week	£21,000.00	£403.85
Training, clothing etc.	3 people	£2,500.00	£48.08
Electric Vehicle Hire Charge		£18,200.00	£350.00
Electric vehicle charging (once per day)		£520.00	£10.00
Vehicle servicing	4 per year	£3,500.00	£67.31
Admin supplies	Goods in paperwork etc.	£260.00	£5.00
Phone/fax	1	£200.00	£3.85
Roll Cages	15	£351.00	£6.75
Hanging Garment Rails	10	£260.00	£5.00
(If possible, shared use of)fork lift	1	£1,040.00	£20.00
Pump Truck	1	£260.00	£5.00
P&V costs (PLI, GIT, ELI, vehicle premiums etc)	1	£12,000.00	£230.77
	Total	£147,201.00	£2,830.79
	Retailer Recruitment	£45,000.00	£865.38
	Total	£192,201.00	£3,696.17

4.45 Operational costs are based on scenario 2 and so are likely to be very much a maximum figure for the trial. Actual operational costs would be charged depending on throughput and actual costs incurred. It is worth noting that these costs do include costs for hiring and recharging an electric vehicle. DHL suggested verbally that they would prefer to establish the scheme using conventional vehicles without investing in an electric vehicle. They do have several electric vehicles in their fleet nationally, and would consider moving one to Perth if the scheme proved viable (i.e. throughput increased to reasonable levels) after the first trial period.

4.46 The majority of the cost is personnel associated with drivers, warehousemen and a manager. Warehousing costs are relatively low, partly because they are only anticipating a need for 1,200 sq ft.

4.47 Recruitment cost is associated with a full time business development manager, which is what would be expected and is realistic. A management fee is to be negotiated and could be influenced

through the use of KPI's, the cost associated with the management fee is likely to be cancelled out by the lower operational cost in the first few weeks / months.

Strengths and Weaknesses

- 4.48 **Previous experience:** Extensive experience in setting up and running freight consolidation schemes through their existing operations at Heathrow and Bristol and forthcoming Westfield scheme. Bristol experience involved working closely with the Local Authority, using electric vehicles and moving from a trial scheme to longer term operation with the focus on reducing costs and charging retailers where participation was voluntary, albeit in a situation where delivery problems were more pronounced than those observed in Perth.
- 4.49 **Depot location:** DHL initially indicated they had an existing delivery operation based on the Inveralmond Industrial Estate and that it would be possible to accommodate a consolidation service within this set up. However it became clear late on in the study that this was not the case and that it belonged to a section of the business called DHL Connect, which had subsequently been sold and was being rebranded in March 2011. This therefore leaves DHL without a confirmed property solution and in a similar position to Clipper whereby they would rely on using a shared facility within the PKC property portfolio or potentially a third party premises.
- 4.50 **Depot facilities:** Depending on the property solution DHL would either have the ability to identify an appropriate base with the necessary facilities or they would be relying on the facilities available through PKC or a third party. However they would then be able to equip the facility with the necessary equipment to run a successful consolidation scheme.
- 4.51 **Electric vehicle:** Like Clipper, DHL have indicated that their preference would be to use standard diesel engine vehicles for the trial scheme with the potential to involve an electric vehicle at some point depending on the viability of the scheme. However they have within their cost estimate quoted for hiring an electric vehicle, but it remains to be seen if this is a genuine option.
- 4.52 **Retailer recruitment:** DHL have an excellent understanding of the requirements for undertaking retailer recruitment tasks based on their previous experience and would be able to exploit established relationships with retailers/retail groups to bring retailers on board early on, which is considered advantageous. They have built in robust retailer recruitment costs to the proposal and understand the importance of this element in establishing a successful scheme.
- 4.53 **Estimated cost:** The cost estimates provided are realistic and are based on a maximum cost assuming full retailer take up and would therefore in reality be less than quoted. Although the management fee is not included and is to be negotiated.

DHL Summary

- 4.54 DHL undoubtedly have the knowledge and experience to set up and run a consolidation scheme and also undertake retailer recruitment duties. However the late disclosure of the lack of a facility in Perth has raised some concerns amongst the project team. DHL (like Clipper) are now reliant on the identification of property solution through PKC or a third party facility. There is also the question mark over the ability to use electric delivery vehicles for the entirety of a trial scheme.

Operating Structure Summary and Preferred Option

4.55 A strengths and weaknesses comparison table based on the three operator proposals is provided below along with commentary on the key issues and a preferred option.

Table 8 Operator Proposals Strengths and Weaknesses

	Previous Experience	Depot Location	Depot Facilities	Electric Vehicle	Retailer Recruitment	Estimated Cost	Total
Kuene & Nagel	2	3	3	4	3	3	17
DHL	5	3	3	3	5	4	23
Clipper Logistics	4	3	3	3	4	5	22

4.56 The table above takes in to account the operators' proposals, but also considers the implications of the wider issue of the current lack of a suitable property solution within Perth for any of the operators to run a consolidation service from. Therefore the table shows the same score for the Depot Location and Depot Facilities to each operator and the main distinguishing aspects are those relating to experience, ability to provide an electric vehicle, retailer recruitment and cost.

4.57 Unfortunately it is not possible to identify a preferred option on the basis of the comparison table above as a suitable property solution has not been identified. This leaves a situation where in order to take a potential trial scheme forward there are three options as outlined below:

1. Identify a property solution through utilising an existing PKC facility, which can then be offered to the three identified operators and a bidding process to run the trial scheme can be undertaken;
2. Request that the three operators identify their own property solution close to Perth and provide a bid to run the trial scheme on this basis, which could include partnership with a local operator;
3. Identify and engage with a local existing Perth operator with existing facilities and ascertain a proposal to run a trial scheme.

4.58 The key requirements for a property were define as shown below and an initial property search was conducted by the project team including PKC property department and also a scouting trip to Inveralmond, North Muirton and Perth harbour area. However no property was found that could immediately be considered for use in a trial scheme. The implications of this are reported in the conclusions of the report and the findings from the property site can be found in the appendices.

Key Property Requirements

- Floor space circa 2000 sq ft with the ability to install racking and accommodate back office operations;
- Ability to receive lorries up to 44 tonne articulated;
- Level access to comfortably accommodate forklift, or dock leveller in situ;
- Inbound deliveries to warehouse to arrive possibly 24 hours, mainly overnight to midday and peak between 5 and 8am;
- Inbound deliveries to warehouse likely up to 50 per day;

- Outbound deliveries to Perth city centre likely both AM and PM and potentially overnight;
- Facility to be operational 6 days per week and potentially 24hrs per day;
- Adequate security arrangements in place 24hrs per day, 7 days per week
- Suitable power supply enable re-charge of electric delivery vehicle would be required.

Consolidation Centre Charging Structure

4.59 The text below is taken from the feasibility study to serve as a reminder of the estimates derived from the data obtained from that study. This can now be compared to the proposals received from the logistics operators to compare and contrast and understand what a charging structure for the consolidation scheme could look like.

4.60 It is envisaged that the trial consolidation scheme for Perth would be subsidised through bidding for air quality funding from the Scottish Government. The intention for this part of the report is therefore to look at how the scheme would move from being fully subsidised to charging participating retailers for the consolidation service.

Feasibility Study Estimated Shared Cost Breakdown

Cost category	Approximate Cost (£)
Marketing and promotion of, and recruitment to the first operational year of a trial scheme for Perth (scenario 2a)	52,000
Share of vehicle and fuel costs	18,000
Share of fixed facility costs (rental for warehouse & office space and use of other existing operating facilities e.g. fork lifts)	24,000
Staff costs: full time drivers and share of other staff from existing facility (warehouse staff, fork lift drivers, management time)	30,500
Total	124,500
Optimism Bias at 14%	141,930

4.61 Notes:

- *The marketing cost includes a significant amount of staff cost that might be associated with the cost of employing a manager for the consolidation centre, who has significant marketing responsibility or a full time sales & recruitment employee, who has little day to day input to the running of the centre. Either way this would be a significant additional expense compared to the existing facility;*
- *Costs would vary as the throughput associated with the freight consolidation element, as compared to the existing site use, varied;*
- *The exact breakdown would depend on the detailed negotiation between public sector scheme promoter and the operators of the existing facility, and the allocation of costs would need to be seen as indicative in that context.*

4.62 *In terms of the level of charge required to recoup the full operating cost of a shared cost freight consolidation centre, then the charge level of £2 per box and £5 per pallet appears to be about right to cover costs for the higher throughput scenarios. The charge of between £2 – 5 is a per unit charge has been calculated to be sufficient to offset the operating delivery charge of between £9 – 19 for the shared facility scenario as there will multiple units delivered per delivery made.*

Table 9 Estimated Operating Costs Comparison

	Annual Operating Cost	Comment
Feasibility Study	£141, 930	Based on a shared facility and includes retailer recruitment costs
Kuehne & Nagel	£248, 323 Based on 10% retailer take up scenario	Scope to significantly reduce shared facility costs. Does not include retailer recruitment costs
	£345, 305 Based on 20% retailer take up scenario	
DHL	£192,000 Management fee to be negotiated	Based on use of PKC or third party facility and is a maximum price, likely to be lower. Includes retailer recruitment costs.
Clipper Logistics	£120,000	Based on use of PKC or third party facility and is a maximum price, likely to be lower. Includes retailer recruitment costs.
	£220,000	Standard quotation. Based on standalone operation and is a maximum price. Likely to be lower.

4.63 Based on the information provided by the operators it is possible to determine what the estimated set up and running costs for a trial scheme would be. For the purposes of this exercise the estimates provided by Kuehne & Nagel have been discounted due to the high costs associated with their proposal. However as identified they should not necessarily be discounted from running a similar operation from a location closer to Perth, as identified by Clipper and DHL. Therefore considering the cost estimates for a shared facility operation provided by Clipper: £120,000 and DHL: £192,000 this gives an average of £156,000 for 12 months of operation.

Key Performance Indicators

4.64 Key Performance Indicators (KPIs) are a further key element of a potential trial scheme in terms of ensuring that both the wider policy objectives of the scheme are being met and also the operational and financial elements of the scheme are being monitored and are working as efficiently as possible.

4.65 The KPIs defined in this section are bespoke to Perth, but do take in to account previous experience from existing consolidation schemes and are aligned with the TPOs as defined in Section 1 and also STAG principles.

Trial Freight Consolidation Scheme KPIs

1. Reduce delivery vehicle trips to store for participating retailers by at least 50%;
2. Contribute to improving air quality and addressing climate change issues in the Perth AQMA in pursuit of the objectives for carbon dioxide (CO₂) nitrogen dioxide (NO₂) and particulate material (PM₁₀);

3. Recruit five retailers to the scheme before the trial commences and a minimum of twenty five retailers by the end of the trial period;
 4. 100% on time deliveries to retailers for the duration of the trial;
 5. No occurrence of lost or damaged stock for the duration of the trial.
- 4.66 It is suggested that neither a percentage nor an absolute figure is attached to the air quality KPI as it will be difficult to isolate and measure the impact of the trial scheme, although data relating to estimated vehicle emissions savings can be collected as part of the monitoring regime.

Monitoring Regime

- 4.67 The KPIs should be monitored and reviewed and if necessary altered on a month-by-month basis as part of scheduled monthly progress meetings with the client. The monitoring regime below will be implemented by the scheme operator.
1. Record the number of inbound deliveries made to the consolidation centre and the subsequent number of delivery vehicle trips made by consolidation scheme vehicles to retailers in Perth. Report the figures on a month by month basis.
 2. Record the inbound delivery vehicle type, size and age and calculate using national vehicle emission standards the emissions saved by using the consolidation centre i.e the mileage of a round trip from the consolidation centre to retailers in Perth and back. Subtract from the total the emissions from the delivery trips made by consolidation vehicles. Additional mileage that has been travelled by a supplier to reach the consolidation centre should also be recorded and subtracted from the savings in the same way. Report the data on a monthly basis.
 3. Record the progress of retailer recruitment including details of retailers contacted, contact name(s), contact details (telephone, e-mail etc) and their willingness to participate in the trial consolidation scheme;
 4. Record any instances of deliveries not being made on time to retailers. The reason for any late delivery should also be recorded;
 5. Record any occurrence of lost or damaged stock. The reason for the occurrence should also be recorded.
- 4.68 It is suggested that the KPIs are linked to any agreed management fee for the scheme operator as a financial incentive to run the scheme successfully. Depending on the level of management fee agreed e.g. 10% of total operating costs, then a suggested regime of 5% guaranteed and 5% based on achieving KPI targets could be implemented. This can then be monitored through the monthly reporting and be reflected in the payment scheduled for the trial scheme.
- 4.69 For a longer term scheme it is anticipated that while the focus of the scheme to achieve air quality objectives is likely to remain there will be a need to move to a more sustainable business model and therefore the KPIs would need to reflect that. Any scheme that continues on past the trial phase is likely to continue to need subsidy in the short to medium term. However, revenue generation should become part of an on-going scheme with the onus put on the scheme operator to start recouping costs through charging retailers for the consolidation service provided. This should be considered in line with the implementation of complementary measures as described in Section 5 to help drive retailer recruitment and overall scheme development.

- 4.70 It is expected that retailers would be reluctant to pay for the consolidation service even though they may through participating in the trial understand and appreciate the benefits of receiving consolidated deliveries. It will therefore be necessary to demonstrate the cost savings that they have or could achieve and thus attach a monetary value to the consolidation service. This is an exercise that could be built in to the scope of the retailer recruitment process towards the middle or end of the trial period to understand retailer's perception of paying for the service for an on-going scheme. This would help indicate the level of revenue generation that could be achieved. A potential target for the end of the first year of operation beyond a trial would be to recoup 10-15% of operating costs through revenue generation. On this basis a KPI would be introduced placing a requirement on the scheme operator to achieve this level of revenue generation and this would be linked back to the management fee as previously mentioned.
- 4.71 The retailer charging proposal developed in the feasibility study suggested that in terms of the level of charge required to recoup the full operating cost (£141,930) of a shared cost freight consolidation centre, then a charge of between £2 – 5 is a per unit would be sufficient to offset the operating delivery charge of between £9 – 19. It is envisaged that this scale of charging regime would still be sufficient to cover the costs of the averaged Clipper and DHL proposals. It should be noted that the actual charging regime will vary from retailer to retailer and will be a bespoke cost based on their individual delivery requirements. This would be developed and agreed between the retailer and the scheme operator and would form part of contract to confirm the retailers participation in the scheme.

Timing of the Trial

- 4.72 Experience of other freight consolidation schemes (e.g. Bristol, Norwich) indicates that it can take a period of weeks or even months to convince individual retailers that participation could be compatible with their existing supply chain arrangements, meet their wider business needs and be beneficial to their business. This will require in depth discussions with individual retailers and will most likely lead to a staged increase in participant numbers during the trial.
- 4.73 It is worth noting that the retail sector is heavily dependent upon sales linked to the Christmas period. This means that retailers are often difficult to engage with in the period mid-October to mid-January and leads to a reluctance to make changes to supply chains during or in the run up to this crucial period.
- 4.74 Hence starting a trial in the summer or autumn would not be ideal, and points to a start date in late winter or spring. This would provide sufficient time for a substantial recruitment period prior to the Christmas peak allowing an assessment both of the operational performance and the success of the recruitment effort during the best time of the year.
- 4.75 Changing a business' supply chain is not something to be taken lightly and it is unlikely that participating retailers would want to commit to the trial unless there was a substantial operating period remaining. Therefore, it will be beneficial to make the trial last for as long a period as possible within the bounds of the available funding. It is expected that in practice this means committing to as much as long a period as possible within a single financial year, as this is the period over which Scottish Government air quality funding is allocated.
- 4.76 Given that further investigations are required prior to a decision to proceed with a trial, and that would be followed by an OJEU-compatible tender process that would take up to 3 months, it appears that the timescales leading to the earliest possible start of a trial of sufficient duration would be as follows:

- *Further research, specification and approval – spring & summer 2011;*
- *Initiate tender process – autumn 2011;*
- *Appoint preferred bidder – January 2012;*
- *Confirm arrangements and conduct preparatory detailed retailer recruitment – January to March 2012;*
- *Formal trial launch – April 2012;*
- *Operation (including quarterly reviews) – April 2012 to March 2013.*

5 Complementary Measures

- 5.1 This section provides a review of a number of complementary measures. The term complementary has been used to describe these measures as they will both support a trial freight consolidation scheme or be adopted as part of an on-going longer term scheme, and could also contribute to addressing wider local air quality management objectives.
- 5.2 The complementary measures take into account the aspirations of the Air Quality Action Plan (AQAP) for Perth and the TACTRAN Freight Quality Partnership Action Plan to ensure a consistent approach. Key drivers in assessing these measures include; assisting in the development and retailer uptake of a potential consolidation scheme, the KPIs as described in the previous sections and TPOs as defined in Section 1. As stated in Section 2 it is stressed that the FCC and the complementary measures should really be seen as being part of a wider initiative and package of measures aimed at tackling air quality and improving distribution efficiency in the region.

Low Emission Zone

- 5.3 This measure focuses on the introduction of a Low Emission Zone (LEZ) and indicates that the first step on this path could be through limiting delivery access to zero emission vehicles e.g. the electric delivery vehicle proposed for use in the trial consolidation scheme.
- 5.4 A key consideration for this measure is ensuring a ‘low tech’ or ‘light touch’ approach in order to minimise associated costs and complications.
- 5.5 An example of a low tech LEZ, administered with dashboard permits can be found from the national scheme in place in Germany¹. There is a standard classification for all vehicles into 4 categories which govern access under a common regime to all LEZs in the whole country. The standard classifications are as follows:

Table 10 German LEZ vehicle classifications

Emissions category	Window Sticker	Euro Standard	Effective dates for light duty vehicles	Effective dates for heavy duty vehicles
Diesel vehicles				
1	None	Euro 1 or older	Before 1/1/1997	Before 1/10/96
2	Red	Euro 2	1/1/1997 – 31/12/2000	1/10/1996 – 1/10/2001
3	Yellow	Euro 3	1/1/2001 – 31/12/2005	1/10/2001 – 30/9/2006
4	Green	Euro 4	After 1/1/2006	After 1/10/2006
Petrol vehicles				
1	None	Before Euro 1	Before 1/1/1993	
4	Green	Euro 1 and later	After 1/1/1993	

- 5.6 Where vehicles have been modified in a way that would affect their emissions performance, generally via retrofitting with an emissions reduction device, the owner / keeper of the vehicle can apply to the national authority for the appropriate certificate. This is also the case for the London LEZ scheme.

¹ Further information can be found at: <http://www.lowemissionzones.eu/countries-mainmenu-147/germany-mainmenu-61>

- 5.7 Enforcement is by manual observation and matching the categorisation of a particular LEZ to the window sticker displayed. If a vehicle is not displaying a sticker it is assumed that it is category 1 – i.e. does not qualify for a permit. By way of an example, if an LEZ is designated as yellow, then category 3 and 4 diesel vehicles and category 4 petrol vehicles (i.e. any vehicles displaying yellow and green window stickers) would be allowed entry without risking a fine, but other vehicles would risk a €40 fine plus one point for the owner / keeper / driver's licence.
- 5.8 In terms of applying a similar formula to Perth, especially in support of the freight consolidation scheme, it is recommended that vehicle classification be kept to just 2 classifications – electric vehicle and non-electric².
- 5.9 The LEZ would need to apply to any vehicle making deliveries to retailers in Perth, which covers all categories of vehicle, since delivery trips are not restricted to HGVs - shop owners' private cars and small vans are used for this purpose on an *ad hoc* basis more frequently than is generally realised.
- 5.10 Permits would need to be issued by PKC, with enforcement being incorporated as part of the existing arrangements for other stationary traffic offences. Permits should be of a size and design that make identification easy. The design should also tie in with any wider brand identity developed for the overall air quality initiative.
- 5.11 Application of the LEZ would need to be to all points where deliveries can be made, i.e.:
- Within the pedestrian area;
 - At designated loading bays;
 - At all other locations on the roadside where loading is not prohibited.
- 5.12 The exact details would need to be considered in conjunction with PKC's parking and highways teams. However an initial application might be as set out in Table 11:

² Hybrid vehicles were considered for inclusion, but unfortunately there is uncertainty surrounding their use because some, but not all, can operate in purely electric mode and enforcement issues could arise if there is a need to prove whether or not the hybrid vehicle was operating in electric mode or not at the particular time in question. Hence the preference for distinguishing between electric and non-electric vehicles.

Table 11 Perth Low Emission Zone Proposal

	Pedestrian Area	Specially Designated EV Loading Bays	Other loading bays and on street areas where loading is not prohibited	On street areas where loading is prohibited
Permitted vehicle (i.e. EV)	Before 11am After 4pm	Anytime	As per site-specific restrictions	Not allowed
Any vehicle	Before 8am After 6pm	Before 8am After 6pm	As per site-specific restrictions	Not allowed
Desired Consequence	No deliveries in pedestrian area as currently the case, but electric vehicles strongly favoured in terms of convenience to retailers Non-electric vehicles excluded from peak	Preferential access for EVs	Provide guidance on safe locations for delivery vehicles to stop, both on- and off-street, particularly for non-EVs, but available to all delivery vehicles	Prohibit stopping in inappropriate / dangerous locations.
Risk	Non-electric vehicles may circulate in afternoon peak traffic waiting for 6pm entry cut-off.	Blocking by non-EVs that may be difficult to enforce	Until behaviour change occurs designated areas may not cope with demand	Restrictions continue to be ignored (as is often the case)

5.13 Consideration would need to be given to if / whether / where specially designated loading bays would be located to satisfy demand and give a clear signal for behaviour change. However, consideration would also need to be given to possible unintended consequences (as noted by the presence of a risks section in Table 11). For example, designating an existing loading bay for electric vehicles without prohibiting on-street loading around it might just result in more delivery vehicles on the street, potentially increasing congestion whilst there is an unused delivery bay located close by.

5.14 An option would be to use an experimental Traffic Regulation Order (TRO) to implement the necessary delivery vehicle access arrangements. Experimental TROs can be in force for up to 18 months and there is no requirement to undertake consultation, rather it has to be advertised for a 3-4 week period prior to implementation. The TRO can then be made permanent after this period. A monitoring regime would need to be included perhaps as part of the enforcement procedures to understand the implications of the revised delivery vehicle access arrangements. It is suggested that industry bodies such as the Freight Transport Association (FTA) and Road Haulage Association (RHA) are involved in the development of this measure in order to gain their support for its implementation.

- 5.15 Appropriate signage and on street markings would be needed to make drivers aware of the new access arrangements and the FTA and RHA should be utilised to help communicate this information to their members. In terms of signage it is anticipated that discussions would be needed with Transport Scotland to secure type approval. The sign shown below is taken from the Department for Transport, 'Traffic Signs (Amendment) Regulations and General Directions 2010' and although it has not received approval as yet, it indicates the type of sign that is being brought forward for use in the case of on-street electric vehicle charging points. The sign identifies an electric vehicle charging point and indicates a motor car along with appropriate wording. This would obviously need to be adapted for the purposes of depicting an electric delivery vehicle only loading area. However it does show that there is scope to implement a measure of this nature.

Figure 3 Electric Vehicle Signage



- 5.16 As set out in the LEZ proposal the revised delivery vehicle access arrangements would apply to the pedestrian area and would also apply to a number of on street loading bays. Taking in to account the prominent retailing locations within Perth outside the pedestrian area and the location of current on-street loading bays, designated EV only loading bays could be implemented in South Street (potentially one at either end), South Methven Street and the non-pedestrian section of High Street.
- 5.17 It is suggested that this measure would be best kept as a post-trial phase initiative to help drive further retailer take up. The costs associated with implementation are considered to be low, with staff time being the main element for drafting the TRO and advertising and liaising with Transport Scotland on type approval for signage. The cost of new signage in advance of and on entry to the pedestrian area, at designated loading bays and also road markings is estimated to be in the region of £3-4,000 based on utilising existing infrastructure and either replacing or adding the sign.
- 5.18 Timescales are estimated at anything from three to nine months depending on the ease of gaining type approval from Transport Scotland and liaising with trade bodies.

Fleet Recognition Scheme

- 5.19 A fleet recognition scheme would likely form part of the broader support measures highlighting air quality and the link to vehicle emissions.
- 5.20 ECO Stars Fleet Recognition Scheme is an established fleet recognition scheme that originated in South Yorkshire during the autumn of 2008 and officially launched in January 2009. It was originally a component part of the wider 'Care4air' initiative, designed to engage with residents and

local businesses about the need to improve local air quality through a wider range of activities in different sectors.

- 5.21 The aim of ECO Stars is to provide recognition to operators of vans, trucks, buses and coaches for the 'cleanliness' of their fleet and for the best practice they exhibit in operational fleet management. It is free to join and its aim is to encourage operators to run newer, cleaner fleets and to manage them effectively, reducing fuel consumption, reducing operating costs and reducing environmental impact (vehicle emissions in particular). This is achieved by
- Issuing 'star ratings' for individual vehicles in each fleet and for the whole operation;
 - Develop an operational efficiency 'road map' for each scheme member, outlining current levels of efficiency and areas for improvement;
 - Regular follow-up contact with scheme members to assess new vehicles brought into service, new operational practices etc, which might alter Star ratings.
- 5.22 Members also receive a membership certificate (plaque for 5 Star Members), vehicle decals, member letterhead, scheme member logo, regular newsletters, invitations to events, support with applications to 3rd party awards such as the Motor Transport Fleet Awards.
- 5.23 The operational efficiency 'road map' is essentially an action plan for each scheme member to help them progress through the overall operational ECO Star ratings (1-5). It involves an assessment of what they currently do and an outline of what they could do to improve efficiency in the key areas of:
- Fleet composition
 - Fuel management
 - Driver skills development
 - Vehicle specification and preventative maintenance
 - Use of IT support systems
 - Performance management and use of KPIs
- 5.24 In the 2 years since its launch, the scheme has grown to over 30 members (including both local operators and household names like Sainsbury's, Morrison's, Stagecoach, FIRST Group), with a total registered fleet in excess of 5,500 vehicles. (For national organisations it is the local depot and/or vehicles that operate in the area in question that are assessed, reflecting the regional nature of the scheme.)
- 5.25 Feedback from the funding authorities has been very positive, as they've found the scheme to be an effective way to engage with a wide range of operators of goods and passenger transport vehicles, to give them recognition for what they currently do and a helping hand to make operational improvements, all with the aim of improving efficiency and reducing fuel consumption (delivering the emission benefits at the top of the funding authorities' agenda).
- 5.26 Feedback from members has also been very positive as they value the recognition they receive, the enhanced local profile and the 'road map' they receive. In particular the bespoke 'road map' gives them guidance about which aspects of their operations they should focus attention on and the types of measures they could introduce to make improvements. These road maps are seen as a real benefit to operators and are the tools to help operators improve efficiency and reduce vehicle emissions.

- 5.27 There has been a good deal of interest from other local authorities potentially keen to roll out the scheme in their areas. Mid-Devon is the first of these (which successfully applied to DEFRA for funding to do so, as South Yorkshire had done partially before) and DEFRA has referenced the ECO Stars as a 'good practice' example in numerous presentations. Edinburgh City Council is part of a pan-European Consortium that has bid for funding to explore further scheme roll out. The application is progressing successfully through the European Commission's grant approval process with it being evaluated favourably and the specific scope being negotiated. A key element regarding further roll out is the desire of industry for ECO Stars criteria to be consistent throughout the country in order to avoid inconsistency and confusion. It has also received consistently good and repeated coverage in key trade titles Commercial Motor and Motor Trader giving the scheme national profile.
- 5.28 Costs for an ECO Stars scheme would depend on the ambition in terms of level of proactive goods vehicle and bus / coach operator recruitment envisaged and the amount of in-house effort provided from within PKC to support the scheme. A ballpark figure for a basic roll-out in a new area (using the ECO Stars brand and building on its base materials, like the database and the application form & guidance notes) would be in the region of £25k per annum, plus £5k 'franchise' fee payable to the South Yorkshire authorities for use of the ECO Stars brand, the IPR for which rests with Barnsley Metropolitan Borough Council. The £25k figure would cover outsourcing scheme management in its entirety, including all administration, recruitment, promotion, site assessments and road map development, as well as project reporting to the client and could be tailored depending on the negotiated requirement. Implementation could be immediate, although the annual basis of the required air quality funds means that the scheme could run into uncertainty linked to annual funding renewal, although ongoing funding requirement would be lower once initial set-up complete.
- 5.29 Because ECO Stars is already established in two areas of the UK with national companies among the membership it has a readily accessible list of companies that could be approached with regard to recruiting their local depots. Of particular importance in respect of Perth would be:
- Stagecoach, given the location of their national headquarters, who are members in South Yorkshire;
 - National retailers such as: Sainsburys (mid-Devon & South Yorkshire), Next (mid-Devon & South Yorkshire) and Morrisons (mid-Devon and South Yorkshire);
 - Royal Mail (South Yorkshire);
 - Clipper Logistics (mid-Devon and South Yorkshire);
- 5.30 Other more local operators would then be recruited, for whom the scheme might be their primary source of assistance and benchmarking on operational improvement. Potential recruits to be targeted could be:
- Perth & Kinross Council
 - Scottish Citylink
 - A M Travel
 - Earnside Coaches
 - Smith & Sons
 - Morris Young Group

- A Bryce
- AJ Morton
- A M Howie
- David Duncan Haulage
- Douglas Brown
- JFH Distribution
- McLaughlan Transport
- RSM Haulage
- Wightman Logistics

5.31 It is recognised that if some of these are small or ‘one man band’ operators then it could be difficult to engage with them. However, the benefits of scheme membership and particularly the ‘free of charge’ specialist fleet management and operational efficiency support (via the bespoke ‘road map’ and supplementary support) would be heavily promoted to encourage sign-up.

Delivery and Servicing Plans

5.32 Delivery and servicing plans (DSPs) provide the opportunity to manage goods and commercial vehicle activity to and from both proposed developments and currently operating sites. Delivery and servicing plans draw upon a range of possible tools, actions and interventions aimed at reducing and retiming deliveries, redefining building operations and ensuring procurement activities also account for vehicle movement, including emissions. A delivery and servicing plan should be site-specific using those tools that are appropriate to the location in question. DSPs can be developed for an individual business, a business location or a geographic location shared by several businesses.

5.33 Taken together it is clear that DSPs are closely related to the well established Travel Plan process and effectively are a Travel Plan for freight. The importance of efficient freight transport is recognised in Scottish Planning Policy published by the Scottish Government in February 2010, which notes that ‘Efficient freight movement and storage is of significant economic importance’.

5.34 The implementation of DSPs has yet to be widely taken up, however, the London Freight Plan, published by Transport for London (TfL) in November 2007 identified DSPs as one of four key projects through which it aims to achieve an increase in sustainability for goods movements in London. Furthermore, the TfL publication ‘Guidance for workplace travel planning for development’ (2008), states that ‘All travel plans should include a provision for the development of Delivery and Servicing Plans, which incorporate a legal loading plan and where necessary a Construction Logistics Plan to manage movements associated with a development’s construction phase’.

5.35 More recently TfL has used DSPs as a method to encourage selected businesses on its new ‘cycle superhighways’ and the forthcoming ‘Olympic route network’ to consider how they receive and manage inbound and outbound consignments, how the new arrangements affect them and how arrangements can be better managed in order to reduce conflict and increase efficiency.

5.36 The main objectives of a DSP are reducing the number of trips, particularly in the peak period, promoting safe and legal loading, to assist in promoting best practice through TfL’s Freight

Operator Recognition Scheme (FORS) and reducing congestion on the road network and reducing the number of PCNs. Benefits of introducing a DSP include; reduced emissions, reduced congestion, improved safety and security, improved business efficiency, potentially reduced costs and demonstration of enhanced Corporate Social Responsibility.

- 5.37 The similarity of DSPs and travel plans opens the possibility of obtaining funding from the Energy Saving Trust, which continues to offer its site specific advice programme for travel plans in Scotland. Providing there is buy in from the business in question, the development of a DSP for an individual business should not be significantly more difficult, time consuming or costly than the development of a travel plan. Ideally the DSP would be followed up with ongoing delivery surveys in order to assess the effectiveness of the implemented measures on an annual basis. Clearly a more wide-scale DSP implementation would be more complex and costs would be more difficult to estimate as they would be affected by number of participating business and what would inevitably be a variable level of support from the individual businesses.
- 5.38 A key perspective in the usefulness of DSPs in the context of freight consolidation is the way in which the two issues are viewed: DSPs are seen as the primary policy tool which can then be used to support the introduction of consolidation schemes, which should not in themselves be seen as a goal, but merely as a means to achieving a measurable objective such as reduced congestion or improved air quality.
- 5.39 TfL has worked with around 20 organisations in a variety of sectors across London to pilot the DSP concept and a range of different impacts have been highlighted as part of these case studies which show how DSPs can help both the individual businesses and the public policy agenda. Examples include:
- Reduced number of deliveries in the peak;
 - Reduced number of suppliers leading to reduced administration costs and less staff time handling multiple deliveries and collections;
 - Reduced congestion at off-street delivery bays leading to better stock reliability;
 - Reduced numbers of outbound trips by council delivery vehicle leading to reduced transport costs;
 - Incorporating stronger environmental criteria into procurement (vehicle or supplier) leading to lower pollutant emissions (local air quality and CO₂).
- 5.40 In the context of Perth, DSPs could be implemented individually or perhaps based around geographically co-located groups of shops – for example those within the St John’s Centre which share some delivery facilities and then perhaps grouped on street location.

Reduced Business Rates for Participating Retailers

- 5.41 Providing a reduction in business rates for retailers who participate in a freight consolidation scheme in Perth should be considered as a potential fiscal complementary measure. The measures described have generally focused on operational incentives whereas reducing business rates would provide significant financial incentive to retailers to participate in the scheme.
- 5.42 Business rates, formally known as non-domestic rates, are the business equivalent to Council Tax. Businesses pay rates as their contribution towards the cost of local authority services. The non-domestic rates collected by local authorities are paid into a central government pool and are redistributed to all charging authorities based on a prescribed formula. This redistributed income,

together with income from Council Tax payers and revenues support grant from the Government, is used to pay for the services provided by the local authority.

5.43 Non-domestic rates are calculated by rateable values of a non-domestic (business) property, multiplied by a poundage set nationally by Scottish Ministers, less any relief to which a ratepayer may be eligible. Non-domestic properties are properties such as shops, offices, warehouses and factories, and any other property that is not classed as domestic property. There are a number of rate reliefs available such as:

- **Small Business Bonus Scheme:** From 1 April 2010, if a ratepayer who occupies or is entitled to occupy one or more non-domestic properties has a combined rateable value of £18,000 or less, a discount of between 25% and 100% is potentially available. In addition, where the cumulative rateable value of a business's property falls between £18,000 and £25,000, the Scheme will offer 25% relief to individual properties with a rateable value of up to £18,000.
- **Charities:** Where an organisation is a registered charity, listed on the register maintained by the Office of the Scottish Charity Regulator (OSCR), and the property occupied by the organisation is used "wholly or mainly for charitable purposes", they may be entitled to 80% mandatory rates relief. It is up to each local authority to determine whether a property is being used "wholly or mainly for charitable purposes". The local authority also has discretionary powers to top this relief up to 100%.

5.44 Other forms of relief cover community amateur sports clubs, certain type of business in rural settlements, stud farms, severe hardship relief and disabled persons relief

5.45 After liaison with the PKC revenues team it is apparent that the decision to alter business rates for a specific reason can be taken locally. However any proposal would need to be supported by a sound evidence base to demonstrate the need for such an alteration in this case a reduction in business rates for those businesses participating in a trial scheme along with a cost benefit analysis of the likely economic impact. This measure is considered to be something that could be implemented in the longer term in line with an on-going permanent scheme and could potentially be used as an introductory measure for a limited period to incentivise participation.

6 Funding Opportunities

6.1 This section provides information on funding opportunities that exist to assist with consolidation scheme set up and operating costs. The search undertaken has considered European, national and other potential funding opportunities.

European Funding Sources

6.2 European funding is available for a range of different research and demonstration activities in a number of different funding programmes. Four programmes which offer potential sources of funding for transport and environmental projects have been considered in the context of the freight consolidation project in Perth. These are (in alphabetical order):

- CIVITAS
- Intelligent Energy Europe
- INTERREG
- LIFE+

6.3 These funding streams each have a different focus which reflects the source of the funding and result in different characteristics, which are summarised as follows:

CIVITAS

6.4 CIVITAS is part of the 7th research framework and as such looks to implement innovative research and development demonstration projects. CIVITAS projects have already funded freight consolidation centres in the UK (previously Bristol, Norwich and now Bath). However, CIVITAS projects require a large scale integrated package of measures covering 8 interrelated sustainable transport topic areas, require collaborative working with 3 other cities in Europe and have infrequent calls for proposals. There is currently a call for proposals open (deadline early April 2011), but without a collaborating consortium already in place it is probably too late to consider developing a coherent bid. CIVITAS projects tend to be relatively large, with funding of several million Euros per demonstration site, which shows the scale of the projects that are funded.

Intelligent Energy Europe

6.5 Intelligent Energy Europe is focused on measures designed to overcome market barriers to a more energy efficient economy through a mix of capacity building, spreading of know-how and best practice, exchanges of experience, policy input, awareness raising, education and training. As such the IEE programme is not designed to fund "Hardware" type investments, demonstration projects, and technical research & development projects, but acts rather as a catalyst for socio-economic, market, regulatory, policy and institutional changes (e.g., international transfer of experience, promotion of best practices, education and training, institutional capacity building, information dissemination, creation of new standards and norms etc.). IEE does have a transport stream, but has already investigated a range of urban freight measures including freight consolidation and this was used to pay for the explicit investigation and introduction of the electric vehicles to the Bristol consolidation centre. There is a call for proposals due imminently (deadline early May 2011), but it is considered unlikely that funding would be forthcoming given that this issue has already been dealt with. IEE projects tend to be relatively small at €200-350,000 per site over 3 years, reflecting the lack of equipment or infrastructure content.

INTERREG

6.6 INTERREG is a programme focused on improving inter-regional co-operation between public authorities. Each location within Europe is assigned within two 'regions' of Europe. Perth falls within both 'North West Europe' and the 'North Sea Region'. There is a programme secretariat that runs calls for INTERREG projects within each region. There are no imminent calls for the North Sea region, but 2 calls for North West Europe are expected in 2011, with deadlines in April and then sometime in the autumn. One of the four priority areas within the North West Europe programme is:

- "Improving connectivity in NWE by promoting intelligent and sustainable transport and ICT solutions",

and within this there is an objective:

- "to manage transport growth through optimisation of the capacity of existing (uni-modal) transport infrastructure for both passenger and freight transport"

6.7 Freight consolidation could clearly form a part, possibly the major part of such a bid. It would, however, need to be incorporated within a wider project envelope focussing as a broader package of urban freight management and probably ICT solutions in order to stand a reasonable chance of funding. It would also need to demonstrate interregional links and interconnectivity over and above the networking that would follow as a matter of course from a multi-site project. INTERREG projects would normally include a significant infrastructure and equipment component and so tend to be relatively large projects.

LIFE+

6.8 LIFE+ is the main funding programme for the EC Directorate General for Environment. The European Commission favours the co-financing of large, ambitious LIFE+ proposals with a substantial budget. Historically, the average grant awarded has been in excess of € 1 million and more than this is definitely possible, although there are limits to the total amount of funding available in each country for each strand of LIFE+. The maximum Community co-financing rate for LIFE+ projects is 50% of the total eligible project costs. Because of the way that the EC defines 'eligible costs' it is common for the actual co-financing rate to be around 33%. LIFE+ is split into 3 strands – the one relevant to freight consolidation is called LIFE+ Environment Policy & Governance which includes, climate change, air quality and urban environment key priorities. A project can aim to address more than one key priority. The annual LIFE+ call was released in February 2011 with a deadline of mid-July. Because of the particularly protracted method for evaluation of LIFE+ proposals a successful bid to the forthcoming call for proposals would not start before June 2012. LIFE+ has already funded an urban freight distribution project using a consolidation centre and electric vehicles. This project was based in Italy, and the nature of LIFE+ projects, which means that they can be single country / single site projects probably means that this in itself would probably not be a show stopper, though this would need to be checked prior to embarking on a bid. However, in order to gain funding in the context of Perth it seems likely that the freight consolidation centre would be unlikely to be a strong enough project to justify LIFE+ funding. A package approach incorporating various urban freight management tools with a bigger potential impact than the consolidation centre alone would probably be needed to match the EC's ambition for LIFE+ projects.

Table 12 European Funding Summary

Programme	Criteria	Funding Available	Timescales	Chance of Success
CIVITAS	8 sustainable transport topic areas, working with 3 other cities in Europe	€ millions	Deadline early April 2011	Without consortium already in place too late to consider developing a coherent bid X
Intelligent Energy Europe	focused on measure to overcome market barriers to a more energy efficient economy through a mix of capacity building, spreading of know-how and best practice etc	€200-350,000 per site over 3 years	Deadline early may 2011	Unlikely as freight consolidation has already been dealt with X
INTERREG	Focused on improving inter-regional co-operation between public authorities. Perth falls within two European 'regions' both 'North West Europe' and the 'North Sea Region'	€ millions	Calls expected in 2011, deadlines in April and then autumn	Freight consolidation could form part of a bid. Would need to be incorporated within a broader package and demonstrate interregional links and interconnectivity ✓
LIFE+	LIFE+ is split into 3 strands – freight consolidation linked to Environment Policy & Governance which includes, climate change, air quality and urban environment key priorities.	In excess of € 1 million	Deadline mid-July 2011	Freight consolidation alone not strong enough. Package approach incorporating urban freight management tools with a bigger potential impact needed to match LIFE+ project ambitions ✓

National and Other Funding

- 6.9 The search for national (UK) funding sources has focused on opportunities outside of the known air quality funding stream, which may be pursued based on the outcomes of the study. Through both desktop based research and discussions with PKC staff, JMP staff and Transport Scotland it has unfortunately not been possible to identify any additional current funding opportunities. A number of funding sources were identified, but following further investigation they were discounted due to the criteria required. Some funding sources were identified as having potential, but an appropriate call was not available at the time of writing.

Freight Mode Shift Grant Schemes

- 6.10 The Scottish Government actively encourages the transfer of freight from roads onto rail and water and operates three Freight Mode Shift Grant schemes. In 2010/11 the Support for the Freight Industry budget is £10.3 million which funds these three grant Schemes.
- 6.11 Mode Shift Revenue Support (MSRS)/Waterborne Freight Grant (WFG) schemes continue to operate. Applications for MSRS and WFG funding for the period 1 April 2011 to 31 March 2012 should be made by 31 January 2011
- 6.12 Unfortunately the mode shift grants only focus on switching freight from road to rail or water and do not allow for opportunities to improve road freight efficiency therefore the consolidation scheme is not applicable.

Climate Change Fund

- 6.13 The Climate Challenge Fund supports communities to tackle climate change by reducing their carbon emissions. Over 250 communities have been funded and are working hard now to deliver carbon emissions reductions. The recent draft Scottish budget for 2011-12 has increased the Climate Challenge Fund to £10.3 million for 2011-12. Applications to this new scheme went live on 5 January 2011 for activities that will take place between 1 April 2011 and 31 March 2012.
- 6.14 Applicants must be Scottish based and by the time a grant is approved they must also be legally constituted, not-for-profit community groups. The grant scheme specifically requires that the community must be responsible for all of the decision making relating to the project.
- 6.15 On this basis it is unlikely that a community group would form specifically to set up a freight consolidation scheme for Perth.

Technology Strategy Board

- 6.16 The Technology Strategy Board is an executive non-departmental public body (NDPB), established by the Government in 2007 and sponsored by the Department for Business, Innovation and Skills (BIS). Their role is to stimulate technology-enabled innovation in the areas which offer the greatest scope for boosting UK growth and productivity. They promote, support and invest in technology research, development and commercialisation.
- 6.17 By way of example a previous call in December 2009 on 'Informed Logistics', worth up to £10m, funded collaborative projects that aimed to develop innovative systems and services so that goods could be moved around the country more effectively. It considered the entire supply chain, and the whole spectrum of goods distribution, including; rural, local, regional, national and international distribution. Projects were funded that helped cut the environmental impact of road congestion by influencing customer choices towards more sustainable goods movement, maximising intermodal freight solutions or demonstrating an integrated system approach to the movement of goods.
- 6.18 It is suggested that the funding opportunities available through the Technology Strategy Board be monitored.
- 6.19 Based on findings from the funding search it appears unlikely that funding from any of the identified sources would be forthcoming. This places a greater emphasis on securing funding through the air quality grant scheme and therefore ensuring any proposed trial consolidation scheme for Perth has been thoroughly investigated and is deemed worthwhile.

Business Improvement District

- 6.20 Business Improvement Districts (BIDs) are defined where an agreement is reached among the businesses in a defined area, often a town centre of a specific commercial centre to invest collectively in local improvements that would be of collective benefit to the business community. Agreement to set up a BID is determined by a one business, one vote referendum, which requires a majority in the numerical votes cast and the rateable value of votes cast.
- 6.21 The investments are then funded from a pot of money that comes from a compulsory levy on the businesses once the BID is established. The nature of the projects funded by BIDs is such that they are of generally agreed benefit to the business community.
- 6.22 As such, the cost of implementing a freight consolidation centre could in theory be covered in part or in full by a BID if there was general agreement from the business community. However, to date the level of engagement with the business community has given no indication that they would vote in favour of this.
- 6.23 At present there is not a BID established in Perth (see <http://www.bids-scotland.com/>).

7 Conclusions and Next Steps

- 7.1 Based on the findings of the Tactran freight consolidation trial study it is apparent that further preparation work is required before a trial scheme can be implemented. The trial study was successful in a number of key areas although, as described below, certain barriers need to be overcome.
- 7.2 Further information was provided to retailers through information notes and presentations helping to raise awareness of key issues. However, further more detailed liaison is needed with the identified target retailers and their associated supply chain to ensure any issues are fully understood, any doubts they may have are overcome and their willingness to participate in a voluntary trial scheme is identified. This is anticipated to require significant work in terms of contacting and undertaking discussions with identified retailers with regard to existing delivery arrangements and how their supply chain could be integrated into the FCC trial operation.
- 7.3 Potential scheme operators were identified and site visits and discussions were held with Kuehne & Nagel, Clipper Logistics and DHL to understand their approach towards running a trial consolidation scheme, what the operating structure might look like and what the associated operating costs might be. The information received raised both positive and negative issues. There is an eagerness and sufficient capability amongst the operators to operate a trial scheme, but barriers have been identified in terms of locating a suitable local property solution to operate the scheme from and also the ability to provide an electric vehicle for the whole of the trial scheme period. Therefore further work is required to explore property options in the Perth locality and also options for ensuring the use of electric vehicles for the duration of the trial.
- 7.4 Procurement issues and the implications of a longer term scheme were also considered, identifying the need to develop a medium term business plan for any post trial phase of the scheme. This was linked to the requirements of the procurement procedure and the need to establish what a longer term scheme might look like before progressing towards implementing a trial.
- 7.5 Key performance indicators for the trial scheme and an accompanying monitoring regime have been developed aligned to the over arching and Transport Planning Objectives. These would remain in place and be reviewed as required in the next stage of the implementation process.
- 7.6 A number of complementary measures were also identified. The term complementary was used to describe the measures as they could both support a trial freight consolidation scheme or be adopted as part of an on-going longer term scheme, and in some cases could also contribute to addressing wider local air quality management objectives in their own right. The measures ranged from a simplified Low Emission Zone based on the use of electric vehicles through to considering reduced business rates for retailers participating in a consolidation scheme. It was stressed that the FCC and the complementary measures should be seen as being part of a wider initiative and package of measures aimed at tackling air quality and improving distribution efficiency in the region.
- 7.7 Funding opportunities were investigated to identify any potential sources of funding that could be used to help with setup and running costs of both a trial scheme and a longer term scheme. Based on findings from the funding search it appears unlikely that funding from any of the identified sources would be forthcoming in the short term.
- 7.8 An Action Plan has been produced. Seven actions are shown in Table 13 that would need to be undertaken in the next financial year 2011/12 to move towards implementing a trial scheme in 2012. Based on the successful completion of the Actions 1-5 a tendering process for the trial scheme would begin in September 2011 with a view to a trial scheme starting in 2012. An

approximate schedule for implementation is also shown in Table 13. This would be reviewed as part of the next stage of process.

Table 13 Tactran Freight Consolidation Centre Trial Action Plan

Action No.	Action	Requirements	Responsibility	Timescale Short/ Medium/ Long¹	Budget
1.	Comprehensive investigation into potential property solutions in Perth for running a trial scheme.	Liaise with PKC property department, property agents, and local logistics operators and national scheme operators to identify suitable properties.	PKC, JMP/TTR	Short	£6k
2.	Review of electric vehicle options – procuring and leasing.	Liaise with PKC fleet management, operators and vehicle leasing companies. Identify preferred electric vehicle option.	PKC, JMP/TTR	Short	£4k
3.	Develop comprehensive implementation schedule and risk register.	Develop implementation schedule from tendering to operation with timings and associated risk.	Tactran, PKC, JMP/TTR	Medium	£3k
4.	Develop on-going marketing and retailer recruitment strategy to maintain scheme momentum.	Initiate contact with identified retailers and their supply chain. Establish willingness to participate in trial scheme.	JMP/TTR	Medium/Long	£7k
5.	Produce a three year business plan for an on-going consolidation scheme based on cost and revenue projections and therefore subsidy requirement.	Utilise operator fee estimates and charging structure data to produce business plan.	Tactran, PKC, JMP/TTR	Medium	£4k
6.	Produce a brief for tendering the consolidation service.	Develop brief based on outcomes of Tasks 1-5.	Tactran, PKC, JMP/TTR	Medium/Long	£3k
7.	Undertake evaluation of received bids and work with operator during scheme set up phase.	Develop assessment criteria based on KPIs and TPOs. Carry out evaluation. Liaise with preferred operator to set up trial scheme.	Tactran, PKC, JMP/TTR	Long	£3k
TOTAL					£30k

¹Timescales: Short term is defined as 0-3 months, medium 3-6 months, long >6 month

Table 14 Tactran Freight Consolidation Centre Trial Implementation Schedule

Action No	Action	April	May	June	July	August	September	October	November	December	January	February	March	April
1	Comprehensive investigation in to potential property solutions in Perth for running a trial scheme.													
2	Review of electric vehicle options.													
3	Develop comprehensive implementation schedule and risk register.													
4	Develop on-going marketing and retailer recruitment strategy to maintain scheme momentum.													
5	Produce a three year business plan for an on-going consolidation scheme.													
6	Produce a brief for tendering the consolidation service.							OJEU Tendering Process						
7	Undertake evaluation of received bids and work with operator during scheme set up phase.													Trial begins

Appendix A

Appendix A Retailer Information Note

Perth Retail Freight Consolidation Centre

Retailer Information Note

As you may recall Tayside and Central Scotland Transport Partnership (TACTRAN) commissioned a feasibility study into setting up a retail freight consolidation scheme to improve the efficiency of freight distribution and help tackle known air quality issues in Perth. The study, supported by Perth and Kinross Council (PKC) and Perth City Centre Management (PCCM), was successfully completed and identified that a retail freight consolidation scheme could have a positive impact on air quality in Perth, through reductions in vehicle emissions, especially through the use of electric vehicles. A number of additional benefits to retailers were also identified.

The potential to trial a freight consolidation centre for Perth at a time in the future is now being considered. You may have attended one of the recent retailer presentations, which provided a range of information on the scheme. However if you were unable to attend one of the presentations then this information leaflet is designed to provide you with an update on key aspects of the scheme including what happens next.

The boxes below show some of the wide range of benefits a freight consolidation centre can provide to both retailers and their suppliers.

Retailers	Suppliers
<ul style="list-style-type: none"> • Reliable delivery times • Delivery direct to stockroom • Improved accuracy • Drip-fed deliveries • Off site stockroom facility • Goods delivered ready for the shop floor • Improved use of staff time • Increased sales turnover potential • Collection of waste/ packaging for recycling • Collection of returns and transfers • Monetary saving through re-organising deliveries 	<ul style="list-style-type: none"> • Avoid congested delivery destinations • Fuel savings • Deliver to convenient peripheral location • Deliver at convenient time • Avoid conflict in delivery bays • Avoid costly time delays • Make efficiency savings further up supply chain

Retailer Survey Results

- 191 retailers contacted;
- 96 retailers completed survey (thank you for your assistance);
- A range of questions were asked from type of goods sold and number of deliveries per week to who organises your deliveries and what problems are experienced.



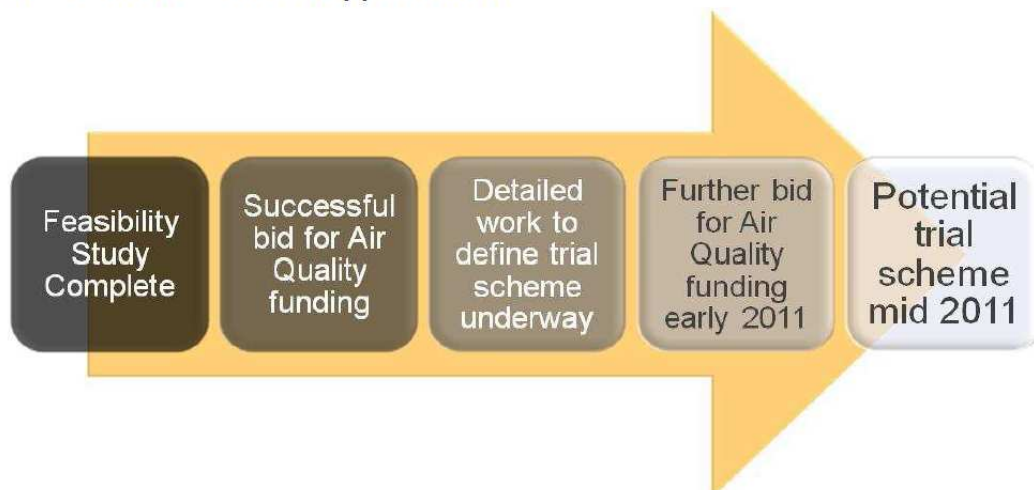
Retailer Issues and Problems Identified

- Delivery timing often controlled by suppliers or their contracted transport providers, retailers have little input;
- Delivery inaccuracies;
- Deliveries not arriving on time or not at a convenient time;
- Deliveries made through the front door not convenient;
- Stock left on shop floor rather than delivered to stock room;
- Staff time taken up dealing with deliveries;
- Delivery/loading bays can get congested;
- Delivery vehicles get blocked;
- Loading bays not always available;

Feasibility Study Outcomes

- Identified potential location for a consolidation centre;
- Potential to combine consolidation operation with existing local delivery operation;
- Number of logistics companies showed an interest in operating a scheme;
- Impact testing showed significant reduction in delivery vehicle trips was possible leading to:
 - Environmental/air quality benefits, especially if electric vehicle used;
 - Improved traffic circulation, less congestion;
 - Improved road safety;
 - Improved shopping environment.
- Potential to demonstrate and measure this through a trial scheme with voluntary participation by retailers.

Trial Scheme – What Happens Next?



For further information please contact either Gail Cain on 01738 475728 or Tim Hapgood on 0207 536 8074



Appendix B

Appendix B Perth Property Search

Perth Property Search

A brief on-site review of possible warehouse locations suitable to house a trial freight consolidation centre to serve Perth was conducted on 3rd February 2011. Clearly this is a snapshot of availability at that time and would need to be reviewed if and when PKC becomes ready to proceed to implementation. However, it can be considered as indicative of what facilities might be available at that time.

North Muirton

- More like a Trading Estate – Tyre and Battery services, Shower and Bathroom showrooms, VOSA test station, Car dealership etc;
- Does have a Hermes (parcel home collection and delivery service) depot;
- Has McLaughlan Transport (Perth) depot. Fridge operator (who services ABP meat plant on Inveralmond). Chilled storage facility, so not suitable to be considered as host site;
- No obvious 'partner' location;
- But a few potentially suitable units 'to let' as shown in the pictures.

Vacant Site 1 – Kilda Way



Vacant Site 2 – Kilda Road



Inveralmond Industrial Estate

- Majority are larger, more substantial and established premises than at North Muirton;
- Some units 'to let' but most (not all) were too small (see images), like 'start-up' units;
- There is one particular unit (currently PTS – Plumbing Trade Supplies, fully operational) but advertised as 'to let'. Has a Trade Counter (which could serve as office) and good own service access to rear. Roller shutter door was up when I was round the back and does have racking to decent height. Has a PKC 'Waste' office in the same unit with hard steel grill door across entrance (see images);
- There is a Tuffnells parcel depot on site and a dilapidated haulage yard. There is also the former, as of mid-March 2011, DHL site, plus a Stagecoach depot and a few other occupied premises;
- No obvious 'host' partner site at existing operations, but premises 'to let' might be worth consideration.

<p>Inveralmond Industrial Estate</p>	<p>Small business unit to let</p>
	
<p>Former DHL premises</p>	<p>PTS premises</p>
	

<p>PKC offices within PTS building</p> 	<p>PTS premises to let sign</p> 
<p>Vacant premises</p> 	<p>Tuffnells premises</p> 

Harbour and beyond

- Main harbour area doesn't contain suitable premises – mostly garage, repair and recovery services – no obviously suitable warehousing and distribution (chemical tanker yard exists but not suitable);
- There are bulk storage facilities but these wouldn't be appropriate as they're bulk sites for grain or aggregate or feed or similar;
- Calport might offer something but hard to see storage facilities types;
- Beyond the main harbour area towards the Council tip there are signs to say units are available (and the right size) but nothing obviously visible;
- Along shoreline (very poor quality road with PKC warning sign about condition and slow speed), there is a Viridor site and commercial units but, again, these don't appear appropriate due to their run down and make-shift nature. Half-way down the shore road (at Lower Friarton) there were small (likely too small) units available;
- Final image is of an available (small) unit at Nether Friarton (on road rising towards Council tip – not totally ideal for HGV access and egress, loading and unloading but a possibility).

Calport



Nether Friarton available unit

