



Thames Gateway FQP

Retail Sector Scoping Study

November 2008

Document history

Date	Version	Issued to	Quantity	Format	Approved
28/04/08	1	Client	1	PDF	NTG
30/11/08	1	Client	1	PDF	NTG

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1 Introduction

1.1 Overview

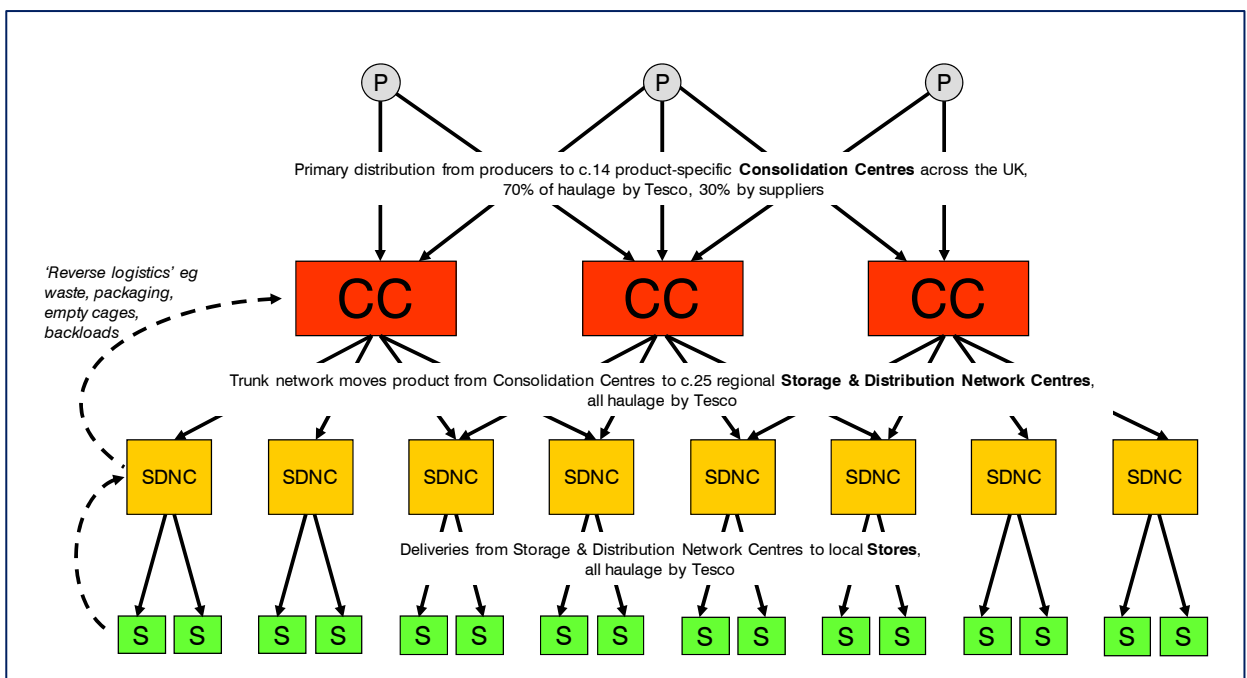
- 1.1.1 Residential and business areas require constant servicing, whether replenishing supermarket shelves, delivering post and parcels or online shopping, servicing lifts and office equipment, or waste collection and disposal. Keeping the local area supplied and serviced generates a vast range of vehicle movements every day, mainly by lorries and vans.
- 1.1.2 Making deliveries to business and residential areas can create conflicts with other road users, pedestrians and communities, and the London Freight Plan seeks to reduce such conflicts as far as possible.
- 1.1.3 TfL wishes to see greater co-ordination between Boroughs and business in this area, towards creating Delivery & Servicing Plans to minimise the operational impacts of delivery and servicing of premises, reducing congestion and emissions and improving safety.
- 1.1.4 As with the construction sector, there may be scope for consolidation centres (as piloted at Heathrow, Bristol and Sheffield), albeit that this function is often already provided by the network of pallet hubs, couriers and other local distribution facilities, where larger long-distance vehicles transfer a range of business and consumer goods into smaller vehicles for onward local delivery.
- 1.1.5 The FQP has therefore conducted research to identify means to further reduce the conflicts between retail deliveries and other road users, drawing on research undertaken by the South London FQP.
- 1.1.6 This initial scoping study has surveyed the major retail areas within the Thames Gateway to determine the existing delivery networks and how these might be further improved, for example by consolidating deliveries, using alternative modes of transport for longer-distance deliveries to and from the local area, alternative fuels for local delivery vehicles, and making more deliveries outside of the peak periods.

2 Experience with retail consolidation centres

2.1 Overview

- 2.1.1 Fifty years ago in the period following the Second World War, road and rail carried an equal share of the inland freight market, at around 35 billion tonne-kilometres each, compared to today where the equivalent figures are 1500 (excluding foreign-registered vehicles) and 22 respectively.
- 2.1.2 British Railways and private road hauliers operated the forerunners of the urban consolidation centre and pallet hubs, through town centre depots which acted as local collection and delivery points for a wide range of goods moved long-distance by road and rail. In some cases the depots had their own fleet of small local delivery vehicles which would serve companies in the surrounding area, alternatively some companies and individuals would visit the depots with their own vehicles to pick up or drop off goods.
- 2.1.3 Most of the railway-owned depots had closed by the 1970's, and the intervening years have seen much of the former state-owned distribution infrastructure largely dismantled and/or privatised, with the exception of the Royal Mail.
- 2.1.4 In contrast, the development of supermarkets and shopping centres have tended to be accompanied by dedicated delivery facilities, fed by regional, national and international supply chains (see diagram below). Stores will typically be replenished between the close of business in the evening and the start of business in the morning, in some cases with additional deliveries during the day, particularly at seasonal peaks during Easter, Summer or Christmas. The retailers and their logistics providers will seek to optimise volumes on each leg of the supply chain into full-load movements, to minimise mileage and vehicle fleet size.

Figure 1 Tesco supply chain structure



2.1.5 The remaining group of 'on street' business premises will either have rear service roads / yards or require deliveries to be made 'over the pavement' from vehicles parked on the main road. Surveys undertaken for the Bexleyheath FQP, for a range of small / medium sized companies in a high street environment with little or no rear access, show the range of goods vehicle types, with the emphasis on smaller rigid goods vehicles and vans making relatively quick 'multi-drop' deliveries. More than 80% of these deliveries were made between 9am and 4pm, to align with store opening hours.

Table 1 Deliveries to the Broadway high street area, Bexleyheath (source Bexleyheath FQP)

Delivery vehicle type	% of deliveries made	Average vehicle dwell time per delivery (minutes)
Articulated	10%	30
Rigid	38%	21
Van	45%	15
Car	7%	16

2.1.6 The range of products stocked by stores has increased considerably, from a few thousand product lines for the supermarkets initially up to more than 40,000 in a typical store today. Yet whilst the range of products sold on the high street may have increased considerably, so too have been the efforts made to reduce levels of stockholding at the stores themselves, through the concept of 'just in time' logistics. These 'lean' supply chains use sophisticated sales order processing and forecasting systems to minimise levels of stocks held at the stores, in part to reduce the costs associated with holding stocks (including discounting overstocked items), and to minimise the floorspace required for 'back of store' as opposed to 'shop floor'.

2.1.7 The problem is that this increasingly complex and finely-balanced supply chain is challenged by growing traffic levels in urban areas, compounded by delivery curfews and loading / parking restrictions, which then further limit the 'windows' for making deliveries.

2.1.8 In summary, the issues that any new form of urban distribution network will need to address include:

- Overall objectives of reducing the financial / environmental costs of delivering into urban areas, and reducing goods vehicle movements (and associated impacts) in urban areas;
- Minimising any additional handling / time / costs / risks introduced into the supply chain, particularly for perishable and high-value commodities;
- Avoiding any additional storage requirements at the store, and where possible reducing such facilities to increase shop floor space;
- Balancing potentially conflicting requirements of hauliers and residents regarding delivery times;
- Ensuring that any shared-user services or facilities are operated on a transparent and equitable basis to avoid any competitive advantage or conflicts;
- Seeking opportunities to align with other areas of public and private-sector interest, such as improving the vitality of town centres, or providing goods vehicle parking and driver rest facilities in and around urban areas.

2.2 Recent experience

2.2.1 A small number of consolidation centres already exist in the UK and mainland Europe, the UK examples being as follows

- Heathrow Airport Retail Consolidation Centre (see FQP Resource Sheet 5);
- Bristol Broadmead (see FQP Resource Sheet 5);
- Sheffield Meadowhall (see FQP Resource Sheet 5);
- Norwich – a new scheme being developed between the County Council and a local distribution company.

2.2.2 The experience of these projects and associated studies has been reviewed in a study undertaken by the South London FQP¹, the key findings being:

- There is strong interest in the potential of urban freight consolidation among many stakeholders involved with fulfilling, regulating and receiving urban freight deliveries. There continues to be support at a strategic/policy level for the concept;
- Progress has been made in establishing the business case for specific businesses as part of this study, particularly in respect of small multi-drop deliveries that are currently made from remotely situated national distribution centres. This is typical of the profile of many mid-tier high street retailers;
- The business case still needs further work to incorporate the potential savings that could result from changes in working practices at store level, which appear to be considered separately from distribution costs in many businesses;
- The distribution practices of the largest businesses that are able to provide full single drop loads to their stores or have sufficient drop density to deliver full vehicle loads to stores within a very close geographic area do not appear to offer benefit from consolidation at this stage. However, where direct deliveries are made to such outlets from specific suppliers that do not pass through in-house distribution centres then these may benefit from urban consolidation centres;
- Although the business case will be a key factor in businesses deciding to use an urban consolidation centre as part of their supply chains, another significant factor will focus around psychological and institutional barriers – in other words there will be an element of resistance to change which would need to be overcome gradually by working with early adopters to prove the concept, develop the business case, show that the consolidation centre can, at minimum replicate, if not better, existing relationships at the point of delivery and develop integrated systems that allow track and trace to current service levels;
- Some manufacturers / wholesale suppliers have incorporated logistics operations into their core business model (for example catering suppliers) and view consolidation centres as a threat to this business model because it could lead to a reduction of their margins which include an element built into the transport aspect of their business offer;
- The ongoing national interest suggests that some form of nationally-led open access, transparent experiment to establish the full business case would be beneficial;

¹ <http://www.southlondonfqp.com/New%20Folder/SLFCC%20Feasibility%20Report%20v31.pdf>

- The location and development of arrangements for urban freight consolidation centres will require case by case consideration to ensure that locations are logical in terms of intercepting goods on or close to their existing routes so offering optimum routeing solutions. Where possible consolidation centres should provide opportunities to link in with alternative modes to offer maximum possibility of full supply chain efficiency;
- In this context stores in locations where constraints on deliveries are most severe will probably benefit most from the use of urban freight consolidation centres;
- Because there are already several private sector delivery systems that could effectively deliver a freight consolidation centre service within their existing operations this route appears to offer the bonus of minimising set-up costs and not further duplicating existing urban delivery movements;
- It will take time to establish the market and develop a customer base of participants;
- To bridge the operational cost gap associated with setting up a new operating centre and urban distribution network continental applications freight consolidation centres have required significant public funding. Forming links with existing private sector operations will hopefully result in a financial structure that is less demanding on public support.

2.2.3 The South London FQP study made a number of recommendations, including:

- The approach of working in partnership with an existing provider of urban freight transport services is that already being trialled to serve Norwich, and so we recommend that links with that trial and the lessons learned, both positive and negative, are continued to help inform the future development of freight consolidation;
- As future changes in the restrictions on the movement of goods vehicles within urban areas occur, their impact on freight distribution operational patterns should be monitored to establish if they make uptake of urban freight consolidation more likely through changes in the cost balance between current and alternative practices (i.e. urban freight consolidation). The degree to which restrictions could or should be introduced to improve efficiency will be a matter for ongoing debate for the public authorities and it could be worth TfL / GLA considering regulations such as those used in Copenhagen where only vehicles with a fulfilment of 60% can deliver the city;
- Whilst working on this feasibility study it has become clear that interest in freight consolidation is inextricably linked to other ways that businesses and operators are investigating to avoid operating within the heavy congestion that typifies London's road network by day. This linkage particularly relates to night-time deliveries and efforts to exploit this type of synergy should be made wherever possible;
- A nationally-led open book and open access (publicly funded) trial where the operational costs are entirely visible to all potentially interested parties so that the detailed financial aspects of operation can be clearly ascertained.

3 Current issues with retail deliveries in the Thames Gateway

3.1 Retail store deliveries

3.1.1 Using online mapping and business directories, a database was developed, covering a selection of shopping areas in the Thames Gateway. From this, a sample of 600 shops in these shopping areas was surveyed for Intermodality by FTA Consulting during April 2008. The survey achieved 150 completed responses (a good response rate of 1 in 3) to the following questions:

- Company details / contact information;
- Q1 Store size;
- Q2 Number of staff at store;
- Q3 Annual turnover of store;
- Q4 Origin for deliveries;
- Q5 Any problems with delivery vehicle parking;
- Q6 Form of delivery;
- Q7 Delivery times;
- Q8 Type of delivery vehicle;
- Q9 Size of typical delivery;
- Q10 Number of companies making deliveries to store;
- Q11 Names of delivery companies (if not made in-house);
- Q12 Method for returning goods;
- Q13 Advantages of current delivery system;
- Q14 Areas where delivery system could be improved;
- Q15 Interest in receiving information on FQP.

3.1.2 The breakdown of the survey by area is shown in the Table below:

Distribution

Table 2 Breakdown of sample by store postcode

Postcode		Respondents	% of sample
DA1 1DN	(Dartford, High Street)	3	2%
DA6 7JN	(Bexleyheath, Broadway)	6	4%
DA9 9ST	(Bluewater)	43	29%
E15 1NG	(Broadway)	25	17%
E17 7JR	(Selbourne Walk)	4	3%
IG1 1RS	(Ilford, The Exchange)	5	3%
IG11 8DQ	(Barking, Ripple Road)	9	6%
RM1 1AU	(Romford, Waterloo Road)	5	3%
RM1 3EE	(Romford, Mercury Gardens)	1	1%
RM1 3RL	(Romford, Liberty Shopping Centre)	25	17%
SE13 7HB	(Lewisham, Shopping Centre)	24	16%
Total		150	100%

Store size

3.1.3 In terms of the size of each store (as expressed in staff numbers), of the 125 retailers which responded (83% of the sample), the stores employed between 2 and 125 staff, with a total sample of 1966 staff and an average size of 14.

Originating points for deliveries

3.1.4 The sample contained a spread of destinations, which have been grouped by region in the Table below. As can be seen, the majority of deliveries originate either within the Greater South East (London, the South East and the adjoining Home Counties in the East of England area) or in the Midlands:

Table 3 Breakdown of sample by delivery origin

Area	Respondents	% of sample
Greater South East	48	32%
Midlands	26	17%
East of England	4	3%
North West	7	5%
Yorkshire & Humberside	7.5	5%
North East	0	0%
South West	1	1%
Wales	2	1%
Scotland	1.5	1%
Various UK	28	19%
Other EU	5	3%
Unknown / undisclosed	20	13%
Total	150	100%

Delivery times

3.1.5 The Table below shows the typical delivery times made to stores, with the majority made before 9am:

Table 4 Breakdown of sample by time of delivery

Time	Respondents	% of sample
Morning (0500-0900)	48	32%
Mid Morning (0901-1200)	45	30%
Mid Afternoon (1201-1500)	13	9%
Late Afternoon (1601-1800)	4	3%
Evening (1801-2100)	0	0%
Night (2101-0459)	9	6%
Various daytime	24	16%
Various any time	8	5%
Total	150	100%

Parking problems

3.1.6 91% of the sample responded that there were no problems with parking for delivery vehicles, the remaining 9% cited issues including problems parking on market days, 'illegal' parking and/or congestion at loading bays, parking restrictions and pedestrianisation.

Delivery vehicles

3.1.7 The Table below shows the relative shares between the different types of delivery vehicle:

Table 5 Breakdown of sample by delivery vehicle type

Delivery vehicle type	Respondents	% of sample
Articulated	59	39%
Rigid	44	29%
Van	39	26%
Other / Various / Unknown	8	5%
Total	150	100%

3.1.8 As might be expected, the data shows a relationship between the size of the store (in average staff numbers) and the size of delivery vehicle, as shown in the table below:

Table 6 Breakdown of sample, delivery vehicle size against average store size

Delivery vehicle size	Average store size (staff)
Articulated	18
Rigid	13
Van	9

Delivery companies

3.1.9 The survey indicates that around 90% of the sample is supplied by only 1 delivery company:

Table 7 Breakdown of sample by number of delivery companies per store

Delivery companies serving each store	Respondents	% of sample
1	136	91%
2-4	7	5%
5-10	3	2%
>10	3	2%
Various	1	1%
Total	150	100%

Return deliveries

3.1.10 Again, the survey indicates that more than 90% of stores use the same delivery company(s) to collect returned goods:

Table 8 Breakdown of sample by return load arrangements

Means for returning goods	Respondents	% of sample
By same delivery company	137	91%
By post or third-party courier	10	7%
By waste disposal	2	1%
Unknown	1	1%
Total	150	100%

Problems with current delivery methods

3.1.11 It is important to note at this point that the majority of respondents (81%) did not express any concerns about the current delivery arrangements. Strengths of the existing arrangements as cited by respondents include (note some respondents cite more than one strength):

Table 9 Strengths of existing delivery arrangements (by those expressing satisfaction)

Strengths	Respondents	% of sample
Arrive early / before store opens	14	11%
Arrive before store closes	1	1%
Convenient / set delivery time	17	14%
Can deliver out of hours	10	8%
Only one company involved	4	3%
Accurate deliveries	9	7%
Efficient deliveries	27	22%
Responsive deliveries	15	12%
Reliable deliveries	24	20%

3.1.12 Of the remainder, the main problems cited relate to delivery times, where deliveries either arrive late or not at all.

Interest in FQP

3.1.13 61% of the sample expressed interest in receiving further information on the FQP, and copies of the next newsletter will be forwarded to these companies.

3.2 Home shopping deliveries

3.2.1 The British Retail Consortium reports that the e-retail market grew at its fastest pace for five years in 2006:

“Despite years of breakneck growth, there is no sign that the online boom is set to end. In 2006, online retail spending grew by 33.4% – almost 13 times faster than the retail sector overall – to a record £10.9bn. This pushed the sector’s share of total retail spending to 4.0%, a 0.9 percentage point jump on 2005. It also means that over £1 of every £3 of extra money spent by consumers at retailers in 2006 compared with 2005 was spent online. One in three adults is now an online shopper. In 2006 18.0m consumers bought retail goods over the Internet, a 23.1% increase on 2005 (excluding purchases of services such as travel and events tickets, and insurance). The online shopper population has been boosted by widespread uptake of broadband services whose costs have fallen markedly over the last two years. Also, retailers have begun to market their online services much more prominently and see online development as a key channel for future growth now that teething problems have been resolved.”

3.2.2 The implication of these trends will see increasing numbers of home deliveries and associated vehicle trips made into residential areas. Whilst some operators have tried to circumvent the problems of ‘no-show’ deliveries by trialling secure ‘drop box’ locations, it is apparent that most home shoppers will want the goods delivered to the doorstep at a convenient time, which for most working families will inevitably mean evenings and weekends.

3.2.3 The challenge, for both retail and home deliveries, is to achieve further savings in vehicle movements and associated energy consumption and emissions, where possible by consolidation of deliveries. In the next section, we consider what scope exists to use urban consolidation facilities as part of the solution.

4 Provision of retail delivery facilities in the Thames Gateway

4.1 Overview

4.1.1 From survey data and other reports gathered by the South London and Thames Gateway FQPs, it is possible to segment the market into key user groups within urban areas for whom different solutions may be appropriate, for example:

- **Transit traffic** eg users and/or their hauliers who are simply moving traffic through an urban area on the basis of this being the shortest / quickest route: use of traffic management measures (routing, signing, cordons) may assist in re-routing such flows if suitable routes are available around urban areas (eg M25, South Circular);
- **Full-load vehicles serving dedicated delivery facilities** eg distribution centre to supermarkets: whilst there would be little to be saved from routing such traffic through a consolidation centre, as the load is effectively already consolidated, other measures such as easing of delivery windows, use of alternative fuels and noise reduction kits, could help reduce the impact of such movements in urban areas;
- **Temperature-controlled traffic**: it is unlikely that retailers and the foodservice sector would be willing to break the 'chill chain' between distribution centres and food stores by double-handling product through an intermediate consolidation centre. The exception would be for a self-contained modular distribution system, as used by Ocado for Waitrose home deliveries, where each 'module' has its own independent temperature-control regime, such that individual or groups of modules could be moved across a consolidation centre without breaking the chill chain;
- **Part-load ambient traffic**: this is the key sector likely to be of most relevance to the consolidation centre concept, whether construction materials for a building site, or electronics into a high street store. Such traffic involves the sort of 'multi-drop' deliveries that could lend themselves to being consolidated before final delivery. As we shall see later in this report, much of this consolidation activity already occurs in practice through the existing distribution network.

4.2 Functional requirements

4.2.1 In simple terms, a consolidation centre must have a 'goods inwards' area, a consolidation and storage area, and a 'goods out' area. Depending on the scale and commercial / operational structure for the facility, this may be run by one operator on behalf of all users within its catchment area (eg Heathrow, Bristol, Meadowhall), or be home to a range of operators.

4.2.2 Reflecting modern supply chain practice, the consolidation centre will need to interface with a number of separate IT systems if required by each respective user, such that the facility becomes another 'node' on an existing supply chain through which goods can be tracked in real time.

4.2.3 Finally, it is likely that, as for other distribution facilities, the site would need to operate around the clock, 7 days a week, and have appropriate security measures in place.

Location

- 4.2.4 Ideally the consolidation centre should be placed along the 'line of route' for the existing supply chains to avoid generating any additional mileage to reach the site. A balance also needs to be struck between proximity to the M25 and to the final destination, for whilst the public might well prefer to see articulated HGVs kept outside of urban areas altogether (particularly the proposed longer HGVs), if this then results in a larger amount of trip mileage overall by smaller goods vehicles from the consolidation centre to the final destinations, the initiative could then be self-defeating.
- 4.2.5 Thus the site would ideally need to sit outside of but in proximity to the 'cordon' within which goods vehicle movements are to be reduced. The approach roads should be capable of enabling access by larger goods vehicles to and from the trunk road network, as well as enabling smaller local delivery vehicles to access the area within the cordon. The site itself should ideally be located within an area of established industrial or distribution activity, to avoid creating potential conflicts with planning policies.

Scale

- 4.2.6 The scale of the facility will be a function of the volume and spread of traffic processed by the facility each day. As a guide, a modern warehouse for general distribution may generate an average of 1 HGV arrival per day per 100m² of floorspace, but a consolidation centre is likely to see more intensive use by a range of HGVs and LGVs. Indeed, the capacity of access roads and the surrounding highway network may act as a constraint on the level of HGV traffic which can be accommodated and, hence, the size of the consolidation centre itself.
- 4.2.7 Information from the Broadmead (Bristol) and Heathrow Consolidation Centres provide some indicative parameters for the potential scale of consolidation centres; the Heathrow facility is housed in a 25,000 m² warehouse and serves 220 retail outlets, whilst at the other end of the scale the Broadmead facility is housed in a 6,500 m² warehouse and serves around 50 retail outlets. If these are typical of what might be expected from such facilities, then an average provision of 120 m² per retail outlet served (which in traffic terms would then equate to 1.2 HGV deliveries per day) provides a rule of thumb.

Vehicle access restrictions

- 4.2.8 The success of the consolidation centre will depend in part on the extent of over-arching controls on the surrounding road network, particularly within the cordon area itself. From an operator's perspective, the ideal would be to allow the site to be accessed at all times of the day and night, to avoid bunching of inbound vehicles delivering goods to site, and to enable the smaller fleet of local delivery vehicles access into the cordon as required. Use of electric / gas / low-noise local vehicles could help address any concerns regarding 24/7 access within the cordon.

4.3 Use of existing facilities / operators

- 4.3.1 The retailer survey information from both South London and Thames Gateway FQPs indicate a number of responses where 'courier' type firms make the deliveries to store. Indeed, there are a number of large national networks of courier / pallet distribution companies who operate 'hub and spoke' networks for anything from a parcel up to a pallet, and which have local depots in the FQP area, as a mixture of corporate and franchised operations. Examples are given in the Table overleaf.

4.3.2 A typical operating cycle is described by Palletways:

- 07.00: trunk vehicle arrives at local depot after picking up goods from the central hub;
- 08.30: local vehicles are loaded and commence distribution of goods to final destination;
- 14.00 - 18.00: local vehicles collect goods from local customers, return to depot for consolidation and despatch in trunk vehicle to hub;
- 21.30: first trunk vehicles arrive at the hub, where goods are processed for despatch;
- 04.00: last trunk vehicles depart from the hub bound for local depots.

4.3.3 A local depot will tend to consist of a large covered area accessible by goods vehicles and fork lift trucks. Here individual loads (anything from a quarter pallet up to multiple pallets) will be consolidated into full pallets for onward trunking to the central hub, with the process working in reverse for inbound trunk loads being deconsolidated into local deliveries.

Table 10 UK parcel / pallet networks

Network	UK depots
APC (Alternative Parcel Company)	125
DHL Express	140
Fortec (part of Geodis)	60
Lynx Express (part of UPS)	36
Nightfreight	55
Pallet Track	55
Palletforce	83
Palletline	60
Palletways	100+
Pallex	97
Parcelforce	100
TNT	70
TPN (The Pallet Network)	95

4.3.4 Around 35 local depots can be found in and around the Thames Gateway FQP area with each Borough being covered by 11 depots amongst the above pallet networks.

4.3.5 In terms of the size of each facility, a sample of sites analysed show a range of building sizes from as little as 100 m² for a small pallet depot up to 12,000 m² for a larger sub-regional hub such. Such facilities could provide the same scale of floorspace as that required for serving retail centres, subject to other existing business requirements at these depots.

4.4 Use of alternative modes

- 4.4.1 One option would be to return full-circle to having rail-linked urban consolidation centres, with rail used for the long-distance 'trunk' element and road used for local collection and delivery work. Indeed, Government policy is supportive of a network of 3-4 'strategic' rail freight interchanges around the M25 (eg Howbury Park in LB Bexley) as well as 'satellite' facilities within London (sites such as Barking and Cricklewood have been suggested). In Paris, retailer Monoprix is itself now delivering goods into the City by rail, for onward delivery in a fleet of LPG-powered goods vehicles.
- 4.4.2 We are currently working with a major retailer to assess options for undertaking store deliveries into London from outside the M25 by rail, either delivering direct to stores on major London termini, and/or using alternative-fuelled vehicles to make local deliveries within Central London. Whilst an initial study of a route from Hertfordshire to Euston by rail (25 miles) with onward road delivery by road proved significantly more expensive than road, we are now working up a further option to move traffic by rail from Shepway District into stores on a number of major South London termini, where at present the economics on the longer route (50 miles by rail) look more competitive with road. Further information will be made available to the FQP in due course.
- 4.4.3 In addition, some of the existing pallet depots serving the FQP area from sites in Vauxhall and Belvedere are in proximity to the River Thames, which might also offer some limited potential to use the river as part of the supply chain. One retailer has recently undertaken trials from East London into the Fulham area using the River Thames, and we are currently developing a river trial for the ongoing FQP work programme with the Port of London Authority.

5 Conclusions and recommendations

5.1 Conclusions

5.1.1 The immediate point to note at this stage is that a considerable volume of research has already been carried out into consolidation of deliveries in urban areas. Whilst pilot projects such as Heathrow and Bristol indicate the scale of potential benefits which can be achieved through interventions into the supply chain, it is apparent that without either 'carrots' (ie subsidies) or 'sticks' (ie restrictions on direct deliveries by road), the benefits of making such interventions are unlikely to be generated or sustained.

5.1.2 The survey undertaken for this study has indicated that, despite the over-arching concerns about growing traffic volumes, congestion, fuel prices and climate change, the majority (81%) of store managers surveyed are happy with their existing delivery arrangements and as such are unlikely to desire any new interventions at this stage which might impact on either the timing or cost of these deliveries. That said, the remaining one-fifth of the sample are not satisfied with current arrangements, with the main concerns being late or non-deliveries, with one respondent noting that deliveries 'are getting later and later'.

5.1.3 Across the sample, whether respondents were satisfied or not with the current delivery arrangements, key strengths (or aspirations) are seen to include:

- Early morning and/or out-of-hours deliveries;
- Set delivery times which are then adhered to;
- Deliveries made by a single operator;
- A fast, efficient and reliable delivery service.

5.1.4 In summary therefore, the most pragmatic solution for the retailers would appear to be to have more deliveries made at set times by a single delivery vehicle / operator in the early morning or out-of-hours. This would not necessarily need a consolidation centre to achieve this, as the same result could be achieved by relaxing night-time and early morning delivery restrictions, as part of a package to limit such deliveries to a suitable quota of vehicles in any one area during these periods, with vehicles fitted with 'hush' kits or alternative power sources, and with shielding of delivery areas to further limit noise.

5.1.5 If such measures proved impracticable for delivery companies, for example where it would prove difficult to achieve the deliveries into retail areas (or indeed to residential streets for home deliveries) within the allotted time windows or delivery quotas, two alternative options could then be considered:

- **Development of urban consolidation centre(s)**, building on the existing network of local pallet hubs and parcel depots wherever possible, such that long-distance deliveries in larger vehicles could be made at other times of the day and night into sites further from residential areas, from where local deliveries could then be made into retail areas by smaller, quieter, alternative-fuelled vehicles, perhaps on a franchised basis. Using existing facilities would then avoid creating significant additional costs in the supply chain, albeit that in some cases use of traffic regulation measures would effectively create a *fait accompli* for companies to adapt their supply chains to use these local delivery centres;

- **Development of urban multi-modal transshipment centre(s)**, effectively an interchange with or without consolidation facilities on site, such that deliveries could be made by barge or train into central areas, for transshipment into small, quiet, alternative-fuelled goods vehicles to make the final delivery to stores or homes. The stand-alone viability of such projects would depend on the relative lengths of haul by each mode and the costs of developing and operating the transshipment centres, and it is likely that start-up funding (and/or tighter regulation on road-only deliveries into these areas) would be required either initially or on an ongoing basis.

5.2 Recommendations

5.2.1 Our initial recommendations for the forward work programme for the FQP are as follows:

- Monitor progress with existing urban consolidation centre studies and trials in other parts of London, the UK and mainland Europe, to identify potential 'breakthrough' projects and success factors which would warrant development of a pilot project within the FQP area;
- Monitor progress (and engage with) the current retailer pilot project to create an intermodal urban delivery service from Kent into South London termini;
- Monitor progress with development of ProLogis' strategic rail freight interchange at Erith (Howbury Park), which may also offer opportunities to develop urban delivery services by rail;
- Develop a river-based intermodal urban delivery pilot trial from the M25 area into Central London, working with the Port of London Authority and other key stakeholders.