



# **A framework for considering policies to encourage sustainable urban freight traffic and goods/service flows**

## **Report 3: Making urban goods and service operations more sustainable: policy measures and company initiatives**

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The views expressed in the report are entirely those of the authors.

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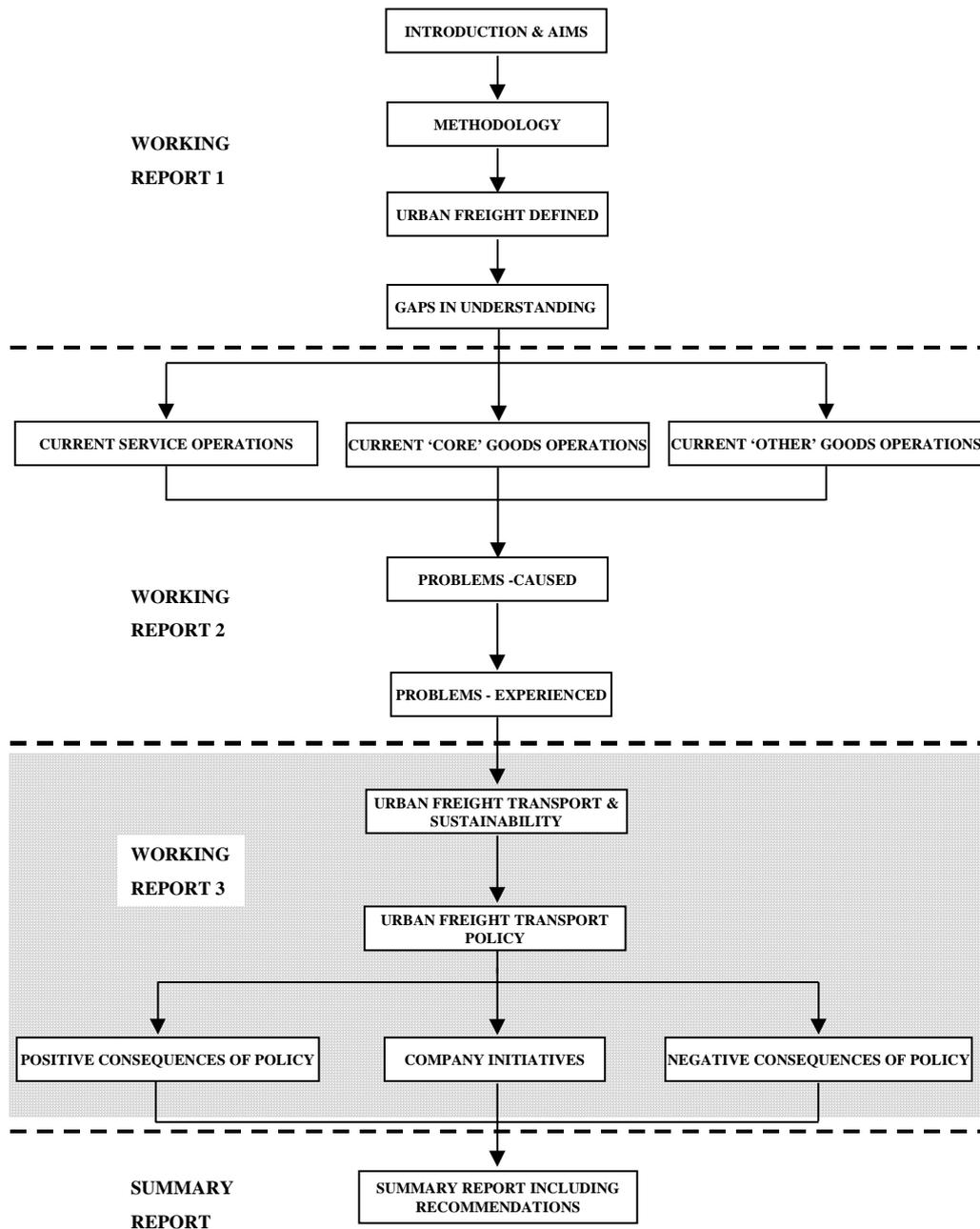
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## 1. Urban freight transport and sustainability

The research carried out during the project has been written up in three working reports, of which this is the third. Figure 1 shows how the complete set of reports is structured and the topics covered by each report.

**Figure 1: Layout of Working Reports**



This report covers the following aspects of the research:

- Urban freight transport and sustainability.
- Freight transport policy in urban areas.
- Policy measures that help and hinder goods and service transport in urban areas.
- Company initiatives to improve urban freight transport.

## 1.1 The concept of sustainability

The concept of “sustainability” and “sustainable development” has become increasingly influential in policy considerations in recent years. The most widely accepted definition of sustainable development is, “development that meets the needs of the present without compromising the needs of future generations to meet their own needs” (World Commission on Environment and Development, 1987). This was the definition used by the Brundtland Commission and then endorsed by the United Nations at the Earth Summit in Rio in 1992. This conference led to a focus on the policy action required to bring about sustainability, known as Agenda 21, which, whilst having no force in international law, has been adopted by many national governments (Mazza and Rydin, 1997). In the UK, as a result, many local authorities have been preparing environmental strategies.

## 1.2 Developing a sustainability strategy

The first step in moving towards a more sustainable system involves deciding on the geographical scale over which sustainability will be considered (i.e. global, international, national, regional or local) and the identification of existing economic, environmental and social impacts within this defined area.

It is then necessary to establish target levels by which it is intended to reduce these impacts - if this is to be rigorous it requires statistical evidence of a link between two variables. For instance, it is necessary to demonstrate that a link exists between say, nitrous oxide emissions and public health. The target level should then be based on scientific research (e.g. establishing what constitutes a safe level for these emissions). This step is proving difficult as it requires a thorough knowledge of the level of existing impact (e.g. the current level of pollutant emissions - which will be dependent upon a number of factors) and the relationship between the impact and its harmful consequences. In the case of many impacts, their short and long term consequences are not yet well understood.

These problems make it difficult to establish which impacts should be addressed and what would constitute an appropriate reduction target. If suitable targets can be established, then the next stage requires actions to be devised that will reduce the current level of impacts to the target level. Given that most impacts emanate from several or many different activities it is necessary to consider the contribution of each of these activities to the impact and decide whether actions should aim to reduce the level of impact caused by each activity by the same proportion, or whether the impact of certain activities should be reduced more than others. This could be influenced either because of the proportion of the overall impact that the activity is responsible for, or because it is easier to reduce the impact emanating from one activity compared with another activity.

Once it has been decided which activities are to be subject to actions it is necessary to formulate appropriate measures (e.g. bans, restrictions, fiscal approach etc.), and to determine how stringent these measures need to be to achieve its required target (e.g. the level of the tax, the extent of the restriction, the duration of the ban etc). We are currently at a stage where even if the level and importance of an impact is well understood, the measures needed to bring about actions that will result in specific reductions in the level of impacts are not so clear. For example, in the case of road traffic accidents, their number, location and severity are well understood. However, the measures needed to bring about a change in driver behaviour so as to reduce accident levels by a specified amount remains uncertain. In addition, any new measures that are introduced may well result in other changes in behaviour in addition to the desired one, thereby altering the intensity of other impacts.

The third stage requires resolution of conflict between objectives. These could involve a conflict between impacts (i.e. reducing one impact may increase another). It could also involve a conflict between economic and environmental objectives, or social and environmental objectives. In the case of freight transport, for example, it is essential to the economic functioning and life of the city, but is also responsible for a number of environmental impacts that threaten the city’s environmental sustainability.

Not surprisingly it is extremely difficult to achieve a workable, acceptable set of targets, actions and measures that will result in more sustainable cities, and a more sustainable urban freight transport system within these cities.

### 1.3 Sustainable urban freight transport

The aim of a sustainable transport strategy is, “to answer, as far as possible, how society intends to provide the means of opportunity to meet economic, environmental and social needs efficiently and equitably, while minimising avoidable or unnecessary adverse impacts and their associated costs, over relevant space and time scales” (UK Round Table on Sustainable Development, 1996).

Existing freight and passenger transport systems in urban areas create a variety of economic, environmental and social impacts. These include (UK Round Table on Sustainable Development, 1996):

- **Economic impacts:** (i) congestion, (ii) inefficiency and (iii) resource waste.
- **Environmental impacts:** (i) pollutant emissions including the primary greenhouse gas carbon dioxide, (ii) the use of non-renewable fossil-fuel, land and aggregates, (iii) waste products such as tyres, oil and other materials and (iv) the loss of wildlife habitats and associated threat to wild species.
- **Social impacts:** (i) the physical consequences of pollutant emissions on public health (death, illness, hazards etc), (ii) the injuries and death resulting from traffic accidents, (iii) noise, (iv) visual intrusion, (v) the difficulty of making essential journeys without a car or suitable public transport, and (vi) other quality of life issues (including the loss of greenfield sites and open spaces in urban areas as a result of transport infrastructure developments).

### 1.4 Policies and initiatives for moving towards urban sustainability

Sustainability policies and initiatives can address economic, environmental and social objectives, some of which will meet only one of these objectives and others of which will meet more than one. There is also the possibility of conflict between objectives.

According to the UK Round Table on Sustainable Development: “there is no magic solution to the many problems caused by present land transport patterns and trends. But there is much that a co-ordinated, sustainable transport strategy can do to minimise current and anticipated future adverse impacts, and their associated costs, efficiently and equitably while continuing to deliver or improve on existing benefits.....The most efficient policy decisions, following sustainability criteria, are likely to be those that meet economic, environmental and social needs simultaneously; and so minimise trade-offs between objectives to reduce associated losses and costs. These are win-win-win options” (UK Round Table on Sustainable Development, 1996).

### 1.5 Urban freight element of urban sustainability

In considering how to make urban freight transport more sustainable the initial need is to:

- i. define what are the problems caused by urban freight transport that need to be addressed (e.g. is it pollutant emission, noise, fossil fuel use etc?);
- ii. examine which aspects of urban freight transport operations need to be changed to bring about a reduction in these environmental impacts (for example, is it the total number of trips, the location of trips, vehicle size, total vehicle kilometres performed etc.?);
- iii. consider the economic/operational efficiency impacts of changing the aspects of urban freight transport operations identified in (ii), in order to determine whether there are likely to be conflicts between environmental and economic goals and objectives.

Recognising the conflict that may exist between efficiency and environmental goals when considering the sustainability of urban freight transport is important. Many environmental and social policies aimed at freight transport are likely to have a cost. These policies can involve the internalisation of external, environmental costs and will therefore have an impact upon freight operating costs and efficiency and will have an effect (albeit small in most cases) upon the final cost of products. Where possible, measures that combine improvements in operational efficiency with reductions in environmental impact (such as improved load consolidation and reduced empty running) need to be identified and thought given to how best they could be achieved. Measures such as these have the advantage of being attractive to freight transport companies and industry as a whole (as they can result in lower transport costs), as well as to the wider urban community. Attempts to bring about improvements through such measures can be undertaken by industry, or by industry in conjunction with policy makers.

There is also a need to determine which of the adverse impacts of urban freight need to be reduced, by how much they need to be reduced, and how best to achieve these reductions (i.e. the required policies and measures). At present, there is not even consensus about the impacts that need to be addressed.

Urban freight transport activity results in a number of environmental and social impacts, some of which can be quantified, others which cannot. Urban freight vehicle movements can be improved so as to make them more sustainable in various ways. It is important to distinguish between two different groups who are capable of implementing changes to the urban freight system and the rationale for their doing so:

- ***Changes implemented by governing bodies.*** This occurs through the introduction of policy measures that force (or encourage in the case of new taxes) companies to change their actions and thereby become more environmentally or socially efficient (i.e. changing the way in which they undertake certain activities). In these cases there is unlikely to be any internal gain to the company from this adaptation in their behaviour and there may even be a reduction in economic efficiency. Strategies available include traffic management schemes, zoning of land use, infrastructure developments and improvements, licensing and regulations, road pricing, and terminals and transshipment centres (Ogden, 1992).
- ***Company-driven change.*** Companies (freight transport companies and/or their customers) tend to implement initiatives that will reduce the impact of their freight operations, because they will derive some internal benefit from this change in behaviour. This could occur because the company can achieve internal economic advantages from operating in a more environmentally or socially efficient manner, either through improved economic efficiency or through being able to enhance market share as a result of their environmental stance. Instances of company-led initiatives include increasing the vehicle load factor through the consolidation of urban freight, making deliveries before or after normal freight delivery hours, the use of routeing and scheduling software, improvements in the fuel efficiency of vehicles, in-cab communications systems, and improvements in collection and delivery systems (including materials handling technology, unitisation of loads and co-ordination between shipper, carrier and customer). As this list illustrates, some of these initiatives are technology-related, some are concerned with freight transport companies reorganising their operations and some involve change in the supply chain organisation.

Although, in several instances, efficiency in operations and reduced environmental impacts go together it must also be recognised that individual freight transport operators will not by themselves be able to achieve adequate system-wide improvements in urban freight efficiency. In some instances there may be a lack of concern about freight costs by the customers of the distribution companies, since these costs may be only a small proportion of total product cost. In other cases there may be a reluctant acceptance by the freight industry of current levels of congestion, as there is no competitive advantage to any one firm as a result of a lower congestion level. This implies that a combination of

company initiatives and government policy will be necessary in developing a sustainable urban freight system.

Given that the demand for freight transport is a derived demand, in order to consider how freight transport can be made more sustainable it is also necessary to understand the nature of commodity and goods flows. The driving forces behind these flows are factors such as the geographic location of activities, the costs of transport and related activities, land prices, customer tastes and required service levels and existing policies governing freight transport and land-use. Therefore in order to change freight transport patterns and reduce their impacts it is necessary to influence some of these factors that determine goods flows as well as simply focusing attention on goods vehicle movements.

An example in an urban area can be used to emphasise the points made above. Pollutant emissions from goods vehicles could be reduced by either improved engine design (to reduce emissions per unit of fuel consumed - this is a technological solution) or by reducing the total fuel consumed by urban road freight. The latter could be achieved in a number of ways:

- ***By reducing the number of road freight trips.*** This could be brought about by improving vehicle load factors, reducing empty running, greater use of computer routeing and scheduling software or modal shift. The first two of these measures are likely to prove attractive to companies as they should also result in lower operating costs.
- ***By reducing road freight trip distances.*** This approach could be developed by local or national government and implemented through land-use planning policies. Improved vehicle routeing may also shorten trip lengths.
- ***By improved lorry driving to enhance the fuel efficiency of the vehicle.*** Again, this could prove economically attractive to companies as it may result in lower operating costs.

Some measures are capable of reducing more than one impact. For instance, improvements in vehicle load factors through load consolidation would reduce the number of road freight trips as well as reducing the total fuel consumed by goods vehicles.

As previously mentioned, in addition to transport-related initiatives, a number of other non-transport policy measures would also reduce the impacts caused by freight transport by changing the level of demand for freight transport in urban areas. For instance, land-use policy measures can be used to control:

- the location of retail stores (for example whether they are in the high street or out-of-town);
- where new commercial and industrial premises are developed and whether sites have to incorporate specific features in order to be accepted (such as rail links, off-street parking facilities, served by existing public transport services);
- the location of new housing (e.g. will it be in the inner city, in the suburbs, or beyond the urban fringe, and will it be in a solely residential zone or part of a mixed development). Housing issues are relevant to freight transport as it could be argued that if we look at goods flows as systems, then household trips to and from shops represent freight transport movements, with goods being transported from retail stores to households.

There are also a number of potential passenger transport policy measures that would have an effect upon the operation and impact of freight transport services in urban areas. These include pedestrianisation, road pricing for car traffic, general parking policies, the introduction of bus lanes and traffic signals priority schemes for public transport services. It is therefore important when planning such measures that their effect on the efficiency of freight transport operations are considered.

Sustainable development strategies are likely to require national policies together with metropolitan and local authority and community-led approaches. A national sustainability strategy could help to

ensure that urban sustainability policies do not result in some urban locations becoming less economically attractive than others. At the urban level it will be necessary to find suitable measures for the town or city in question and these are likely to vary from one urban area to another.

## **1.6 Urban goods and service vehicle activities and their impacts**

The environmental and social impacts caused by urban goods and service vehicle operations can be categorised as follows:

- fossil fuel consumption,
- greenhouse gas emissions,
- air pollution,
- noise,
- visual intrusion,
- physical intimidation (of pedestrians and cyclists),
- road safety and accidents,
- road traffic congestion/disruption.

There are several different aspects of urban goods and service vehicle activities that cause these social and environmental impacts. These are:

- total number of goods and service vehicle trips,
- total number of goods and service vehicles operating,
- average trip length of goods/service vehicles,
- fossil fuel consumption rate of goods and service vehicles,
- size/weight of goods and service vehicles used,
- number of goods and service vehicles parked on-street at busy times,
- the period of time goods and service vehicles are parked on-street,
- location of goods and service vehicles operation (and number of trips on inappropriate routes),
- time of goods and service vehicle operations,
- speed at which goods and service vehicles are driven.

Table 1 shows the relationship between goods and service vehicle activity and social and environmental impacts caused by these vehicles (i.e. the impacts to which each of these activities contribute).

**Table 1: Relationship between goods and service vehicles/vehicle activity and environmental/social impacts**

	Goods and service vehicles/vehicle activity in urban areas									
<b>Goods and service vehicles contribution to impacts:</b>	Total vehicle trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation	Vehicle speed
Total fossil fuel consumed										
Air pollution										
Greenhouse gas emissions										
Noise										
Visual intrusion										
Physical intimidation of pedestrians/cyclists										
Road safety and traffic accidents										
Road traffic congestion										

## 1.7 Ways of reducing impacts of urban freight transport

By altering the activities of goods and service vehicles in urban areas it is possible to reduce the environmental and social impacts that they cause. As previously explained the activities that lead to these impacts are:

- **Total number of goods and service vehicle trips.** The number of goods vehicle trips depend on the: (i) the quantity of goods flowing in, out and within the urban area, (ii) the carrying capacity (in weight and volume) of the goods vehicles used to move those goods, (iii) the extent to which the vehicle's carrying capacity is used during a journey in terms of both weight and volume (usually measured in terms of vehicle load factor and empty running), which in turn depends on: (a) the time constraints placed on delivery and collection work by shippers, receivers and local authority restrictions, and (b) the quantity of goods that any one vehicle/freight transport operator is given to move, and (iv) the frequency which goods flow through the supply chain.

The frequency that goods flow through the supply chain depends on the ordering and stockholding policy of the premises receiving the goods.

The number of service vehicle trips depends on: (i) the agreed frequency with which the service provider has to visit the premises to carry out routine maintenance, and (ii) the extent to which problems are encountered at the premises that result in them needing to call out the service company.

- **Total number of goods and service vehicles operating.** The total number of goods vehicles operating in an urban area at any given time depends on all those factors that determine the total number of goods and service vehicle trips, plus the extent to which the vehicle is used productively during the course of a day (i.e. when vehicles are stationary this can result in the need for another vehicle to perform the trip - vehicles can be stationary due to: (i) through poor planning on the part of the operator, (ii) because it is involved in loading/unloading operations, (iii) it is being repaired/serviced, (iv) the driver is taking a compulsory rest break. Poor vehicle productivity can also result from vehicle time restrictions in urban areas which result in goods and service flows having to take place in narrow time windows - this results in the need for a greater number of vehicles to carry out this work in the given time window).
- **Average trip length.** The total distance travelled by goods and service vehicles in an urban area is a summation of the distance performed by each vehicle on each trip it performs. The average trip length (i.e. the average distance travelled by each vehicle on each trip) multiplied by the total number of trips also gives the total distance travelled.
- **Fossil fuel consumption rate per kilometre of goods and service vehicles.** This is the rate at which each of the goods and service vehicles operating in the urban area consume fossil fuel (per unit of distance travelled). The combustion of fossil fuels results in the emission of harmful pollutants in the urban atmosphere. Vehicles powered by non-fossil fuels, such as electricity, do not produce any harmful emissions at the point of use (emissions do obviously occur at the location where the electricity is generated if it is produced from fossil fuel).
- **Size/weight of goods and service vehicles used.** This depends on the fleet purchasing decisions of the company operating the vehicles.
- **Number of goods and service vehicles parked on-street at busy times.** Goods and service vehicles parked on-street during busy periods of the day cause traffic disruption and can be intimidating for pedestrians and cyclists. The number of such vehicles parked on-street at busy times depends on the times at which goods collections/deliveries and servicing work is carried out, and whether off-street parking facilities are available at the premises for these vehicles.
- **Period of time goods and service are parked on-street.** The period of time that goods and service vehicles are parked on-street depends on the time it takes to make the collection/delivery or the servicing work.

- ***Location of goods and service vehicles operation (and number of trips on inappropriate routes).***  
The precise location of goods and service vehicle activities determines where any local impacts they cause will occur. The location of vehicle activities depend on a number of factors including: (i) the location of premises served by the vehicles, (ii) the location of road infrastructure, and (iii) the existence of any bans/compulsory routes imposed on goods and service vehicles.

Some urban locations (such as residential areas) are worse affected than other locations by the same volume of the by goods and service vehicle traffic on roads that run through them. The extent to which a location is adversely affected by goods and service vehicle operations depends on: (i) the type of land use in the location, and (ii) the size and specification of the road on which the vehicles travel.

- ***Time of goods and service vehicle operations.*** The time at which goods and service vehicle activities take place in a particular urban location has a bearing on the impact of these activities as the numbers of people using that location vary during the course of a day. For instance, deliveries to a high street made at night cause far fewer impacts than the same deliveries made during the middle of the day, because of the number of other people using the high street at these times.
- ***Speed at which goods and service vehicles are driven.*** Achieving a reasonable average vehicle speed in the urban area is of importance to the productivity of freight transport and service companies' operations. However, vehicles driven at high speeds in urban areas are more likely to be involved in road accidents, and the severity of those accidents are also related to vehicle speed.

Once it has been decided which social or environmental impact is to be reduced it is then possible to think about which of the above activities need to be altered in order to bring about this impact reduction. These are considered in Sections 1.71 to 1.7.8. It is then possible to think about policy measures and company initiatives that could be used to bring about the required change in behaviour. These are considered in Chapters 2 to 5.

### **1.7.1 Reducing the total number of goods and service vehicle trips necessary**

#### **i. Improve vehicle load factor**

- reduction in number of carriers/vehicles operating in urban area
- reduction in number of wholesalers/suppliers operating own transport vehicles in urban area
- better scheduling by the transporter
- premises more flexible about vehicle arrival times
- fewer time restrictions of vehicle operation/loading
- use of other modes (rail, water, cycle, foot)

#### **ii. Reduce number of points of goods supply to premises in supply system through centralisation/better consolidation of goods for each premises**

- would require one or more of the following: (a) more premises to use wholesalers rather than buying goods direct from manufacturers, (b) more large companies setting up their own distribution centres, (c) more goods being sent by carriers via carriers' distribution/sortation centre, and (d) introduction of transshipment centre/s
- could also result in the use of larger vehicles for delivery to premises in option (i) and (ii) depending on quantity to be delivered to each premises and hence number of deliveries possible per round unless controlled

#### **iii. Reduce frequency of delivery to premises from each point of supply**

- would require premises to request orders less frequently (i.e. less rapid replenishment rates)
- may require greater stockholding space/quantity at premises
- would also be likely to result in use of larger vehicles
- may lead to better vehicle load factors as well

- some scope to improve ordering/forecasting patterns at some premises without greatly increased storage (e.g. hotel wanting single bottle of wine etc.)

### **1.7.2 Reducing total number of goods and service vehicles operating in the urban area**

Essentially the same as reducing the total number of goods and service vehicle trips in urban area plus better time utilisation of vehicles (i.e. less time spent stationary - loading/unloading, poor planning etc.)

### **1.7.3 Reducing total distance travelled by goods and service vehicles in the urban area**

To reduce total distance travelled it is necessary to either reduce: (i) the total number of necessary goods and service vehicle trips, or (ii) the average trip distance in the urban area.

For ways of reducing the total number of necessary trips see Section 1.7.1. Average trip distance in the urban area could be reduced in the following ways:

- improve quantity of road infrastructure/existence of outer orbital roads;
- remove existing lorry routes or restrictions on large goods vehicles that increase the distance it is necessary to travel (but these are usually in place for good reason);
- improve quantity and quality road signing;
- improve vehicle routing/scheduling (computerised or manual);
- relocate activities to edge of urban area/out of urban area (but: (i) conflicts with creating economically vital and viable urban areas, (ii) creates access problems when premises are shops and workplaces for those without cars, (iii) and creates additional car traffic by customers and employees if not near to residential locations).

### **1.7.4 Reducing fossil fuel consumption rate of goods and service vehicles**

Total fossil fuel used depends on:

- Total number of necessary trips in urban area - see above;
- Fossil fuel consumed on each trip which depends on:
  - total distance travelled by each vehicle in urban area - see above
  - fuel used by vehicle (fossil or non-fossil fuel)
  - size, power and engineering/technology of vehicle used

Measures and initiatives to encourage lower fuel consumption rates per unit of distance travelled include:

- operating restrictions on fossil fuel vehicles (either restrict by specific road/area or by time of day, or total ban);
- tax incentives for non-fossil fuel vehicles;
- exemption from road pricing for non-fossil fuel vehicles;
- reduce distance travelled by each vehicle in urban area;
- new or improved vehicle technology.

### **1.7.5 Reducing the size of goods vehicles used in urban area**

This can be achieved through restrictions on the permissible vehicle size or weight that can be operated on specific roads or within the entire urban area. However, this measure is likely to increase the total number of goods trips necessary, as smaller vehicles have smaller payloads.

### **1.7.6 Reducing goods and service vehicles parked on-street and their dwell time**

This problem is time and space related. It is possible to change: (i) where loading/parking happens and the space provided for it, or (ii) the time at which it happens, so that conflicts with other road traffic and pedestrians are reduced.

i. Space-related changes:

- more off-street loading/unloading facilities designed into building plans
- more off-street parking for service vehicles designed in
- more on-street designated loading bays
- introduce on-street designated service vehicle bays
- better enforcement of parking regulations to prevent illegal goods/service vehicle parking
- better enforcement of parking regulations to prevent illegal car parking on yellow lines and in loading bays

ii. Time-related changes:

- change times at which goods and service vehicles are delivering and working at premises to reduce impact on other road traffic and pedestrians (see below).

### **1.7.7 Changing the location of goods and service vehicles operation (and reducing vehicle operations on inappropriate/sensitive roads)**

The following policy measures can be used to alter the roads used by goods and service vehicles in the urban area:

- Land use policy measures (e.g. refuse planning permission for premises located on sensitive roads that generate large numbers of goods vehicle trips);
- Vehicle bans and restrictions (i.e. introduce bans on certain sized vehicles on specific roads or in specific sensitive areas);
- Vehicle routing schemes (i.e. introduce advisory or compulsory lorry routes to keep certain sized vehicles to specific routes);
- Permissible time of operations on specific roads in specific locations.

### **1.7.8 Changing the times of goods and service vehicle operations**

The following methods can be used to alter the times at which goods and service vehicles operate in urban areas:

- vehicle operating time bans on specific sensitive roads or in sensitive areas
- vehicle loading/parking time bans on specific sensitive roads or in sensitive areas
- time restrictions on vehicle operations at the premises as part of planning permission/operating licence (O-licence);
- premises accepting night/out of hours deliveries (staff on-site, keys for transporter, or secure drop point at premises);
- goods are delivered into transshipment/transfers point either operated by freight transport company or local authority located close to premises during night for delivery following morning/day.

## **1.8 Factors that have altered goods and service operations in urban areas**

A number of key factors have influenced the activity levels and patterns of goods and service vehicles operation in UK urban areas. These factors can be divided into the following categories:

- supply chain organisation and communication
- shipper/receiver requirements of product flow
- delivery facilities/systems at receiving premises
- customer requirements of service companies

- goods supplier arrangements
- management of goods/service vehicle operations
- vehicle manufacturers
- transport and other policy measures
- total demand for road space and behaviour of other road users

Table 2 shows our attempt to indicate how factors in each of these categories have affected the activity levels and patterns of goods and service vehicles in urban areas in the past ten years in the UK. These relationships are not always clear cut, and, in some cases, we believe that a particular factor could lead to an increase, decrease or no change in vehicle activity. This is indicated in the table where appropriate.

It is important to clarify the meaning of some of the column headings used in Table 2 (and which are also used in Tables 3, 4 and 5 - see section 1.7 for further details).

**“Total trips in the urban area”** refers to the total number of individual goods/service vehicle trips with either an origin, destination or both, in the urban area. For instance, a multi-drop delivery round on which a goods vehicle makes deliveries to 20 different premises comprises 20 vehicle trips.

**“Total vehicles in urban area”** refers to the total number of goods and service vehicles that operate within the urban area during the course of a day.

**“Average trip length”** refers to the average distance travelled on each trip performed by goods and service vehicles operating in the urban area.

**“Fossil fuel consumption rate/km”** refers to the rate of fossil fuel consumed by goods and service vehicles per unit of distance travelled in urban areas.

**“Number of vehicles parked on-street at busy times”** refers to the total number of goods/service vehicles parked on-street (while drivers make collections/deliveries and engineers carry out servicing at urban premises) during the daily traffic peaks.

**“Time spent parked or unloading on-street”** refers to the average period of time that goods and service vehicles are parked on-street while goods collections/deliveries and servicing work is carried out in urban areas.

**“Vehicles using inappropriate routes”** refers to the number of goods and service vehicle trips made on urban roads that are not appropriate for these vehicle trips (such as, for example, through trips made along residential roads).

**“Time of operations (inc. or dec. in out of hours work)”** refers to whether the proportion of goods and service vehicle trips in urban areas that take place outside the times at which traffic peaks occur are increasing or decreasing.

**“Vehicle speed”** refers to the average speed of the goods/service vehicle when making trips in the urban area.

**Table 2: Changes in logistics and distribution operations and regulations in last 10 years and consequent changes in urban freight vehicle activity**

	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
<b>Supply chain organisation and communication</b>										
1. Lack of communication between shipper, receiver and transporter in some cases	↑	○	↑	○	○	○	↑	○	○	○
2. Greater use of internally centralised distribution system	↓	↓	○	○	○	↓	○/↓	○	○/↑	○
3. Greater use of externally centralised distribution systems (express carriers)	↓	↑	○	○	↓/○/↑	○/↓	○	○	○	○
4. Increase in importance of multiple retailers	↓	↓	○	○	↑	○/↓	○/↓	○	↑	○
5. Increase in out-of-town retailing	↓	↓	↓	○/↑	↑	↓	↓	↓	○/↑	↑
6. Growth of home shopping/delivery service despatched from city premises	↑	↑	○/↑	○	○/↓	○/↑	↑	↑	○/↑	○
7. Growth of home shopping/delivery service despatched from outside city	↑	↑	↓	○	○/↓	○/↑	↑	↑	○/↑	○
<b>Shipper/receiver requirements of product flow</b>										
1. Increase in product range and variety available in shops	○/↑	○/↑	○	○	○/↑	○/↑	○	○	○	○
2. Reductions in order lead time due to increase in time sensitive of products/reduced stockholding	↑	↑	○	○	○/↓	↑	○/↓	○	○	○
3. Application of JIT manufacturing	↑	↑	○	○	↓	○/↑	○/↓	○	○	○

**Key:**    ↑ = Increase in vehicle activity pattern                      ↓ = Decrease in vehicle activity pattern                      ○ = No change in vehicle activity pattern

**Table 2: Changes in logistics and distribution operations and regulations in last 10 years and consequent changes in urban freight vehicle activity (Continued)**

	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
<b>Delivery facilities/systems at receiving premises</b>										
1. Increase in demand for timed vehicle booking-in system	○	○/↑	○	○	○	↑	○/↑	○	○	○/↑
2. Receiver not letting goods/service vehicles use off-street facilities	○	○	○	○	○	↑	↑	○	○	○
3. Receivers not present to accept delivery/service	↑	↑	○	○	○	↑	○	○	○	○
4. Receivers requiring delivery to employee's desks	○	↑	○	○	○	○	↑	○	○	○
5. A few larger receivers accept out of hours deliveries	○	○	○	↓	○	↓	○	○	↑	○
6. Fewer premises using joint collection & delivery operations - want early deliveries & late collections	↑	○/↑	○	○	○	↑	↓	○	○	○
<b>Customer requirements of service companies</b>										
1. Increase in outsourced servicing requirements	↑	↑	○	○	○	↑	↑	○	○	○
2. Reduction in required response time	↑	↑	○	○	○	↑	○	○	○	○
3. Remote servicing of computer systems	↓	↓	○	○	○	↓	↓	○	○	○
<b>Management of goods and service vehicle operations</b>										
1. Improvement in road transport relative cost/performance	↑	↑	○	○	○	↑	○	○	○	○
2. Use of computer routeing/scheduling	○/↓	○/↓	↓	↓	○	○	○	○	○	↑
3. Driver training/performance monitoring measures	○	○	○	↓	○	○	○	○	○	
4. Improved communication systems between driver & depot	↓	○/↓	↓	○	○	○	○	○	○	○
5. Increase in guaranteed delivery time services	↑	↑	○	○	○/↑	↓	○	○	○	○/↑
6. Increased need to lock vehicles during delivery	○	○	○	○	○	○	↑	○	○	○

**Key:**    ↑ = Increase in vehicle activity pattern                      ↓ = Decrease in vehicle activity pattern                      ○ = No change in vehicle activity pattern

**Table 2: Changes in logistics and distribution operations and regulations in last 10 years and consequent changes in urban freight vehicle activity (Continued)**

	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
<b>Goods supplier arrangements</b>										
1. Suppliers not imposing minimum drop/order size	↑	↑	○	○	○	↑	○	○	○	○
<b>Vehicle manufacturers</b>										
1. Improved engine efficiency/vehicle design	○	○	○	↓	○	○	○	○	○	○
2. Introduction of non-fossil fuel powered vehicles	○	○	○	↓	○	○	○	○	○	○
<b>Transport and other policy measures</b>										
1. More/enlarged pedestrian areas	○/↑	○/↑	○/↑	○	↓	↓	○/↑	○	○	○
2. Greater loading/unloading time restrictions	○/↑	○/↑	○	○	○	↓	○	○	↑	○
3. More stringent vehicle size/weight restrictions	↑	↑	○	↑/↓/○	↓	↑/↓/○	○	○	○	○
4. More bus/cycle lanes	○	○/↑	○	○/↑	○	○/↑	○	○/↑	○	↑/○/↓
5. Increased product supply regulations (e.g. Duty of Care Regs. for food, hazardous goods)	○	○/↑	○	○	○/↓	○/↑	↑	○	○	○
6. Packaging and Waste Regs. Leading to increase in the number of waste collection services at premises	↑	↑	○	○	○/↓	○/↑	○	○	○	○
<b>Total demand for road space/behaviour of other road users</b>										
1. Increase in road traffic levels	○	↑	○	↑	↓	○	○	↑	○/↑	○/↓
2. More difficult to find on-street parking spaces near premises being visited	○	↑	○/↑	○	○/↓	○	↑	○	○/↑	○

**Key:**    ↑ = Increase in vehicle activity pattern                      ↓ = Decrease in vehicle activity pattern                      ○ = No change in vehicle activity pattern

## **1.9 Sustainability and efficiency/ease of carrying out goods and service operations**

In chapters 3 and 4, a wide range of policy measures are discussed that could either make goods and service vehicle operations in urban areas easier or more difficult to perform. Chapter 5 addresses company initiatives that could make goods and service vehicle operations in urban areas easier to perform and also result in both environmental and economic benefits.

Making goods and service vehicle activities easier to perform should result in an improvement in efficiency and productivity of these vehicle activities and therefore improve the economic sustainability of the operation. However some of the measures and initiatives that would bring make goods and service vehicle activities easier to perform would impose additional costs on receivers of goods and services (they may for instance require to employ more labour, or to redesign their premises). It is therefore important that any cost savings enjoyed by one company that result from these measures and initiatives are shared between all the companies working together the supply chain, so as to compensate any company that experiences increased costs.

It is also important to recognise that if goods and service vehicle operations become easier to perform (and hence more economically viable as a result of new policy measures and/or company initiatives), it is not necessarily the case that this will also lead to the operations becoming more environmentally and socially sustainable. In fact, in some cases the reverse is true; as some operations become easier to perform their environmental impact increases (for example, if at its most extreme, all regulations and restrictions governing the use of goods and service vehicles in urban areas were abolished, these operations would become easier to perform, but the environmental impacts that these operations caused would rise - most current restrictions are in place for good reason). It is obviously more desirable to attempt to identify policy measures and company initiatives that have the twin effects of making goods and service vehicle activities easier to perform (and hence more economically viable) and also result in a reduction of the social and environmental impacts that these operations cause.

Measures that reduce one environmental impact of urban freight may well increase another impact (for instance banning heavy goods vehicles from an urban area may be beneficial in terms of visual intrusion, physical intimidation and noise, but may lead to a greater total number of trips performed by smaller vehicles and hence more fossil fuel use and pollutant emissions). In determining appropriate measures to reduce the impacts of urban freight transport it is necessary to understand the particular problems that the measures need to alleviate in the specific urban area in question. There are unlikely to be universally applicable solutions.

There are three plausible goals for urban freight transport policies that address both economic and environmental concerns:

- i. To maximise the ease with which goods and service vehicle activities can be performed, without worsening the environmental and social impacts that they impose on the urban area.
- ii. To minimise the environmental and social impacts caused by goods and service vehicles in urban areas, without worsening the ease with which these vehicle activities can be performed.
- iii. To improve the ease with which goods and service vehicle activities can be performed and at the same time reduce the environmental and social impacts that they impose on the urban area.

When considering how to reduce the environmental and social impacts caused by goods and service transport it is important to determine which impact(s) need to be reduced and the means by which the activity causing those impacts can be altered. We are currently in a position in the UK in which many policy makers are still considering which impact(s) they most want to reduce. When this decision has been made it is then necessary to determine suitable policy measures for achieving these impact reductions.

It may be useful to develop sustainability performance indicators in order to be able to measure and benchmark current urban goods and service operations and set standards and targets for these operations. For instance, if it is decided that certain pollutant emissions with a local impact need to be reduced, it would be possible to develop the following performance indicators:

- emissions per kilometre travelled by goods vehicles in urban areas;
- emissions per tonne carried by goods vehicles in urban areas;
- emissions per kilometre travelled per tonne carried by goods vehicles in urban areas.

Some indicators are more difficult to measure than others, as some of the impacts are more subjective than others. When thinking about performance indicators it is necessary to decide how the indicators are to be used. They could be used in the context of urban goods and service activities in several ways:

- for a specific environmental impact, the local authority could try to measure the total level of the impact caused by all vehicle activity in the urban area and then use this information to devise policy measures to reduce it by a certain proportion;
- for a specific environmental impact, the local authority could try to measure the total level of the impact caused by all goods and service vehicle activity in the urban area and then use this information to devise policy measures to reduce this goods and service vehicle impact by a certain proportion;
- for a specific environmental impact, the local authority could try to measure the total level of the impact caused by all goods and service vehicle activity in the urban area and then, in conjunction with goods and service companies and the other parties in their supply chains, use this information to devise initiatives to reduce each company's goods and service vehicle impact by a certain proportion.

If the concern was about greenhouse gases (which have a global rather than local impact) it would be more appropriate to develop performance indicators that measured the emissions resulting from the entire activity of moving goods from the point of initial manufacture to the point of final consumption (e.g. as a participant in a discussion group said, "What you want to know is how many units of CO<sub>2</sub> have been emitted by the time the beans reach the customer's home?"). For success in tackling impacts that extend beyond the local area, it is likely that joint efforts at a national or international level would be necessary, as the problems extends beyond the urban boundary in which the local authority has political powers. There is also the danger that the generation of the impact will simply be transferred from one location to another without the concerted efforts of policy makers at a larger geographic scale.

Table 3 shows all the policy measures and company initiatives discussed in chapters 3 to 5. It indicates the effects that, from having carried out the research, we believe each would be likely to have on: (i) the ease of performing goods and service vehicle operations, (ii) the total supply chain costs of urban goods supply and servicing, and (iii) the environmental/social impacts caused by goods and service vehicles.

**Table 3: Likely effect of measures/initiatives on ease of performing, cost and environmental impact of urban freight vehicle activity**

	Make goods/service vehicle operations easier or more difficult?	Increase or decrease in total supply chain costs?	Increase or reduce environmental and social impacts of goods/service vehicle operations?
<b>Policy measures/company initiatives:</b>			
Relaxing loading/unloading time restrictions	EASIER	DECREASE	UNCERTAIN
Relaxing goods vehicle size/weight restrictions	EASIER	DECREASE	UNCERTAIN
Allowing goods/service vehicles into pedestrianised areas which currently have vehicle access restrictions at certain times	EASIER	DECREASE	INCREASE
Improving on-street loading/parking facilities for goods and service vehicles	EASIER	DECREASE	UNCERTAIN
Allowing goods/service vehicles to use bus lanes	EASIER	DECREASE	UNCERTAIN
Allowing longer hours for goods and service vehicle access (e.g. remove any out-of-hours curfews)	EASIER	UNCERTAIN	UNCERTAIN
Car use reduction strategies	EASIER	DECREASE	UNCERTAIN
Better enforcement of car parking regulations	EASIER (for goods vehs.) HARDER (for service vehs.)	UNCERTAIN	UNCERTAIN
Improved traffic/roadwork information	EASIER	DECREASE	DECREASE
Road infrastructure/building/bypasses	EASIER	DECREASE	UNCERTAIN
Improved road signing	EASIER	DECREASE	DECREASE
Lorry routes (could be advisory or mandatory)	ADVISORY - EASIER; MANDATORY - UNCERTAIN	UNCERTAIN	DECREASE/ UNCERTAIN
Improving access to back of premises	EASIER	DECREASE	DECREASE
Yellow boxes - traffic management	EASIER	DECREASE	DECREASE
Traffic calming - traffic management	UNCERTAIN	UNCERTAIN	DECREASE
Traffic signals sequencing to assist freight	EASIER	DECREASE	DECREASE
Fixed width restrictions	UNCERTAIN	UNCERTAIN	UNCERTAIN
Policies to improve public transport	EASIER	DECREASE	N/A
Designing goods/service vehicle facilities into building design/planning permission	EASIER	UNCERTAIN	DECREASE

<b>Policy measures/company initiatives:</b>	Make goods/service vehicle operations easier or more difficult?	Increase or decrease in total supply chain costs?	Increase or reduce environmental and social impacts of goods/service vehicle operations?
Encourage relocation of premises to less dense areas	EASIER	DECREASE	DECREASE
Park and ride depositories	UNCERTAIN	INCREASE	UNCERTAIN
Urban transshipment centres	UNCERTAIN	UNCERTAIN	UNCERTAIN
Quality Partnerships for urban distribution	EASIER	DECREASE/ UNCERTAIN	DECREASE
New/enlarged pedestrianised areas (more vehicle access time restrictions)	MORE DIFFICULT	INCREASE	UNCERTAIN
Lower speed limits in urban areas	MORE DIFFICULT	INCREASE	DECREASE
Greater vehicle weight/size restrictions	MORE DIFFICULT	INCREASE	UNCERTAIN
More loading/unloading/parking time restrictions	MORE DIFFICULT	INCREASE	UNCERTAIN
Alternatively-powered vehicles	NO CHANGE	INCREASE/ UNCERTAIN	DECREASE
More bus/cycles lanes	MORE DIFFICULT	INCREASE	INCREASE
Urban road user charging	UNCERTAIN	UNCERTAIN	UNCERTAIN
Self-imposed collection and delivery time bans	MORE DIFFICULT	INCREASE	UNCERTAIN
Receiving premises helping to unload vehicle	EASIER	UNCERTAIN	DECREASE
Receiver not needing to check deliveries	EASIER	UNCERTAIN	DECREASE
Finding the right person at the receiver's premises	EASIER	DECREASE	DECREASE
Staff at the premises making deliveries/consolidating collections	EASIER	UNCERTAIN	DECREASE
Receivers relaxing need for early morning delivery/being more realistic/truthful about when they really need delivery	EASIER	DECREASE	DECREASE
Receivers operating vehicle booking-in systems efficiently	EASIER	DECREASE	DECREASE
Premises accepting out of hours collections and deliveries	EASIER	UNCERTAIN	DECREASE/ UNCERTAIN
Extension in days of week that premises accept collections and deliveries	EASIER	UNCERTAIN	DECREASE
Premises allowing goods and service vehicles to use off-street facilities where they exist	EASIER	UNCERTAIN	DECREASE

<b>Policy measures/company initiatives:</b>	Make goods/service vehicle operations easier or more difficult?	Increase or decrease in total supply chain costs?	Increase or reduce environmental and social impacts of goods/service vehicle operations?
Communication systems with shippers and receivers about distribution matters	EASIER	DECREASE	DECREASE
Freight and service operators buying the right type/size of vehicle for the operation	EASIER	DECREASE	DECREASE
Urban container concept	UNCERTAIN	UNCERTAIN	DECREASE/ UNCERTAIN
Companies encouraging employees to use public transport for journey to work	EASIER	DECREASE	N/A
Service companies obtaining as much information as possible when the problem is reported	EASIER	DECREASE	DECREASE
Improved allocation of jobs to best suited engineers	EASIER	DECREASE	DECREASE
Mobile communication between depot and driver/engineer - voice communication	EASIER	UNCERTAIN	DECREASE
Mobile communication driver/engineer - data communication, including automatic vehicle location	EASIER	DECREASE	DECREASE
Improved routeing and scheduling	EASIER	DECREASE	DECREASE
Pricing by suppliers/wholesalers to deter trips delivering small quantities	EASIER	DECREASE	DECREASE
Operating fewer but larger premises/distribution centres/warehouses in urban area	EASIER	DECREASE	DECREASE
Smooth, reliable supply from suppliers to wholesaler's/supplier's urban depot	EASIER	DECREASE	DECREASE
Virtual transshipment/"City logistics" systems	MORE DIFFICULT (freight companies) EASIER (receiver)	DECREASE	DECREASE/ UNCERTAIN
Shared user distribution	MORE DIFFICULT (freight companies) EASIER (receiver)	DECREASE	DECREASE
Use of local suppliers/consolidated deliveries from them	MORE DIFFICULT (freight companies) EASIER (receiver)	UNCERTAIN	DECREASE/ UNCERTAIN
Driver efficiency	EASIER	DECREASE	DECREASE
Premises agreeing to receive fewer, less frequent deliveries	EASIER	DECREASE	DECREASE
Combined collection and delivery trips	MORE DIFFICULT	DECREASE	DECREASE

Making urban goods and service operations more sustainable: Policy and company initiatives

<b>Policy measures/company initiatives:</b>	Make goods/service vehicle operations easier or more difficult?	Increase or decrease in total supply chain costs?	Increase or reduce environmental and social impacts of goods/service vehicle operations?
Consolidation of goods to be returned	EASIER	DECREASE	DECREASE
Achieving backloads for returning vehicles	MORE DIFFICULT	DECREASE	DECREASE
Goods vehicles/drivers providing equipment and parts to service engineers	EASIER	UNCERTAIN	UNCERTAIN
Premises using fewer goods suppliers	EASIER	DECREASE	DECREASE
Freight modal shift	UNCERTAIN	UNCERTAIN	DECREASE
Vehicle fuel efficiency	NO CHANGE	DECREASE	DECREASE
The use of cleaner and alternative vehicle fuels	NO CHANGE	UNCERTAIN	DECREASE
Designing more environmentally-friendly vehicles	NO CHANGE	UNCERTAIN	DECREASE
Driver training/driver safety	UNCERTAIN	UNCERTAIN	DECREASE
Design of off-street goods vehicle reception facilities at premises	EASIER	UNCERTAIN	DECREASE

## 2. Freight transport policy in urban areas

### 2.1 Introduction

From comments made during the individual interviews and group discussions held as part of the research, it is clear that many of the participants working in goods collection and delivery and service provision, as well as in retailing and manufacturing, have several concerns about the position of central government and local authorities in relation to goods and service operations in urban areas. They are typically sceptical about:

- the extent to which central government and local authorities understand the role, importance and operations of goods and service flows in urban areas and the vehicle activity which supports this;
- the relative importance that central government and local authorities place upon goods and service transport in comparison with other forms of transport in urban areas, such as pedestrians, cyclists, cars, buses and taxis;
- the desire of central government and local authorities to improve the regulations and restrictions that currently govern goods and service vehicle operation in urban areas;
- the ability of central government and local authorities to actually generate policy measures that would improve the operating environment for goods and service vehicles, even if they were committed to trying to improve goods and service flows in urban areas;
- the likelihood of local authorities entering into a meaningful dialogue on urban goods and service transport.

The following sections of this chapter consider some of the concerns of companies that provide services and distribute goods in urban areas, as well as those of urban premises that receive goods and services, that participated in the study (either in face-to-face interviews or in discussion group sessions).

### 2.2 Government understanding of goods and service flows in urban area, and the role of the vehicle activity

There was a general feeling among most of the participants in the research that within central government and local authorities there is not currently a good level of understanding about:

- the importance of goods and service flows to the urban premises that receive them, in terms of their need to be competitive and able to offer a high level of customer service and choice to their consumers, and to the competitiveness of the urban economy as a whole;
- the range of goods and service flows required by urban premises;
- the importance of the goods and service vehicle activity which facilitates these flows;
- the organisation and operations of urban freight transport and service companies, and the level of service and response that they often have to provide to their customers;
- how retailers and manufacturers have changed their pattern of operation over the last 10-15 years and the affect that this has had on the need for frequent and reliable of goods and service flows, and hence vehicle activity to and from their premises;
- the transport problems experienced by urban freight transport and service operations.

In our experience, service transport tends to be less well understood by policy makers than goods transport in urban areas. Both areas have suffered from a lack of research during the last twenty years. If this lack of understanding among central government and local authorities does exist, and the evidence both from talking to companies and policy makers tends to suggest that it does, it is hardly surprising:

- Traditionally, freight transport policy has been a neglected part of transport policy in the UK. As Ogden (1992, p.185) has recognised “consideration of trucks and freight movements tend to be

limited to specific routes where there are particular concerns, such as a truck route or access ban, rather than a systematic overall analysis with clear objectives”.

- Traditionally, freight transport has been viewed as a problem rather than an essential activity in policy thinking in the UK. As Ogden (1992, p.185/6) has noted “Traffic problems are perceived primarily from the viewpoint of motorcars (and perhaps pedestrians and cyclists) because traffic engineers empathise with these problems...An attitude amongst some traffic engineers that their role is to regulate and restrict a rapacious private sector, rather than to assist it to provide goods and services to the community; this leads to (or results from) polarisation of attitudes rather than co-operation between the public and private sectors in finding mutually satisfactory solutions”.
- Few policy makers with a freight transport remit have any experience of actually working in the industry
- Few traffic engineers and policy makers have first hand experience of driving a goods vehicle and the problems encountered when driving one in an urban area

Many local authorities in the UK do not have a freight transport policy to the same extent that they have a public transport policy. Their freight-thinking has tended to take place as a reaction to problems, usually arising from complaints made by residents rather than taking a proactive position and developing a freight strategy.

Until about two or three years ago, the UK Government published and said little about goods and service transport in general, and in particular about *urban* freight transport. The considerations that did take place in the then Department of Transport were to do with goods vehicle activity rather than to do with logistics and distribution systems. These considerations tended to be concerned with controlling and restricting goods vehicle activities rather than addressing issues about how to assist them and make them more efficient (see, for example, Civic Trust et al., 1990a and 1990b). Freight-related policies that did exist tended to be compartmentalised and modally-based.

However, there has been an attempt by Government to rectify this situation. A Freight Distribution and Logistics Unit has been established in the DETR, and this Unit was responsible for the publication of a daughter document to the 1998 Transport White Paper entitled “Sustainable Distribution” (DETR, 1998 and 1999). This was the first public attempt by Government to demonstrate any understanding of the modern logistics and distribution systems being used to supply goods in the UK. It also included a section on the distribution of goods in urban areas and several ideas about possible areas of research and initiatives that could be carried out.

With the Government’s recently acknowledged need for integrated thinking when considering transport, the DETR has begun to recognise and promote the need for supply chain thinking, especially when considering how to relate freight transport to the notion of sustainability. Within “Sustainable Distribution”, the following sustainable distribution objectives are identified:

- to increase the efficiency of distribution and thereby improve competitiveness, choice and economic growth
- to minimise the social and environmental impacts of distribution and thereby increase people’s quality of life

According to central government it will be necessary for each urban area to devise and implement policies, actions and measures that bring these objectives about.

Passenger transport issues have taken priority over freight transport matters in local government over the last 20 years. However, thinking and prioritisation about goods and service transport is also now changing within local government. This increase in the importance of freight transport considerations within local government is due to the following factors:

- the recognition of the environmental problems of freight transport;

- a realisation that there is a need to make freight transport more efficient for commercial reasons;
- pressure from central government to generate policies and plans for freight transport.

As a result of this new thinking in central government, local authorities are required to include a section on “Sustainable Distribution” in the new Local Transport Plans that they have to submit to government for the allocation of resources for local transport capital expenditure.

However, despite this improvement in recognition of freight transport in UK central and local government, this tends to be limited in the main to consideration of goods flows rather than servicing and its related vehicle activity. There is currently no specific policy for service vehicles in central or local government, and there is little, if any, feel for the current scale and importance of service traffic.

Also, documents published by central government and government-funded or -appointed organisations that deal with the subject of the urban area and its future development, design and/or regeneration, still fail to even mention goods and service transport requirements in urban areas. For instance the following reports all fail to mention the goods and service requirements and supporting vehicle activity in urban areas:

- “Towards an Urban Renaissance”, which was published in 1999 (The Report of the Urban Task Force). The mission statement of the Urban Task Force and this report was to “identify causes of urban decline in England and recommend practical solutions to bring people back into our cities, towns and urban neighbourhoods. It will establish a new vision for urban regeneration founded on the principles of design excellence, social well-being and environmental responsibility within a viable economic and legislative framework” (Urban Task Force, 1999). No mention of goods and service requirements of urban commercial and residential premises and the vehicle activity that facilitates the flows of these goods and services is made in the report.
- Vital and Viable Town centres - a 1994 report by URBED for the then Department of the Environment which was meant to represent “a major contribution to our understanding of town centres. It will help local authorities, property owners, retailers and local people to determine the action they need to take to achieve vital and viable town centre” (Department of the Environment, 1994). The report considers the need for good accessibility for people living and working in urban areas and hence the need for passenger-friendly public transport but makes no mention of the need for efficient and reliable goods and service transport and how this should be achieved.
- Sustainable Settlements: A Guide for Planners, Designers and Developers (Barton et al, 1995). A guide produced as part of the Local Agenda 21 Initiative which, “aims to help planners, designers and developers convert rhetoric of sustainable development into practical action”. The only mention of goods vehicles is in relation to the large turning circles they require.
- Sustainable Residential Quality: New Approaches to Urban Living (a 1997 report by Llewelyn-Davis for the London Planning Advisory Committee, the Government Office for London and the DETR). The purpose of the project was to examine “to what extent and how might London accommodate additional dwellings while maintaining urban quality and fostering sustainable development?” (Llewelyn-Davis, 1997). The report considers the issues of car reduction through accessibility to public transport and facilities, but makes no reference to the potential growth in the home delivery and home shopping market and the facilities required by home delivery vehicles to make deliveries to residential homes.

As the above examples illustrate, questions relating to goods and service vehicles and efficient, smooth, reliable goods and service provision in urban areas need to receive much greater consideration by urban planners and designers at national and local levels of government. These consideration should include: how best to design shops, offices, industrial buildings, residential and other buildings in the urban area to receive goods and services and also the road-related design matters in the case of on-street deliveries and parking of goods and service vehicles. The following comments was made by a manager in a service company during a discussion group:

“We feel something needs to be done in (name of central London Borough) as it is becoming almost as bad as (name of another central London Borough) in terms of clamps and tow-aways. They (the London Borough) perceive that we park up a transit vehicle on-street and leave it there, when of course no-one wants to leave a vehicle in (name of central London Borough). We tried to explain the type of work we do and that therefore the vehicle is there for a purpose. We asked them to put in strategic places for our vehicles to park so that the vehicle wasn't causing an obstruction. But their response was, "no. It's not even part of our agenda, we are not even going to discuss it". Their agenda was, “we may be able to meet you half way and give you an hour's parking, but after that hour you've got to be out””.

*(Manager from service company)*

In an interview with a freight transport company, the management of the company had identified several shortcomings in local authorities' transport policies and understanding of freight transport. They felt that local authorities do not:

- i. Understand the operation of modern day logistics systems and the servicing requirements of urban land uses.
- ii. Appreciate the importance of freight transport and logistics to the functioning of towns and cities.
- iii. Sufficiently incorporate the goods and servicing requirements of a site into the planning process, so that they grant planning permission without consideration of how that site could be serviced in a manner that meets its needs. Then, once the site is operating, local authorities impose restrictions that either prevent the servicing of the site in the manner required or make the service extremely difficult.
- iv. Have a strategic plan for freight transport and servicing in the same way that they have structure plans and development plans that identify future land uses and development.

In another group discussion the participants voiced the following views when asked whether they felt goods and service activities and the needs of companies providing these activities are well understood by local authorities:

"They don't ask you".

"I don't think that they are considered".

Some participants in discussion groups felt that the industry could and should help to educate and inform central and local government about their operations and requirements, as the following conversation illustrates:

"We're active members of the FTA (Freight Transport Association). This may sound very arrogant, and please excuse me if it does, but I think that there is an enormous role for the industry to educate local authority decision-makers".

"I think that they're (i.e. local authorities) beginning to recognise that though. That this is a whole area that they don't know too much about. They've often spent a lot of their careers focusing on passenger transport and people transport issues, and they'll say “hold on, what's all this logistics stuff?””.

"But being self-critical, I don't think the distribution industry is yet in a position where it can give that education or guidance. I think we all talk with different voices at different times. I think the trade associations could actually perform a very useful role. And it's not just going for 44 tonne vehicles, it's being a little more inventive. And if you want to identify an area where the FTA will have to do better, it's regional branches, because of the spread of decision-making to a more local level and it's also going to have to look at

its educational role, which is not telling guys how to change tyres, its talking to legislators and local authorities and saying, “this is what it's all about””.

### **2.3 Perceived importance that government places upon freight transport in comparison with other forms of transport in urban areas**

The discussion group sessions indicate that many representatives working in goods and service companies, and in companies that send and receive goods, feel that central government and local authorities have been biased in their approach to transport policy, which has been to the detriment of goods and service operations. This is illustrated by the following comment made by a retail manager:

"It's fine to have a pedestrian zone, but you can make the pedestrian zone so big that it takes someone 15 minutes to get to the shop. If you look at the new towns you've got pedestrian zones, but you're not actually that far from anywhere, you've only got a 5 minute walk to get anywhere because they're designed like that. How I see it is that Norwich is saying 'right we'll make the whole of the middle pedestrian only'. Well it's fairly large the middle of Norwich, you're not just talking about a small area; then to get in there, (to the city centre), becomes extremely difficult".

### **2.4 Perceived desire of central government and local authorities to improve the efficiency of goods and service vehicle operation in urban areas**

From the interviews and discussion groups carried out there is little evidence that businesses have much confidence in either central government or local authorities altering their traditional views of freight transport. They do not expect goods and service vehicle movements to be re-prioritised as more important than they were previously considered to be by policy makers. It can be argued that industry has good reason for this scepticism as there is little evidence to date of any major attempts by local authorities to implement policy measures to assist goods and service activities in urban areas. Instead most new policy measures place new constraints and restrictions on goods and service vehicle activities. (However, see section 2.9 on the freight transport initiative launched by local authorities in Norwich in conjunction with this research).

The DETR is, however, apparently committed to devising a freight transport policy that will help to bring about increases in the efficiency of freight transport operations. Improvements in operational efficiency (such as a reduction in the amount of empty running and increases in vehicle load factors) are viewed by the DETR as being capable of bringing about far more gains than “big” approaches such as freight modal shift from road to rail (however there is obviously scope for both types of approach). “Sustainable Distribution” indicates that central and local governments should be concentrating on identifying policy measures that encourage efficient road freight transport and service operations (and which can therefore be viewed by companies as “carrots”), rather than measures which prevent and prohibit certain operations (i.e. “sticks”). However there are several problems in achieving this:

- Some towns and cities do not currently have certain restrictions such as bans on night deliveries, or on certain sizes of vehicles whereas others do. In line with government thinking, in those urban areas that already have such restrictions in place, operators can be offered exemptions if they behave in a particular way and this will potentially improve their operational efficiency. However in those urban areas where such restrictions do not currently exist, the restriction would have to be imposed before companies operating in a suitable manner could be exempted, or companies would have to be threatened with the restrictions unless they behaved in a manner deemed appropriate by the local authority. This is liable to be viewed by companies as a stick rather than as a carrot, and runs counter to government thinking in sustainable distribution.
- Each town and city in the UK has different types and severities of environmental problems caused by freight transport, so various policy measures and solutions will be needed in different urban areas. However, if the efficiency of goods and service transport operations are to increase it is important that local authorities do not introduce conflicting policy measures, otherwise freight

transport and service companies are liable to need several fleets of vehicles to cope with the regulations in the different urban locations and this will reduce vehicle utilisation and operational efficiency. For instance, if one city required the use of electric vehicles and another nearby city insisted upon gas powered vehicles this could in fact increase the number of vehicles on the roads, the total number of trips, the cost of freight transport and reduce operational efficiency and vehicle utilisation of companies which have vehicles operating in numerous different urban areas. There is therefore a need to co-ordinate policy measures that are to be introduced in order to see that what is sensible and viable at the local level (for instance in a single city) and regionally and nationally between different urban areas. However there is not currently a suitable mechanism in place for achieving this.

Many of the participants in interviews and discussion groups have been sceptical about the likelihood that central government and local authorities will implement policy measures that improve the efficiency of road-based goods and service operations. The following conversation that took place in one of the discussion group sessions illustrates the perceptions of many of the participating companies about the government's desire to improve the efficiency of freight transport:

"What is your perception of government's interest in the problems faced in servicing a big economy like London?"

*(Facilitator)*

"I don't think they're interested".

*(Manager from service company)*

"Do they even know anything about it?"

*(Service engineer 1)*

"They certainly know about it because it's a big revenue generator for them."

*(Service engineer 2)*

"Their interest in it is to do with financial gain".

*(Manager from service company)*

"As soon as councils started taking on their own parking wardens, giving their own wardens targets for the number of tickets they had to issue, it all became a big money earner."

*(Service engineer 2)*

"Wasn't it (name of London Borough) who were buying shares abroad with the millions that they made from parking fines? It was in the paper, it was one of the councils in London".

*(Service engineer 1)*

The management of one freight transport company interviewed during the study identified the following shortcomings in the way that local authorities currently deal with transport policy matters and felt this was unlikely to change:

- local authorities introduce operating restrictions on goods vehicles and other traffic without clearly communicating to road users why these restrictions have been introduced (either local authorities know why themselves but fail to communicate this to road users, or they themselves do not understand the rationale for the restriction);
- the above problem stems from local authorities' inability to define the transport/environmental problem that they are trying to address;

- each local authority is working to its own separate agenda and therefore different restrictions and approaches are introduced in different towns and cities. This makes such restrictions even more difficult for freight transport/logistics companies to cope with;
- each local authority, due to its lack of an urban freight strategy, introduces restrictions on an ad hoc basis (usually as a result of complaints from residents etc), the sum of which is a chaotic set of restrictions. This lack of coherence makes distributing goods in any one town or city very difficult.

## **2.5 Perceptions of governments' ability to generate policy measures that would improve the operating environment for goods and service vehicles**

Central government and local authorities need to determine the main freight issues and concerns that need to be addressed, only then is it possible to begin to formulate potential policy measures. Some of these concerns are likely to focus on the negative aspects of goods and service vehicle operations (such as pollutant emissions, accidents, noise, visual intrusion etc.), while other concerns will address the need for efficient and reliable goods and service operations in order to support the competitiveness of the urban economy. There is potential for policy conflict between measures that attempt to promote operational efficiency and measures that address environmental impacts of goods and service vehicles (i.e. a conflict between what is good for the industry and what is good for the public and the environment).

Some of the freight transport and service companies involved in the study were concerned about the ability of local authorities to resolve these policy conflicts. The management of one freight transport company felt that local authorities' lack of understanding of modern logistics systems, leads to a situation in which, when formulating new vehicle operating restrictions, they possess insufficient insight into the problems that this will cause freight transport companies, and how these companies will be forced to reorganise their operations as a result. This reorganisation of operations can result in a worsening of environmental impacts caused by goods vehicles (as the company has to operate more vehicle trips to conduct the same number of deliveries), but local authorities are not always aware of this. Also, without follow up studies to determine if the restrictions that have been imposed are bringing about the desired improvements, local authorities are not in a position to assess the success of their policies. This problem was emphasised by a retail manager in a discussion group session:

"All the policies they've had recently haven't reduced any of the traffic problems in the city at all. It has probably made things worse in a lot of areas. It's solved one particular thing in that there are no cars going there, but everything else is even worse and everyone's got even greater problems. The goods and service vehicles and customers are suffering even more."

*(Retail manager)*

## **2.6 Participants' views on the likelihood of local authorities entering into a meaningful dialogue on urban goods and service transport**

Policy makers have not traditionally entered into, or explicitly encouraged dialogue about urban freight transport with goods and service companies and with retailers, manufacturers, offices and other premises that depend upon smooth and reliable goods and service flows if they are to function efficiently. This lack of communication and consultation has clearly affected industry's perceptions of central and local government's desire to understand their problems and help them. If more sustainable freight transport policies are to be developed, there is a need to improve communication between:

- Central and local government
- Local authorities and the local police force
- Government and business

Communication problems, misunderstandings and misleading perceptions are all issues that could potentially be dealt with, to some extent, by the Quality Partnerships for Urban Distribution proposed in “Sustainable Distribution” (DETR, 1999 - see Section 2.2). However there are problems to overcome in trying to bring about public-private sector co-operation concerning urban goods and servicing issues and operations. As Millendorf (1989) has noted, “Effective solutions to most freight transport problems....require substantial co-operation between the private sector, where goods are moved, and the public sector, which provides and maintains the roadway system infrastructure. That’s easy enough to say, but in reality such co-operation requires a degree of credibility and trust which takes time and effort to build.”

Our research suggests that relationships and understanding between local government and businesses in Norwich and London (and probably in most other parts of the UK) need to be fostered and developed (see section 2.9 for details of how this is now taking place in Norwich). Many of the company representatives that we interviewed or who participated in discussion groups felt that local authorities have an autocratic approach to transport policy and have had little, if any, experience of being invited by local authorities to provide their views and ideas about the direction of transport policies and measures. Where they have, in the past, responded to proposed traffic and transport schemes, few believe that local authorities have taken much notice of their objections and needs. It would seem that at present there is little confidence among business people that their local authorities even have an interest in understanding their distribution and servicing problems, let alone have any desire to reduce these problems; the following comments were made during discussion group sessions:

".....the Council never listen to anyone, they don't actually listen to the public. If they actually asked the public `do you think that's gonna create a problem if we do this, can it ease the congestion if we revert back to this' but they just won't even consider doing that."

"They see a traffic jam somewhere and impose restrictions without even asking why. That’s how we feel anyway".

"The last letter we got from the council was to say that they were considering imposing delivery times. That wasn't `have you anything to say about this?' It was just imposed on us".

"Exchange Street, they restricted it so that you have to go into one lane to go through. That just happened."

"I think there would be an advantage with more discussion between the authorities and the people that are actually using the service. It seems that you just get told what it is and there isn't a lot of chance for feedback on it".

"We've got this idea that the council wants to make the centre of Norwich pedestrianised and that we have no say in it".

We found little evidence during the research of existing collaboration and dialogue between goods and service companies and local authorities. One of the participating service companies in a discussion group session had made significant efforts to discuss the problems created by the transport and parking policies with local authorities, but to little avail as the following comments indicate:

“We tried to negotiate with (name of two London Boroughs) to say that their having to hand out so many tickets actually worsened the flow of traffic through the city. Yet if our vehicles are parked on single yellow lines and are not obstructing the traffic and we are trying to provide a service why are you ticketing, clamping and towing our vehicles

away? Their actions are making traffic flow even worse when the idea should be to keep it moving.”

“We have had to try to negotiate with about 60 individual councils in London. There is no governing body for London. You get referred to someone in Central Government policy but all they can do is give guidance to the councils and the councils can choose to ignore this.”

“(If goods and service vehicles were allowed to use bus lanes) in London with 33 authorities, your driver will have to know in which borough he can use a bus lane and in which he can't. So unless it's run by the Government Office for London or the Mayor it will be a problem”.

The manager of a Norwich-based service company who was interviewed has built up a relationship with the local police so that he can get clearance for their vehicles to enter pedestrianised areas and park to do essential servicing work at times that vehicles are usually restricted from entering these areas. It had taken the manager several years to build up this understanding with the police and he has put a lot of effort into fostering it, but it is essential for his business to be able to access the city centre when necessary so has been extremely worthwhile.

The logistics director from a multiple retailer was far more positive about the role that local authorities can, and he expects will, play in addressing urban freight issues:

"I agree with the key tenet of the White Paper that there is no one solution to the problems of congestion, noise and pollution. Therefore one has to accept that more solutions will be generated locally rather than nationally or internationally. I think that the EU can set certain overall standards and conditions, I think the UK government can set guidelines and conditions and can legislate for those, but I think that at the end of the day most of the solutions will be local solutions. And we have spent a lot of time with certain local authorities maintaining our ability to operate in that town or city and at the same time trying to develop solutions which both suit them and suit us. And it's quite a pleasant surprise to find that there is mood around in this country in particular, it's less so in mainland Europe I must say, to say, "look this is what we want as a local authority this is where the pressures are coming from" and we say, "well this is what we want as a retailer, and this is where our pressures are coming from" and we look for common ground. And surprisingly you can often find common ground. Now that won't be the case all the time, we will have difficulties. But broadly local authority partnerships are a major plank of what we are doing to move forward".

One freight transport company owner/driver told us:

"The knack is to meet the traffic wardens in the caff and buy them a cup of tea every once in a while!".

When asked, the representatives of a service company felt that if several goods and service companies grouped together and contacted the local authority jointly to discuss their transport and parking problems that this may prove more effective than the separate approaches that they currently make. The service company concerned felt that if their customers (retailers, manufacturers, financial service companies) also grouped together with them to talk with local authorities (about the impact of current transport and parking policies on the efficiency of goods and service operations) that this would be helpful in making the local authorities give the problems more consideration. However, they felt that this is unlikely to happen as their customers do not have the time or inclination to worry about the transport problems that the goods and service providers experience, as the following conversation suggests:

“It's certainly possible that councils would listen more if other companies began to argue for these facilities. But are other companies prepared to fight our arguments, I don't think so.”

*(Manager from service company)*

“Our customers aren't interested. You go into a customer and say, “sorry I'm late I couldn't find anywhere to park”. They say, “So what? I want my service””.

*(Service engineer)*

“But there must come a time when, as a result of the problems, your service deteriorates to a point at which they become worried about this affecting their business”.

*(Facilitator)*

“Yes and that's when they go somewhere else” (i.e. to another service provider).

*(Manager from service company)*

“But maybe that other company is also affected by the problem and can't provide a better service”.

*(Facilitator)*

“Yes but the customer will still switch to them and then five years down the road they'll all come back to us”.

*(Service engineer)*

One retail manager in a discussion group session suggested that customers of freight transport and service companies are unlikely to want to become involved in dealing with their problems when they said:

“I get the feeling that it's not so much our problem as the contractors' problem who are doing the delivering. We can't tell (names of freight transport companies) “why don't you work together and give us a more environmentally vehicle””.

## **2.7 Participants' knowledge and understanding of current government policy on urban freight transport**

As well as businesses tending to perceive central government and local authorities as insensitive to their needs and problems, the research also suggests that freight transport and service companies are not well informed about government policy thinking about goods and service transport issues. Very few of the company employees that we have interviewed and have participated in discussion groups are aware of the existence of “Sustainable Distribution” published by the DETR and there is little, if any, awareness about its content.

Most participants from goods and service companies involved in the discussion groups expect freight transport policies and regulations in urban areas to become more stringent in future and to make it even more difficult for them to do their work reliably and efficiently. When we raised the notion that central government and local authorities may be considering ways in which to ease the difficulties faced by goods and service vehicles in urban areas, few participants thought that this was likely.

Some participants in discussion groups recognised that their industries could do a better job at making input to government thinking and disseminating best practice among freight transport and service companies:

“My view is that in the UK the logistics/distribution industry is fragmented and the problem with best practice is how you communicate it to everyone. As an industry I don't think we lobbied as effectively as we could have done before the White Paper was published. The FTA, RHA, IoL all doing different things - some are better at lobbying,

some at communicating information to members. As a company I don't think we are probably aware of all the best practice anyway. And you can only spend so much time taking part in events like this. We have chosen to be actively involved in London First as we do a lot of work in London but as a consequence of this we are not very active in the FTA or RHA. I think some of the problem is of our own making - in terms of how we disseminate best practice anyway”.

*(Distribution manager from retail company)*

“We've got too many bodies and a lot of them aren't very effective. And a lot of them are working on a different agenda to what they were probably originally started up for. Best practice isn't shared and sometimes its restricted...We are not very good at communicating”.

*(Distribution manager from retail company)*

In the discussion group sessions, several participants expressed a view that transport policies needed to change in the UK in a relatively radical manner. Few of those participants who took this stance viewed goods and service traffic as causing major problems. Instead they viewed non-essential car journeys as the main cause of environmental damage:

"We've got to do something because it can't carry on like this. You probably know all the figures but if we carry on like this for another 30 years we are going to come to a standstill I would imagine. Isn't car ownership going to double by 2030, so something is going to have to happen, I don't know quite what but something is going to have to change".

*(Retail manager)*

"I think at the end of the day you need to get a government that have got the balls to say, “we're not going to worry about our term (in office), we're not going to stick to our hidden agenda, we're actually going to make Britain a cleaner, better place”. Which isn't going to happen in the next five generations at least is it? I can't see it happening. And at a real basic level you need to start re-educating people that the car is not the be all and end all and that actually we are killing ourselves".

*(Service engineer)*

## **2.8 Government and Industry Quality Partnerships for Urban Distribution**

### **2.8.1 Government statements about Quality Partnerships for Urban Distribution**

Government proposals relating to quality partnerships and freight transport can be found in both the White Paper (DETR, 1998) and the ‘daughter’ document on Sustainable Distribution (DETR, 1999). The reference in the White Paper to quality partnerships for freight states:

*We will promote development of Quality Partnerships for freight between:  
the haulage industry, local authorities and business.*

*The aim will be to develop understanding of distribution issues and problems at the local level and to promote constructive solutions which reconcile need for access for goods and services with local environmental and social concerns.*

*Quality Partnerships for freight will build on existing experience such as “Delivering the Goods” a joint initiative on urban distribution by the Local Government Association and the Freight Transport Association.*

In “Sustainable Distribution” (DETR, 1999) reference is made to Quality Partnerships for Urban Distribution in the following terms:

*We shall:*

- *promote the development of Quality Partnerships between local authorities, the freight industry, business communities, residents and environmental groups*
- *carry out research into the potential for freight consolidation systems to improve urban distribution*
- *carry out research into the impact of out of hours running*

The section referring to Quality Partnerships for Urban Distribution also contains points relating to government, local authority and commercial initiatives. Although it is not explicitly stated that these initiatives should be the subject of Quality Partnerships, it is clear that some (or a combination of them) may well form part of a Quality Partnership. Among the initiatives discussed are:

- i. The lack of practical alternatives to lorries and vans for urban delivery and the acknowledgement that improvements will flow from better vehicle standards, but that much can be achieved by “carefully designed and targeted local initiatives such as traffic management schemes, priority routing and the like.” (page 78, DETR, 1999)
- ii. Support by the Government for the Clear Zones initiative, one aspect of which is addressing the need to improve deliveries and collections of goods within major centres, while reducing the problems of congestion and pollution. As the report states: “Measures which limit access to the city centre but provide loading/unloading facilities for goods are amongst the techniques being evaluated.” (page 79, DETR, 1999)
- iii. The report also identifies the scope for delivering outside peak hours in order to help to ensure efficient access for vital goods and services, at the same time as playing a very constructive part in helping to reduce traffic-related problems, although the possible problems of disturbance for local residents is noted. The document highlights the “need for local authorities to work with industry and central Government to examine the potential for reducing lorry noise, including the disturbance caused by loading, unloading and handling.” (page 79, DETR, 1999)
- iv. Changes in business practices to enhance the opportunity for consolidation of loads is mentioned in the context of transshipment centres. As the document states:

“Systems which encourage greater consolidation of deliveries within urban areas may have more to offer (than physical transshipment). Pilot research has already been commissioned.....which has initially focused upon the prospects for improving co-ordination of collections and deliveries in cities and enhancing resource utilisation through better information systems; in effect a “virtual City Logistics” concept”. (page 80, DETR, 1999)
- v. The need for local authorities to find ways to involve a range of interested groups in matters concerned with distribution is stressed:

“The Government believes that there would be value in developing a dialogue on urban distribution issues, based on the Quality Partnerships approach, involving local authorities, the business community, residents, environmental groups and industry”. (page 80, DETR, 1999)

“In order to co-ordinate all the different efforts, local authorities are now required to prepare new local transport plans which will set out proposals for implementing quality partnerships, traffic management and Local Agenda 21 strategies....We will look for evidence that authorities have taken appropriate steps to assess the impact of proposed policies and programmes on local and wider distribution systems and practices with regard to their economic, social and environmental outcomes. Whether directly or through trade and professional bodies, the Government is keen that local authorities should consult widely and involve industry at an early stage in the development of their plans”. (page 80, DETR, 1999)

In one sense the Government has tightened up the terminology relating to Quality Partnerships between the publication of White Paper and the Sustainable Distribution document and now explicitly refers to freight movements in *urban areas*. However, the range of interest groups that should be consulted has been widened.

## **2.8.2 Potential outcomes of Quality Partnerships for Urban Distribution**

The idea of Quality Partnerships is an exciting one and could lead to a range of actions that would improve existing arrangements for urban freight distribution. Some of these have already been identified in 'Sustainable Distribution' (DETR, 1999 - see above), however there are many others. For example, Quality Partnerships for Urban Distribution could:

- promote consistent urban freight policy approaches among government agencies, and help to co-ordinate implementation of policy measures;
- provide greater understanding for local authority and DETR officials about the role of goods and service transport, the difficulties it faces and the actual practices used in urban areas;
- keep policy makers informed about relevant trends and new technologies that affect urban freight transport operations;
- provide advice and forewarning to the industry about potential freight policy initiatives;
- provide policy makers with feedback about the effect and industry's responses to potential policy initiatives;
- ensure national and local government are in touch with industry concerns and problems;
- encourage companies to focus on the environmental and social impact of their operations;
- offer operating incentives and exemptions to companies prepared to meet certain operating standards.

The Government's concept is that both industry and society will benefit from Quality Partnerships for Urban Distribution as environmental improvements can be achieved at the same time as efficiency gains. This is clearly true in the case of some operational changes such as improvements in vehicle load factors, reductions in empty running (which can yield both economic and environmental improvements) and better routing and scheduling. Measures such as these have the advantage of being attractive to freight transport companies and industry as a whole (as they can result in lower transport costs) as well as to the wider urban community. It is these types of improvements that Quality Partnerships for Urban Distribution should strive to identify.

However, it is important to recognise that conflict that may exist between efficiency and environmental goals. In the case of some urban distribution problems there is unlikely to be any internal gain to the company from this adaptation in their behaviour and there may even be a reduction in economic efficiency. Policy measures likely to have this effect can include traffic management schemes, zoning of land use, infrastructure developments and improvements, licensing and regulations, road pricing, and terminals and transshipment centres (Ogden, 1992).

It is also necessary to note that in the case of Bus Quality Partnerships, some local authorities have found it difficult to ensure that only those companies participating in the partnership benefit from any infrastructure improvements made by the local authority (i.e. it is important to find ways to prevent companies not in the partnership from enjoying the benefits without making any input to the process).

Given that there are so many promising outcomes from potential partnerships and given the wide scope for defining a Quality Partnership for Urban Distribution it is useful to explore the existing Bus Quality Partnerships.

There are clearly differences between Quality Partnerships for Urban Distribution and Quality Partnerships for Buses - for example:

- in Bus Quality Partnerships only one type of company is involved (bus operators);

- there are relatively small number of bus companies compared to goods and service companies and their customers (retailers, manufacturers and wholesalers);
- bus operation could be argued to be less complex and varied than the total range of urban distribution operations;
- there is currently discussion of Bus Quality Partnerships becoming statutory - this is not currently being mentioned for Quality Partnerships for Urban Distribution.

However despite the differences these initiatives provide a useful basis for identifying the main issues in extending the partnership concept and applying it more widely in the context of urban distribution.

The existing initiative between the FTA, the Local Government Association and companies also helps to illustrate the role Quality Partnerships for Urban Distribution could play (FTA, 1999).

### **2.8.3 Attitudes towards Quality Partnerships in the discussion groups**

As already mentioned, most of those who provided a view were sceptical about the desire of central and local government to understand and help relieve the transport problems faced by freight transport and service companies, as the following comment indicates:

"Even if they asked you they don't listen to what they're told anyway."

However many participants felt that if central and local government were truly committed to achieving a better and more efficient operating environment for freight transport and service vehicles, the opportunity to meet with local authority representatives and to try to jointly find solutions and improvements would be most welcome. Some participants noted that the opportunity to meet with local authorities would allow both sides the opportunity to gain a better understanding of what each is trying to achieve. They felt that it could be very helpful in thinking through the likely impacts (in terms of vehicle operations and commercial impacts) of any new transport policies and measures before they are introduced.

Several participants did, however, tell us that they are extremely busy people and that if such initiatives required their involvement and participation at meetings and working groups they would have to be certain that it would ultimately result in worthwhile benefits and improvements for their companies.

Most of those we asked, felt that the notion of the local authority or highway authority (whoever has control over use of road, traffic regulations, time of day of pedestrian areas etc) looking to assist goods and service vehicle operations in urban areas, in return for goods and service companies reducing the environmental impact of their operations in some way (such as, investing in quieter, cleaner vehicles, driver training etc.) was a reasonable approach.

However, some participants remained unconvinced that improved dialogue and the Quality Partnership concept between business and local authorities would lead to any improvements in vehicle operations for freight transport and service companies. The following issues concerning the idea of Quality Partnerships were identified by participants:

- Quality Partnerships could work if all deliveries were made locally, but they are not, they are being supplied from all over the country using all different transport companies and vehicles.
- If one city introduces different vehicle requirements to another city, a national carrier/supplier will have significant problems in meeting these vehicle requirements. (e.g. you need a pink lorry in Norwich, a blue one in Cambridge and an orange one in Newmarket).
- Freight transport companies are already operating on tight margins, due of the price that their customers are prepared to pay for their services. Many hauliers are not able to afford to make further modifications to their vehicles in order to enjoy some operating incentive offered by the

- local authority. They will already be buying vehicles with economical engines, streamlined vehicles, and vehicles that depreciate the slowest.
- Local authorities need to be clear about what they want to achieve in urban freight transport policy terms. For instance, if they encourage the use of smaller lorries this will also mean more lorry trips.
  - Representatives from freight transport and service companies felt that it is unlikely that retailers, manufacturers, financial service companies would want to participate in Quality Partnerships. They feel that these companies are not concerned with the problems faced by freight transport and service companies, instead they tend to view themselves as customers.
  - Participants struggled to come up with initiatives that would, differentially, help goods and service vehicles. Instead they tended to identify measures that would help all road users, including all cars, such as easing bottlenecks. However, in some cases they felt that these issues were the most important actions to take and would help their companies most.
  - Participants felt that some of the initiatives that local authorities would want to consider are probably still some way away from being available (such as gas powered or electric vehicles).
  - Even when gas, electric etc vehicles are available, several of the companies we have interviewed would require sophisticated hybrid vehicles as they travel into the city from outside, so it would have to be a type of vehicle suitable for motorway travel as well as urban delivery work.
  - Some companies (which may be retailers, manufacturers, freight transport or service companies) may not be prepared to sit in the same room as their direct competitors and be completely frank about their business (therefore reducing the potential competitive clashes between the organisations involved would be quite important).
  - Policy makers need to obtain a greater understanding of current goods and service operations in urban areas.
  - London boroughs are not perceived as wanting to bring about easier parking which is what service companies require: "Local authorities would entertain the idea of sitting round a table talking but when it came to impact on their revenue that's where the conversation stops. We say 'dispensation', we say 'utility vehicle parking bays', straight away they say 'but that's less revenue'. These councils have got a split view of the world, especially since decriminalisation of parking. On the one hand, they benefit from getting revenue from a particular activity but, on the other hand, there are people within a local authority that think that having a lively thriving town or city centre requires businesses that can call on the services that they need when they need them. They would support that and they don't want everyone to go to Bluewater to do their shopping or everyone to move to Devon".

Unless Quality Partnerships for Urban Distribution are carefully planned and co-ordinated between different local authorities there will be different vehicle requirements to meet regulations in different urban areas. The following comment was made during a discussion group session:

"With the best will in the world they (local authorities) will all come up with different requirements. They may be only marginally different but sure as hell they are going to be different...The vehicle will have to be suitable to meet the requirements of each of the local authorities. Now I don't think there will be as many different requirements as there are local authorities, but some will concentrate on noise, some on emissions, some on colour etc. I think that there are some generics in terms of vehicle design but I think you are going to need variability."

This could have significant consequences for vehicle productivity and operational efficiency.

## **2.8.4 Conclusions and Unresolved Questions about Quality Partnerships**

Quality Partnerships for Urban Distribution should help to raise the profile of goods and service transport issues in central and local government considerations. While traffic levels and their impacts in British towns and cities have received growing attention in recent years, much of this has been

directed at public transport and private car traffic with relatively little consideration has been paid to road freight transport. Goods and service vehicles clearly play a fundamental role in the functioning of towns and cities, distributing goods and services to numerous locations that are vital to urban life. However, these vehicles are also responsible for a range of environmental impacts in urban areas. The goal is to find a suitable balance between economic and environmental pressures. There is a need to both improve the efficiency and quality of urban freight transport and logistics systems, whilst at the same time reduce the social and environmental costs of these operations. Both objectives remain of fundamental importance to the future sustainability of our towns and cities.

There are a number of issues concerned with Quality Partnerships for Urban Distribution that have to be resolved. These include:

- how to include goods and service companies not based in the urban area who do operate vehicles in the area. Maybe there is a need for a virtual partnership - linked by e-mail or an information network;
- the level of public funding available for policy measures, initiatives and enforcement that could come about as a result of the Quality Partnership;
- how to ensure that different towns and cities do not implement measures that, although efficient at a local level, are inefficient at a regional or national level - for example different types of vehicle requirements and restrictions in different towns and cities may increase total fleet requirements and trip numbers.

It is also important to bear in mind that effective Quality Partnerships for Urban Distribution will take time and effort to establish and it may be some time before they begin to yield results. The urban economy and the amount of freight movement it generates are closely linked. This has important implications for current policies aimed at regenerating our towns and cities. Regeneration implies increased demand for goods and services leading in turn to more freight movement - much or all of which will probably have to be met by the lorry. As a result if we want economically prosperous towns and cities together with fewer freight-related environmental impacts, it is clear that there is a role for greater collaboration between industry and policy makers. Quality Partnerships for Urban Distribution represent an exciting opportunity for dialogue and collaboration between local authorities, the freight industry, business communities, residents and environmental groups to help bring about more sustainable urban distribution.

## **2.9 Local authority-company dialogue in the project: the Freight Forum**

As part of the research project, the project team participated in a Freight Forum organised by Norfolk County Council and Norwich City Council. The Forum comprised relevant policy makers from the local authorities with responsibility for the Norwich urban area and invited representatives of freight, manufacturing and retail companies with a presence in Norwich. The Forum took place at the end of the project and its purpose was to present the research findings in order to instigate a discussion about the freight transport-related problems experienced by companies in Norwich. Policy makers from the County and City Councils explained to the participants that they would like to work with local business to find efficient solutions to existing freight transport problems. They presented their thoughts about future freight transport policy and then facilitated a debate in which the company participants were encouraged to identify the freight transport problems that they face. Company representatives were invited to give their views on the topics they would like to see policy makers address, and the specific freight transport policy measures they would like to see implemented. The session proved to be very successful, and it was decided that a Working Group consisting of business people and policy makers would be established to consider in greater detail the potential transport policy measures that would make freight operations more efficient. In addition, another Forum will be planned to report back on and discuss the ideas of the Working Group.

This Forum represented a new approach to freight transport policy making on the part of the County and City Councils, and was very well received by the business community. Obviously there is some

way to go before workable policy measures are identified and implemented in Norwich, but this local authority-business initiative should be capable of devising coherent policy measures that assist freight transport operations without increasing (and possibly in some cases reducing) the environmental impact of those operations.

### **3. Policy measures encouraging easier to perform and more efficient goods and service operations in urban areas**

#### **3.1 Introduction**

Policy measures that could be taken by central or local government that would potentially make easier to perform and more efficient goods and service operations in urban areas are discussed in this section. The work presented in this section is the result of individual company interviews and discussion groups sessions.

As well as making urban goods and service operations easier to perform, most of the policy measures discussed would also help to reduce one or more of the environmental impacts caused by goods and service vehicles. The interviews, discussion groups and other research activities that we have conducted as part of this project have helped us to form opinions about the relationship between policy measures and their potential impact on goods and service vehicle activity. These relationships between the policy measures discussed and the way in which they could potentially influence vehicle activity levels and patterns (and thereby change impact levels) are shown in Table 4. These relationships are not always clear cut, and, in some cases, we believe that a particular policy measure could lead to an increase, decrease or no change in vehicle activity. This is indicated in the table where appropriate.

**Table 4: Relationship between policy measures (that could make freight operations easier to perform) and vehicle activity**

Policy measures:	Goods and service vehicles/vehicle activity in urban areas									
	Total vehicle trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicle using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
Relaxing loading/unloading time restrictions	○	↓	○/↑	○	○	↑	○	○	○/↑	○
Relaxing goods vehicle size/weight restrictions	↓	↓	○/↑	○	↑	○/↓	○/↑	○/↑	○	○
Allowing goods/service vehicles into pedestrianised areas at any time	○/↓	↓	○/↑	○	○	↑	○	○	↑	○
Improving on-street loading/parking facilities for goods and service vehicles	○	○	○	○	○	○	○/↓	○	○	○
Allowing goods/service vehicles to use bus lanes	○	○/↓	○	○/↓	○	○/↓	○	○/↓	○	○/↓/↑
Allowing night goods and service vehicle access if not previously permitted	○/↓	○/↓	○	○/↓	○	○/↓	○	○	↑	↑
Car use reduction strategies	○	○	○	○/↓	○	○	○	↓	○	↑
Better enforcement of car parking regulations (but what about cars that are being used for service/commercial activities)	○	○	○	○	○	○	↓	○	○	○
Improved traffic/roadwork information	○	○/↓	○/↑	○/↓	○	○	○	○/↓	○	↑
Road infrastructure/building/bypasses	○/↓	↓	○/↑	○/↓	○	○	○	○/↓	○	↑
Improved road signing	○	○/↓	○/↓	○/↓	○	○	○	↓	○	○/↑
Lorry routes (could be mandatory or advisory)	○	○	○/↑	○/↓	○	○	○	↓	○	○/↑

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

**Table 4: Relationship between policy measures (that could make freight operations easier to perform) and vehicle activity (continued)**

Policy measures:	Goods and service vehicles/vehicle activity in urban areas									
	Total vehicle trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicle using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
Improving access to back of premises	○	○	○	○	○	↓	↓	○	○	○
Yellow boxes - traffic management	○	○	○	○	○	○	○	○	○	↑
Traffic calming - traffic management	○	○	○	○	○	○	○	↓	○	↓
Traffic signal sequencing	○	○	○	○	○	○	○	○	○	↑
Moveable width restrictions	○	○	○	○	↑	○	○	○/↑	○	○
Policies to improve public transport	○	○	○	○/↓	○	○	↓	↓	○	↑
Designing goods/service vehicle facilities into building design/planning permission	○	○	○	○	○	↓	○	○	○	○
Encourage relocation of premises to less dense areas	↓	↓	↓	○	○	↓	○	↓	○	○
Park and ride depositories	↑	↑	○	○	↓	○/↑	○	○	↑	○
Urban transshipment centre (see Section 3.2.1)	↑	↑	↓	○/↑	↓	○/↓/↑	○	○	↑	○

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

In some discussion group sessions participants were shown lists of measures that could potentially help to make easier to perform and more efficient goods and service operations in urban areas. The following conversation took place in one session when the participants were shown a list:

“If you could incorporate all those measures into a city centre I think we could reduce some of our costs!”

*(Manager from freight transport company)*

“The only problem with that is that as the measures are heavily weighted in favour of business traffic and at the same time restricting passenger traffic, it might reduce people’s need or desire to come into the city centre to shop and buy goods.”

*(Regional manager for retailer)*

“If some or all of these measures were introduced either your (the freight transport company) service level would go up or your costs would go down or a little bit of each, but would you actually be able to offer a better level of service as it seems pretty good at the moment?”

*(Facilitator)*

“Eighty-two percent of our parcels are delivered next day before 1300, that is good and how can you improve that? Lift it up by 10% perhaps. But we would see these measures as cost savings, taking vehicles off the road, needing fewer vehicles to do the same amount of work.”

*(Manager from freight transport company)*

“Would it reduce the number of vehicles you required dramatically?”

*(Facilitator)*

“If you introduced it to every town and city centre perhaps it would. If it was applied in say Exeter it would probably reduce the vehicles required from about 12 vehicles to 10 vehicles.”

*(Manager from freight transport company)*

During an interview with the manager of a freight transport company with a national network, he made the point that he felt that there is a need for consistent freight transport policies and regulations at a regional level. At present his company has to organise and operate the urban collection and delivery operations from each of their depots like separate businesses with very different working practices, in order to overcome all the differing regulations and restrictions that exist in towns and cities in the same region. The manager felt that, although he is the manager of the Norwich depot, at present he could not possibly run another depot in the same region for this reason, and that this is very inefficient from a commercial perspective. He believed that co-ordinated regulations and restrictions concerning vehicle operations within a region or maybe even nationally would help companies such as his to improve their distribution efficiency and general commercial efficiency.

### **3.2 Allowing goods/service vehicles into pedestrianised areas that currently have vehicle access time restrictions**

Many goods and service company representatives have informed us during the research that the effects of existing time restrictions on when their vehicles can enter pedestrianised urban areas, together with time constraints imposed by their customers, place severe pressure on their operations. Several suggestions about how this could be improved were proposed by those participating in the research. These included exemption schemes for goods and service vehicles, which allowed these vehicles to enter areas that other vehicles are prevented from entering at certain times. Such an exemption scheme would require some way of identifying exempted vehicles, such as badges displayed on the windscreen. Problems with such a scheme could include which vehicles were to be

granted exemptions (i.e. would all goods and service vehicles be exempted, or just all lorries and vans, if an exemption badge was required how would goods and service vehicles travelling long distances to the urban area on an infrequent basis obtain such a badge, etc.). If the exemption scheme was limited to only vehicles identifiable as commercial vehicles (i.e. lorries and vans and cars with company liveries), then such a scheme would be easier and less costly to implement and administer. These exemptions could, of course, be permitted either all day or only at certain times of day.

Whilst welcoming the concept of allowing goods vehicles into pedestrianised areas, the manager of one of the freight transport companies we spoke to was concerned about how the company would need to design their vehicles if such exemptions were granted:

“There is nothing worse for us as a company than a member of the public seeing a vehicle climb the pavement and go down a pedestrianised area. It looks very aggressive.....You've got a potential image problem there, so you have to choose the right sort of vehicle to operate in a pedestrianised area if you are going to relax restrictions in pedestrianised areas. If the approach was to go to, say, electric vehicles then those types of buggies they use around Gatwick Airport would be more attractive to the public than seeing a transit or a 7.5 tonner climbing the pavement and going through the bollards because it doesn't look very good”.

*(Manager from freight transport company)*

### **3.3 Improving on-street loading/parking facilities for goods and service vehicles**

Virtually all respondents were of the opinion that more designated on-street loading bays and the introduction of on-street service vehicle bays would be of benefit to their operations. These measures would help to reduce delivery/servicing times and also reducing the amount of unnecessary mileage currently performed by drivers looking for appropriate parking spaces.

Some representatives of goods and service companies did, however, feel that on-street loading/bays would only be useful to them if the bays were sufficiently near to the premises that their vehicles have to visit. This is due to the weight of the goods, tools or parts they have to carry from the vehicle to the premises. Obviously the distance that a driver or engineer can feasibly walk from the vehicle to the premises that they are visiting depends on the goods to be delivered, or the function of the engineer and what they need to carry in terms of equipment and parts for the task in hand. For some goods and service companies which transport heavy items it is not practical to park anywhere other than directly outside the premises to unload the vehicle; for other companies greater distances would be feasible:

“For our staff I think you are looking at a maximum distance of 200 yards because as he said you'll go to a premise and find you've forgotten a tool you need, then that you've forgotten something else. Over time, parking in bays 200 yards from the premises would make an engineer much more aware of what he requires on the premises. At the moment we park as near the premises as possible so that if a warden comes along we can rush out and jump into the van and drive off; and we also make several trips back to vehicles when we have forgotten something we need. I have a go at some of our guys because they park on a double yellow line because it's right outside the customer's door. I would turn round and say to the warden let him have it, give him the ticket, because if he was in his own car he wouldn't have parked there. That's taking liberties”.

*(Service engineer)*

“For us the distance we could walk depends on the size of the delivery; is it a jiffy bag, a box, a pallet? With a pallet it's got to be pretty close!”

*(Goods vehicle driver)*

Obviously goods and service companies would like to see the introduction of goods and service vehicle bays outside every premises but this is impractical. Instead there could be strategically placed bays that could serve several frontages.

As discussed in Working Report 2, servicing-related problems can be as serious to premises as unreliable or failed good deliveries (in some cases such as EPOS failure in shops, equipment servicing can be far more serious than missed goods deliveries). At present no provision is made for on-street service vehicle parking in urban areas in the UK; instead service vehicles are subject to the same parking regulations as private cars. As the engineer/provider providing the service is not usually continually moving goods between the vehicle and the premises for the entire duration of the time that the service vehicle is stationary, it does not count as a loading/unloading activity. The vehicle is not, therefore, allowed to park in the same on-street locations as used by goods vehicles for loading/unloading (as the activity is not defined as loading/unloading). Obviously, it is possible for the service engineer/provider to use the existing on-street unloading arrangements when they arrive at the premises to unload tools and parts but it is then usually necessary for them to move the vehicle and park it elsewhere while they perform the service. From our discussions the following ideas emerged for service vehicle parking:

- service engineers could be allowed to “feed” parking meters (i.e. return to the parking meter and pay more money so that the vehicle could remain parked there – this is not currently legal)
- free on-street service vehicle parking bays could be introduced
- on-street service bays with parking meters could be introduced (it would be helpful if the meters were swipe card-operated rather than coin-operated to remove the need for service personnel to carry large quantities of change and to overcome the problem of service personnel running out of money)
- dedicated service vehicle parking bays in public car parks close to the entrances could be introduced
- some alternative system of parking exemptions for service vehicles could be introduced

### **3.4 Relaxation of loading/unloading time restrictions**

Relaxation of loading/unloading restrictions for goods vehicles and parking for service vehicles would be welcomed by participants. However this was viewed as extremely unlikely to happen in the future.

### **3.5 Allowing goods and service vehicles to use bus lanes**

The introduction of bus lanes in towns and cities in the UK tends to have had a negative effect on goods and service vehicles driving into, out of and around urban areas according to the goods and service companies that have participated in the study. It has, for example, resulted in key arterial routes into the city which used to be dual carriageways becoming single carriageways, and has slowed vehicle flow speeds in and out and around the city.

Many respondents felt that goods and service vehicles should be allowed to use bus lanes, either at all times or at certain times of day. The following comments by goods vehicle drivers reflect this:

“I think Norwich City Council has got to allow us to go into bus lanes at certain times....”

*(Goods vehicle driver)*

“I think that goods vehicles taking goods to the shops should be allowed to use bus lanes. I think they should be bus and goods vehicle lanes. That would save a lot of problems, it would enable us to get into these places, get the deliveries done and clear the areas”.

*(Goods vehicle driver)*

“Bus lanes are under utilised and should only exclude vehicles during rush hour and allow goods vehicles to use them at other times”.

*(Goods vehicle driver)*

The respondents believed that their journey times would be reduced and would become more predictable if their vehicles were allowed to use bus lanes. When asked if being able to use bus lanes would actually benefit goods and service vehicles if bus dwell times at bus stops are presently lengthy (as suggested by some respondents), they gave the following replies:

“You still wouldn't be stuck in the traffic”.

*(Goods vehicle driver)*

“It would be worth it.”

*(Goods vehicle driver)*

“In the bus lane I want to use there are no bloody buses anyway!”.

*(Goods vehicle driver)*

It was generally felt that if a bus was stationary at a bus stop this would not present a problem to goods and service vehicles, as they would simply pull out and move round the bus when necessary.

Some respondents from freight transport companies felt that the use of bus lanes would have to be restricted to certain sizes of goods vehicles only, such as over 3.5 tonnes for example, (and not permit other goods and service vehicles to use them). They believed that, without this restriction, there would be too much traffic in the bus lane for it to function properly and it would become equally, if not more, congested than the other vehicle lanes.

Some respondents from freight companies felt that rather than establish joint bus and lorry lanes it would be better to introduce no-car lanes which could be used by buses, taxis and goods vehicles:

“The ideal may be two no-car lanes and one car lane to discourage the use of cars”.

*(Transport manager from wholesaler which makes deliveries)*

It was recognised by some respondents that the illegal use of the bus lane would have to be monitored and enforced to prevent the use of the lane being abused, either by vehicles not permitted to use it or by vehicle using it at times when they were not permitted to use it:

“You could allow commercial vehicles to use bus lanes at certain times. But then you have the problem of administering these things.”

*(Transport manager from wholesaler which makes deliveries)*

However a few respondents felt that freedom to use bus lanes would not really be advantageous to them or that it would impede bus flow to such an extent that it would be detrimental to public transport services:

“The idea of bus lanes is to keep buses moving. When you get good vehicles in the lanes as well they will stop in the lanes to make deliveries and then hold the buses up. Then you will get fewer people using the buses. So I think it would be a more negative than positive measure.”

*(Manager from freight transport company)*

“I think a lot of the bus lanes are situated outside the ring road and the on the way into Norwich and I think any system would be abused with every commercial vehicle using them.”

*(Manager from freight transport company)*

Allowing goods vehicles to use bus lanes raises questions about whether cyclists and bus users are likely to view such a measure as problematic. They could potentially take the view that it is the handing back of public transport infrastructure to the freight sector and it may therefore be unpopular with these road user groups. It may also be important to local authorities that, if goods vehicles were allowed to use bus lanes, these vehicles would be those operated by reputable freight companies that had entered into Quality Partnerships with the local authority. However policing the latter would be very time consuming and difficult and would require the introduction of additional vehicle detection equipment.

The service companies that took part in the study want to be able to enjoy the benefits of using bus lanes in the same way that freight companies could be permitted to do so. But, as many of them use light goods vehicles or cars, it is somewhat unlikely that policy makers will relax constraints to allow all of these types of vehicles to use bus lanes.

“It wouldn't help us as a service company as we use cars!” (i.e. private, unmarked cars)  
*(Service engineer)*

### **3.6 Car use reduction strategies (for non-essential car trips)**

Most participants felt that it would be very advantageous to goods and service vehicle operations if national or central government could reduce the number of non-essential car trips in urban areas. One participant noted that:

“When we had the bombing campaign in London a couple of years ago and cars weren't allowed into central London, (our company's) vehicles were still allowed in. It was brilliant for us we got a lot more jobs done, everything was done quicker and easier. And everybody else still got to work alright”.

*(Manager from service company)*

Many participants were of the opinion that reducing the number of car trips that take place in city centres is the only way to significantly improve the current road traffic problem in urban areas. Most freight company representatives who expressed an opinion tended to feel that an outright ban on cars was necessary, either permanently or at certain times of day rather than the use of traffic calming and management schemes:

“I think that banning cars is the only way you're going to keep traffic out of the city. The Council can chat about it, and you can have meeting like this saying 'what do you think we should do - open this road, close that road, let you use bus lanes?', for commercial drivers that's fine I think, but if you're trying to keep traffic out the city I think you've just got to ban it”.

*(Goods vehicle driver)*

It may well, however, not be necessary to ban all private cars at all times. If current car traffic levels could be reduced by, say, 10% or 20% this may well result in a sizeable reduction the traffic and parking problems experienced by goods and service companies, and the number of incidents of severe traffic congestion may also fall. Targeting non-essential car trips could well provide a reduction of this order in urban car traffic.

However in historic cities such as Norwich and parts of London with residential property close to and in the city centre the banning of car travel would be problematic for those living in these central areas:

“The trouble with banning traffic in the city (Norwich) is that a good 30% of residential areas are inside the city limits”.

*(Goods vehicle driver)*

Some freight company respondents believed that if all cars were banned from city centres during the first part of the morning this would allow all goods deliveries to be made quickly and effectively:

“If they allowed lorries to clear all junctions up to a certain time in the morning, say 10 o'clock in the morning or whatever, and stopped cars going down certain roads up to 10 o'clock in the morning you'd solve the problem completely. Because cars would then be forced, if they need to get to work for early morning, to use the park and ride and there's enough of them about”.

*(Goods vehicle driver)*

The idea of trying to encourage higher car occupancy levels was also suggested by several participants. Ideas provided by participants of how this could be achieved included banning cars with less than a certain number of passengers, by allowing cars with a certain occupancy level to use dedicated lanes, the introduction of no-car lanes and the use of road user charging systems. Obviously high quality public transport services and the use of park and ride schemes also have an important role to play in reducing car trips:

“I think the problem is that so many cars only have one person in them”.

*(Service engineer)*

“Why can't we introduce high occupancy lanes in UK like they have in USA? - cars can only use a particular lane if they have 3 or 4 people in the vehicle. Also lanes could be reallocated when they are needed” (i.e. use more lanes for getting into the city rather than out in the morning and vice versa in the evening).

*(Transport manager from supplier that makes deliveries)*

“Fewer cars on the roads would be great for us as a company but the current public transport isn't good enough at the moment”.

*(Manager from service company)*

If cars were to be banned from certain urban roads or from entire city centre areas this would at present cause problems to those who use cars to either provide services or transport goods. These companies would either have to acquire vehicle types that were allowed into these restricted areas (such as vans for example) or alternatively their companies' cars would have to be granted with exemptions that permitted them to enter the restricted areas. The following conversation addressed this issue:

“I favour trying to reduce the number of cars coming into cities and giving exemptions to vehicles that need to be there. Service companies could be issued with passes for cars, lorries and other vehicles.”

*(Manager from service company)*

“Would your company think about changing from cars to vans if cars were treated more harshly?”

*(Facilitator)*

“Yes, I'm sure it would”.

*(Manager from service company)*

### **3.7 Rethinking existing parking regulations for goods and service vehicles**

Representatives from service companies that we interviewed and that participated in the discussion groups tend to view parking their vehicles as a greater problem than traffic levels:

“Traffic flow isn't the big problem for people around this table, the problem is all about parking. The difficulties really start when we stop the vehicle”.

*(Manager from service company)*

From our conversations with service companies operating in London, where responsibility for parking regulations and enforcement have been transferred the local authority, it would appear that the London boroughs need to consider more carefully the parking needs of goods, and especially, service vehicles. At present parking attendants have no discretion in whether or not to issue parking fines, and the clamping and towing away of these vehicles has a significant financial and operational impact on these companies (see Section 3.3).

In addition, the freight transport companies involved in the project felt that in all urban areas (whether or not the responsibility for parking is transferred to the local authority) there is a need to continue to ensure that cars that are parked, rather than unloading, are not parked in loading bays or on stretches of road where parking is illegal but loading/unloading is permitted.

### **3.8 Improved traffic/road work information**

Some goods and service companies felt that improved traffic and road work information would be helpful in planning and operating their vehicle fleets and would potentially enable them to operate these fleets more efficiently. Many of the goods and service companies interviewed told us that they currently have no roadwork or traffic information and that such information only gets back to the company from drivers and engineers who have experienced difficulties. However these companies could readily appreciate how useful better quality and more rapidly transmitted information could be to them. The supply of this information could be organised by local authorities and/or private companies. This type of information includes several categories:

- details of forthcoming road works and road closures for special events (which can be supplied on radio, TV, the Internet, in newspapers and factsheets issues to a mailing list);
- roadside information about road works and traffic situations (which can take several forms from traditional printed boards through to sophisticated computerised screens);
- real time information about traffic levels and problems (which can be supplied on radio, TV, the Internet, and direct to specialist in-vehicle equipment).

In order for this information to be as effective as possible it is also necessary for companies to invest in in-vehicle communication systems so that the companies' traffic planners can communicate with drivers and engineers during the course of their working day and alert them to specific problems that they may encounter (see Section 5.2.30). There is also the possibility that real-time traffic information could be fed directly into goods and service companies' routeing and scheduling software (in companies where this type of software is used), resulting in dynamic routeing and scheduling systems, again potentially helping to reduce journey times and improve journey reliability, thereby allowing each vehicle to be better utilised.

Local authorities have an important role to play in making information about forthcoming road works and closures available as soon as possible. The comments of one service company manager about his attempts to obtain details about road closures for street parties during the Millennium festivities tend to suggest that there is room for improvement:

“Actually I've been talking to (name of local authority) because we want to strategically place engineers over the Millennium period as the city is going to be testing computers, phones, modems etc. and we therefore want as many engineers as possible deployed in central London ready to assist. So I've asked them for all the routes where there are going to be street parties, marches, parades etc. and hence road closures, but they won't even play ball on this. They tell me that they have about 1000 street parties up for nomination and they are not even going to consider which to allow and which to turn down until much later”.

*(Manager from service company)*

### **3.9 Road infrastructure improvements and building**

In the case of Norwich, several respondents felt that the road infrastructure could be improved or in some cases new roads or links could be built to help ease traffic problems in specific locations. In particular, extending the Southern Bypass in order to make a new, complete outer orbital route around Norwich was suggested on several occasions. It was felt by these respondents that it would prove extremely helpful to them in cases when their vehicles need to travel from one side of Norwich to the other and would take some traffic pressure off of the existing inner and outer ring roads. Several respondents felt that the existing outer ring road is unsuitable for transiting Norwich, due to the existing traffic levels at peak times and also because the company's premises are several miles outside the city and the outer ring road is too near the city centre for this purpose.

Also several companies with premises located on industrial estates in Norwich felt that the current access roads were either insufficient at peak times (as they were single carriageways) or that additional access routes to the estates were needed.

### **3.10 Road signing**

Road signing was mentioned by several participants who felt that signing could be far more prevalent and much better planned than it is currently. While this tends not to present too much of a problem for drivers and engineers who are familiar with the urban area it does cause difficulties for drivers and engineers who are less familiar with it, maybe visiting the town or city on an infrequent basis.

### **3.11 Lorry routes**

One respondent from the retail sector felt that defined, approved signposted lorry routes for goods vehicles (especially for heavy goods vehicles) travelling to and from Norwich, could help goods vehicle traffic movement. It may also, he felt, relieve pressure from other routes and at the same time prevent large goods vehicles from using inappropriate routes. He believed that this should involve the introduction of a couple of such routes, improving them for lorry traffic (in terms of the junction design and layout, making corners easier to turn into, traffic light sequencing etc.) and introducing good signing of the routes. Once these routes were in place it would then be possible to introduce further traffic calming schemes on other roads.

### **3.12 Improving access to back of premises**

One freight company representative thought that there may be the potential to improve vehicle access to access roads behind shops and other commercial premises where such roads exist in Norwich. He felt that this would be extremely helpful in terms of delivery and collection time reliability.

### **3.13 Yellow boxes - traffic management**

Several goods vehicle drivers felt that more yellow boxes should be marked at junctions with traffic signals in Norwich in order to prevent car drivers from blocking traffic moving in other directions:

“They could introduce more yellow boxes especially at boundary lights and at the ring road at the top of Newmarket Road, to stop people sitting in the box unless their junction is actually clear and reinforce this with cameras to prosecute offenders. At the new Asda at Whiffler Road, and the B & Q on the boundary, the drivers come across the lights at Aylsham Road even though they can't get into their road and block the entire junction”.

*(Goods vehicle driver)*

However another driver felt that even at junctions at which yellow boxes have been introduced, this has not prevented other road users from entering the box and hence blocking the traffic:

“For example the junction at Rouen Road, coming onto Rose Lane has a yellow box junction, and people coming out of Rouen Road and up Rose Lane all have the same attitude that they are not prepared to wait for the next light. They know they can't clear the box junction but they still enter it”.

*(Goods vehicle driver)*

Therefore the use of cameras may well be required in conjunction with yellow box markings to help enforce the regulations.

### **3.14 Traffic calming**

Goods and service vehicle drivers and engineers accepted that traffic calming measures are required in residential areas and other locations where many children are on the streets in order to prevent rat-running and to slow down drivers:

“They're a pain (traffic calming measures) but they're essential in residential areas.”

*(Goods vehicle driver)*

“It's slowed traffic down and made it safer for kids”.

*(Goods vehicle driver)*

### **3.15 Traffic signal sequencing**

Several respondents noted that the current sequencing of traffic signals at junctions and the linking of traffic signals in Norwich could be altered so as to improve the flow of vehicles on main routes into, out of and around the city. This measure would obviously assist all road users on these routes:

“Several of our company's drivers who come to the Norwich area from other depots are all amazed by traffic signals in Norwich. Those from the London depot say “we've got so much traffic in London but when the traffic lights stop everywhere is blocked. Here you've got 2 miles of road with 20 traffic lights in it and no cars there because they have all stopped at the individual traffic lights”. I think the traffic lights are often set to hinder rather than help the flow of traffic through them here in Norwich especially on the ring road. You'll sit there at red and there is no traffic crossing from the other directions that have green but they will hold our traffic on red for ages”.

*(Manager from freight transport company)*

Some respondents also felt that the introduction of dynamic traffic signal sequencing would be of benefit to traffic flow in Norwich:

“The traffic lights seem to be on fixed timings rather than relating traffic light changes to the presence of traffic”.

*(Service manager for retailer)*

“At traffic light junctions even slip roads seem to get as long on green as major roads”.

*(Manager from freight transport company)*

### **3.16 Moveable width restrictions**

Several drivers felt that rather than using permanent, fixed width restrictions in Norwich, the local authority could introduce moveable width restrictions, so that if a vehicle wider than a given size has good reason to need to access the road the driver could telephone the local authority and ask for the width restriction to be opened to allow the vehicle through.

### **3.17 Public transport policies**

The majority of those interviewed and participating in discussion groups felt that it was necessary for public transport services to be improved if people were to be persuaded not to use their cars for trips in Norwich and London. Retailers from Norwich city centre who participated in discussion groups are concerned that, as the road traffic situation in the city centre worsens, they will lose customers to out-of-town retailers, and are therefore keen to see improvements in public transport services for their customers, as the following comments illustrate:

“I think the bus services in Norwich are very poor. The councils are always saying please leave your car at home and come into Norwich on the bus but I do not think the bus services are efficient enough. They don't run to timetable.....Now they are talking of cutting bus services as they haven't enough drivers. This encourages more people to use cars and more traffic on the roads”.

*(Retail manager)*

“A lot of people tell me the buses (in Norwich) don't start early enough to use them to get to work.”

*(Retail manager)*

“There should be park and ride schemes in every city and then bring the public in by electric trams for free”.

*(Manager from freight transport company)*

“(What is needed is) really good public transport infrastructure which is really attractive, and high quality”.

*(Regional manager of retailer)*

Norwich has a substantial park and ride infrastructure. However several respondents felt that something needs to be done to improve people's, especially shoppers, usage of it. The park and ride schemes in Norwich were identified as being operated in a manner that does not suit some people's travel needs:

“The park and ride doesn't suit a lot of people as they live within the city boundaries so they would have to drive out to get to the park and ride”.

*(Retail manager)*

“I find park and ride frustrating because if I finish work by 6.30-7pm they are shut by then. They only work from 9-5.30pm”.

*(Transport manager from wholesaler which makes deliveries)*

In some other cities park and ride schemes are operated far later in the evening. In Oxford for example they operate until 11pm. Several comments were also made about the current charging system used for park and ride schemes in Norwich being too high including the following:

“The local authorities charge for the service (in Norwich) whereas in Leeds it's free. If it was free in Norwich a lot more people would use it. Car drivers have already paid road tax, so why would they want to pay again for the park and ride to go into the city?”

*(Manager from freight transport company)*

Respondents also mentioned that the price of using a car park in Norwich was in many cases lower than the price charged to use the park and ride and that this price differential was probably a key factor in the use of the car for trips in and around the city centre. A greater financial incentive (either in the form of lower fares and park and ride parking costs or in the form of more expensive city centre parking) would help to encourage greater usage of public transport and park and ride schemes in Norwich.

Trips to school were also identified as having the potential for modal switch from car to public transport:

“More could be done to bus children into school. At present from 3.30 to 8pm the roads are full of cars each carrying one child. If there was some safe method of getting them there with the bus perhaps that would cut the traffic down no end”.

*(Goods vehicle driver)*

Several respondents in Norwich and London felt that policy makers should treat goods and service vehicles in the same way as they treat other vehicles performing a service such as taxis and buses. It was felt that policy makers fail to recognise the importance of goods and service flows and that vehicles facilitating these flows should receive equally lenient treatment as buses and taxis.

### **3.18 Park and ride depositories**

One of the major freight-related problems of park and ride schemes is the issue of how shoppers get any bulky or heavy purchases made at shops in the city centre back to their cars in the park and ride facility. Carrying such items on buses is impractical and unattractive to most people.

Local authorities could either themselves, or in conjunction with city centre retailers and freight companies, develop park and ride goods transfer schemes with depositories at the park and ride car park. In this system customers' purchases would be transported from the shop to the park and ride depository by a freight transport company, and the customer could then collect their goods from the depository when they arrived back at the park and ride car park on the bus. Marks and Spencer implemented this type of scheme last Christmas for their Cambridge store, and the park and ride depository even had chilled and frozen food capabilities. Customers were offered the service of having their goods loaded into their cars by a member of staff if they wished.

Rather than each individual retailer implementing such a scheme, it would be more efficient if local authorities took the initiative and worked with retailers to devise a shared depository infrastructure and transport system. A shared scheme would potentially generate far fewer goods vehicle trips between the shops and the park and ride depository than would separate arrangements put in place by each large retailer.

The logistics of organising this transfer of goods from shops to the park and ride depository will represent a significant challenge as customers will want to be able pick up their goods immediately when they arrive back at the park and ride. One freight transport company manager who participated in a discussion group session said:

“That's a distribution problem I wouldn't like to have to solve. We can't get the people in and out of cities let alone have the goods waiting for them when they get there!”

*(Manager from freight transport company)*

As well as using park and ride depositories, a number of other platforms could also be used for temporary storage and collection points for goods purchased by customers (either in person, by telephone, fax or Internet), which they could then collect by car at their convenience. These include railway stations, bus stations, city centre, out of town and suburban depositories, and petrol station forecourts.

### **3.19 Designing goods/service vehicle facilities into building design**

The goods and service companies that participated in the study all explained that it would be much easier for them if all premises that they visit had off-street loading/unloading and parking facilities. As well as making the operation easier for goods and service companies, off-street facilities also help to reduce the traffic disruption that can be caused by goods and service vehicles that are loading/unloading or are parked on-street. Local authorities could insist upon off-street facilities being designed into the building design at the planning stage where the space for such a facility exists.

However many existing city centre premises do not have sufficient space for off-street vehicle facilities and there are probably relatively few premises where such facilities could be retrospectively fitted.

Where off-street facilities do exist, but are not made available to goods and service vehicles visiting the premises, local authorities could develop imaginative fiscal measures to encourage such usage.

### **3.20 Encouraging relocation of premises to less dense areas**

Some goods and service companies operating in London felt that the current density of building has already exceeded the level that can be efficiently supplied with goods and services. However, the likelihood is that building density in London will increase further in future:

“Buildings that are only 30 years old are being knocked down to build one twice as big. Why not encourage more businesses to move elsewhere or put a ban on new developments or redevelopments”.

*(Goods vehicle driver)*

However it is unlikely that local authorities will begin to attempt to reduce building densities in London and other cities, or actively try to encourage companies to relocate to greenfield sites.

### **3.21 Urban transshipment centres**

Many of the participants involved in the research viewed urban transshipment centres as an approach that would hinder urban freight transport. However some saw it as an approach that may well have a role to play in making urban freight transport more efficient than it is at present. The following comment was made by a respondent in favour of the urban transshipment centre concept:

“I believe that this is what is needed, one central, communal depository, where everything is taken into. Because the amount of lorries running about Norwich that are only about a quarter of half full. And there's nothing we can do about it, it is just the nature of our business. (The vehicle leave their depots fully loaded but as they make more deliveries to customers their loads are reduced). A prime example with us is that on a Friday the driver may start delivering at Yarmouth and finish in Norwich, by the time he gets to Norwich he's only got half a vehicle load left and he has to come into the city. And no doubt there's many other wholesalers, distributors, manufacturers, carriers doing exactly the same as we are”.

*(Transport manager from supplier that makes deliveries)*

From the discussion groups it would appear that the transshipment centre solution might well be better suited to some types of goods and vehicle movements than others. It is not likely to be efficient for perishable products, vehicles that are already carrying full-loads for a single destination and locations outside the city centre. However in the case of non-perishable goods for delivery to city centre retail premises it may well have some merit. It could well deal with many products that are currently delivered to shops in the high street such as boxed clothing, shoes, leisure (books, records, compact discs etc.) Many goods sold in city centre shops are not actually delivered into the shops instead they are sent direct from warehouse to the customer's home (such as white goods, furniture etc.). The following conversation addressed the issue of load size:

“It probably wouldn't be sensible from an environmental point of view to make vehicles with full loads for a single drop point at night or early in the morning to use the transshipment centre. It can't be done much more efficiently than it already is. To break those loads down wouldn't be beneficial”.

*(Facilitator)*

“That's right it would be a nonsense. Also half loads or full loads from a manufacturer to a store shouldn't be changed either - it would mean double handling, extra costs etc.”

*(Manager from freight transport company)*

A discussion group session that looked specifically at the book supply chain felt the transshipment centre approach could be used to provide the same or better level of service without necessarily

increasing distribution costs. This is because in the case of books they are parcelled up and delivered to the book shop in many different consignments from many different suppliers. They are not generally delivered in large quantities or in full vehicle loads.

In the case of deliveries for city centre premises in pedestrianised areas, the transshipment centre could be located in the city centre, right on the edge of the pedestrianised area. Goods would be delivered into this centre by normal goods vehicles. These deliveries could be made at night so that they avoid the traffic and loading problems normally associated with city centre deliveries during the day. Goods could then either: (i) be delivered to premises from the transshipment centre by environmentally-friendly vehicles (such as electric vehicles), or (ii) staff from the shops could collect goods from the centre at a time that suits them. The environmentally-friendly vehicles operating from the transshipment centre could be exempted from any existing vehicle access restrictions and instead could be allowed to operate in the high street at all times.

Alternatively, deliveries from the transshipment centre to the premises could be made during the night. However this would probably require that either: (i) the receiving premises made keys available to the freight transport company making the deliveries (and may also involve redesigning the premises so that, as with banks, it is designed so that inside the door there is an airlock between two doors, and the freight transport company only have keys to the outer door), or (ii) the receiving premises have a member of staff on site to receive the goods (but even then, unless the receiving premises already has staff working all night, it is unlikely to be happy with the freight transport company turning up at any time during the night. Instead it will request a specific delivery time and employ someone to be on-site at this time - obviously the freight transport company would need a sufficient level of demand for night deliveries to make this service commercially viable and to achieve a level of consolidation that would prevent the need for a large number of trips and vehicles, and poor load factors).

Those retailers and other premises which agreed to use the transshipment centre could be granted full exemptions to receive deliveries from the transshipment centre at all times, whereas those retailers and other premises which decide not to use the transshipment centre would be limited to existing vehicle access time restrictions or possibly an even more stringent regime.

The owners/managers of premises that received deliveries from the transshipment centre would obtain several key advantages from using the system:

- They could use it as a temporary storage space that would supplement their existing, in many cases limited, on-site storage facilities. If a premises had a lot of stock due in and could not cope with it or did not want it all on-site at once, they could choose to leave it in the transshipment centre as use the centre as a short buffer for a few days;
- They would have the peace of mind that comes from knowing that the deliveries have already successfully been made to a location only a few hundred metres away from their premises during the night (there is no risk of the delivery being delayed in traffic or adverse weather conditions the following morning);
- They would have more control over the final movement of the goods from the transshipment centre to the premises than they did previously. They could choose to either have the goods delivered at a suitable time or collect them themselves at any time of day they would like (they are no longer subject to vehicle access time restrictions). Urgent deliveries could be made to the premises at any time of day from the transshipment centre in a way that they cannot at the moment in pedestrianised areas.

Freight transport companies could also benefit from the transshipment centre because, if they were delivering goods to the urban area from a long distance away, they would no longer have to worry about arriving in the city too late to make the delivery before vehicle access time restrictions come into force (as happens at the moment). It would also reduce the inefficiencies caused by congestion that are experienced on many freight trips:

“It's true you're not earning money when you're sitting behind the wheel in traffic”.  
(*Goods vehicle driver*)

Moreover the freight transport companies dropping goods into the transshipment centre would no longer have their vehicles and drivers spending time unproductively in congestion and traffic jams, receiving parking tickets and wasting fuel. In addition they would not need to meet the potential vehicle requirements that may be introduced in urban areas (such as, for example, small alternatively-powered vehicles). All of these factors would help to increase the operational efficiency of the freight transport companies that use the transshipment centre.

The number of vehicles allowed to operate from the transshipment centre would have to be controlled so as to prevent numerous vehicles driving up and down a pedestrianised area when large numbers of pedestrians were present. Also, the retailers may have to accept that they would not all be able to receive their deliveries from these vehicles at 10am. Instead deliveries could be made up until, say, midday or 1pm. However shops could choose to send their employees to the transshipment centre to collect the goods themselves at any time if they so wished.

The transshipment centre would not have to be very large if the turnover of goods was relatively high. The centre could be operated by the local authority, a local business consortium or by a freight transport company. There would probably have to be a tender system for the operating of the transshipment centre, with a review every few years.

The transshipment centre would also be used for goods being sent in the reverse direction from premises in the city centre to somewhere outside the city. Other customers could also deposit parcels and packages that they required to be shipped at the new transshipment centre and this would generate additional income.

In terms of ownership and responsibility for the goods, whoever operated the transshipment centre and signed for the incoming goods would have to become legally responsible for those goods. If the goods were damaged or lost they would have to take responsibility.

As already mentioned, it is possible to unite the transshipment centre concept with night time deliveries into the centre. In this way goods vehicles delivering to the urban area are able to drop-off their deliveries at the transshipment centre when the roads are quiet, thereby improving their operational efficiency :

“If you take the transshipment idea and the night delivery idea and select goods that would work such as books, records, etc. and then set up a trial of night deliveries to the transshipment centre even if it was just with one carrier (as the concept isn't going to work quickly so best to start with just one carrier). You would only really need one or two staff in the transshipment centre during the night to receive goods, and then goods would be delivered to shops during the day. I think that if it worked everybody would really leap at it like nobody's business”.

(*Distribution manager from supplier*)

One potential difficulty with urban transshipment is whether shippers and receivers of goods would accept another company carrying out the final collection and delivery work in urban areas in preference to the one with which they already have a contract. When asked how they thought their customers would feel about receiving deliveries from the nominated freight transport operator at the urban transshipment centre rather than by their own vehicles and drivers, the manager of a freight transport company gave the following response:

“It is quite likely that our customers would accept this. We build up a rapport with our customers and they trust us. Therefore they should know and accept that we would only

use a certain quality of carrier. It is us that would lose the contract if the final deliverer messed up so we would be very careful about selecting who to use”.

*(Manager from freight transport company)*

One retailer told us that they would not object to a different freight transport company to the one their suppliers contracted, making the delivery to their store:

“I don't think we would have objections to any ideas. Our main problem is the cost implications and the availability of goods, whether it's going to delay the delivery especially when we are getting used to next day delivery of our orders”.

*(Retail manager)*

However other retailers who already receive full load deliveries and/or operate their own internally centralised goods supply system were far less happy about the prospect of having to receive deliveries from a nominated operator at the transshipment centre (see Section 4.7).

When thinking about the notion of urban transshipment centres there is also an important question about where the transshipment centre/s should be located. Should it be several miles outside the town or city on one of the major roads linking the urban area to the interurban road network, or should it be close to the zone where the premises affected by the transshipment centre are located, which is likely to be in inner city/city centre on the edge of the pedestrianised area? Opinion varied in our discussion group sessions:

“On the ring road (several miles from the city centre) I would have thought so that you could get the bigger vehicles running in on the major roads, dropping their goods into this central warehouse. This is basically the operation we are all doing now, picking up, dropping off so on. We're doing this, bringing goods in from manufacturers into our warehouse, holding it here and then distributing as and when required.”

*(Transport manager from wholesaler that makes deliveries)*

If the transshipment centre was located on a major road leading into the city or on a ring road several miles outside the city centre this would have the advantage that vehicles delivering goods to the urban area from some distance away would not need to enter into the city at all to reach the transshipment centre. However this would have the disadvantage that a location several miles from the city centre is not as suitable if small, possibly electric vehicles are going to be used to perform the final collection and delivery work.

Alternatively, if the transshipment centre was located in the inner city, or in city centre right on the edge of the pedestrianised area which it is to serve, this would have the advantage that it is a good location for the use of small, electric vehicles (and would not necessarily result in much more expensive deliveries as vehicle dwell time when making urban deliveries can be substantial and therefore delivery cost does not vary proportionately with vehicle payload). However, this would mean that vehicles delivering to the city from other locations would still have to drive into the city to reach the transshipment centre.

The transshipment centre concept could be linked to a specific pedestrianised area in the city centre. It could be decided that one freight transport operator would be awarded the tender to run the transshipment centre and perform all the delivery work from it. The vehicles used by the transshipment centre operator could be given freedoms that other goods vehicles were excluded from, such as use of bus lanes and the ability to enter the time restricted area at any time of day. However, the vehicle specification would require them to be small, environmentally-friendly vehicles, maybe, for example, electrically- or gas-powered vehicles.

A system could potentially be introduced whereby premises located inside the zone covered by the transshipment centre could decide one of several options about how they receive and send goods from their premises:

- only vehicles operated by the transshipment centre would be allowed into the transshipment zone at all times of day;
- goods vehicles below a certain size or weight would be prevented from entering the transshipment zone at certain times, possibly the typical current vehicle access time restriction in pedestrianised areas of 10am-4pm;
- goods vehicles above a certain size or weight would only be allowed to enter the transshipment zone during the night say possibly between 11pm and 6 am (and possibly only if they were fully loaded or could prove that they had originally been despatched from a depot fully loaded).

In this type of approach, smaller independent shops and other premises operating a decentralised goods supply systems would probably be encouraged by the local authority to use the transshipment centre, or to use freight transport companies that would have to finish making deliveries by 10am. Large shops owned by multiple chains with internally centralised goods supply systems receiving fully-loaded large lorries could be made to receive their deliveries during the night. These larger shops tend to have people working in them or security staff present on a 24 hour basis, so receiving night deliveries should not present any problems to them. These larger premises would probably be prepared to accept night deliveries if they knew that other premises have also had to make concessions about when they can receive deliveries. However some of these larger premises would probably try to refuse changing to night deliveries if other premises were allowed to continue to receive deliveries in the way that they do at present.

Some service companies who use express and courier companies to deliver parts and equipment to customers' premises would also be affected by the introduction of an urban transshipment centre when working at premises in the transshipment zone. The transshipment centre would have to be capable of offering a rapid and reliable delivery system for such parts as some of these service companies are under great pressure to achieve very rapid response times.

There are some potential problems with such the urban transshipment centre concept in terms of (see Section 4.7 for more discussion of the problems associated with urban transshipment centres):

- retailers not wanting their goods stored with other retailer's goods,
- freight transport companies which did not win the tender to run the centre not wanting to see their competitor operating it,
- the range of products the centre could cope with. It could clearly manage packages and parcels but could it also deal with products with more specialised requirements such as hanging garments, food etc?,
- where the accountability lies for goods delivery, damage and loss,
- it may slow down the order lead time and it could result in additional distribution costs,
- the transshipment centre would need to generate a certain level of goods throughput in order to justify its existence, cover its costs and possibly make a profit for its operator, and to make any improvement in the environmental impact of goods vehicle activity in urban areas.

One of the freight transport companies participating in the discussion provided an example of an operation they are involved in collecting kimble tags from shopping centres which has a lot of similarities to the type of transshipment centre considered:

“Some of the malls have their own security departments within the mall and we have a contract to pick up the kimble tags for various retailers. Each shop collects their own tags together and a member of staff takes them to the security office and we then collect in bulk from the security office. Deliveries of tags works in the same way, we deliver to

the security officer and they deliver to the individual stores. In this case we are only talking about Envopacks (small plastic envelopes) not parcels so it is easy for them to manage. It saves our drivers a lot of time and effort having to walk all the floors into every individual store”.

*(Manager from freight transport company)*

Another example of the transshipment centre concept but in a rural rather than an urban context is the system that express and parcel carriers use at the moment for goods distribution to the Scottish Highlands and Islands:

“Seventy to seventy-five percent of carriers use the same single carrier to deliver to this area.... Because the area is so sparsely populated we all consolidate our freight with one single carrier who does all the work. Obviously not many carriers would tell our customers this because we all allegedly deliver on our own vehicles! But we can't all send our vehicles across to an island with one parcel on it. What you are talking about is the reverse of this for delivering in the city. Carriers transport their goods to several centres in northern Scotland for onward delivery by the single carrier.....The carrier has our computer system and all the other carriers computer systems so they operate just like an extension of all our companies. The advantage is that they can send out fully loaded vehicles due to consolidation of the freight”.

*(Manager from freight transport company)*

### **3.22 Quality Partnerships**

The freight transport and service companies that participated in the study were (generally) relatively keen about the concept of entering into agreements with local authorities that would allow them to benefit from policy measures that made their operations easier to perform (such as relaxed vehicle access or unloading time restrictions) in return for them behaving in a particular way (such as making a commitment to driver training), or using a specific type of vehicle technology (such as CNG- or electrically-powered vehicles).

However retailers and other customers of freight transport and service companies such as manufacturers and office-based companies are likely to be less keen than goods and service companies about participating in Quality Partnerships for Urban Distribution. This is the impression that we obtained from speaking to goods and service companies on the likelihood of their customers wanting to become involved in thinking about how goods and service transport could be made more efficient and also from speaking to retailers and manufacturers directly. Retailers and manufacturers are often not inclined to see goods and service vehicle related-problems as being their problem.

In order to get sufficient insight into existing problems with urban goods and service operations it would be necessary to include the following participants in a Quality Partnership:

- freight company managers
- goods vehicle drivers
- service company managers
- service engineers/providers
- goods receivers
- goods suppliers

Local authority experience tends to be that it is difficult to engage industry in any discussions. And it is even more difficult to engage small companies than it is big ones. This is probably due to them not having spare labour (and therefore not being able to do without a member of staff while they attend a meeting) and also that these small businesses are in a very difficult economic position. However it is probably these small businesses that are most affected by transport policy measures.

Quality Partnerships for Urban Distribution could prove to be an interesting development in local approaches to freight transport policy. However, the number of organisations that need to be involved, and the reticence of especially small businesses to participate is likely to make it difficult to successfully achieve these partnerships in practice. (See Section 2.8 for further discussion of Quality Partnerships for Urban Distribution).

### **3.23 Other measures to encourage premises to change ordering behaviour**

There is a need for imaginative thinking by local authorities about how monetary incentives and other inducements could be used to encourage premises that receive and despatch goods and services to become involved in making their goods and service requirements more efficient and thereby also more sustainable. This could be achieved, for instance, by making monetary incentives through the national taxation system or commercial rates levied on premises to those companies that were prepared to alter the times at which they are prepared to receive these vehicles and are prepared to alter their goods supply systems and stockholding arrangements so as to reduce the frequency of vehicle collections and deliveries.

## 4. Policy measures that could make goods and service operations more difficult to perform and less efficient in urban areas

### 4.1 Introduction

Policy makers may introduce policy measures in future that make goods and service operations more difficult to perform and thereby less efficient in urban areas than they are at present. This could come about in two ways:

- i. Policies are introduced that are not directly aimed at goods and service vehicle operations, but which indirectly affect them and reduce their efficiency (such as introducing more bus-only lanes). Measures of this type have the effect of making urban goods and service operations more difficult to perform, while at the same time either leaving the environmental impacts caused by goods and service activity unaltered or in some cases worsening their impact.
- ii. Policies are introduced that are directly aimed at goods and service vehicle operations which are intended to make them more environmentally sustainable, but which, at the same time, also make them more difficult to perform and reduce their efficiency (such as introducing longer goods and service vehicle access time restrictions, or banning vehicles above a certain weight from the city).

From talking to a number of freight transport and service companies it is apparent that if policy measures make it more difficult to get goods and services to and from premises, these companies are unlikely to stop performing these operations. Instead they will make the necessary investments so that they can continue to provide the same range of services and level of service to customers. Freight and service companies operate in competitive markets and it is very easy for a competitor to win their customers and market share unless they are vigilant about achieving sufficiently high levels of customer satisfaction.

So, if some local authorities were to introduce stringent regulations and restrictions regarding goods and service vehicle operations in certain urban areas, the companies operating these vehicles would not stop sending vehicles into that area, instead they would do whatever was necessary in order to continue providing services in that town or city. If that meant, say, sending two vehicles into an urban area rather than one in order to make all the deliveries necessary before the imposition of 9 am goods vehicle ban, then this is what they would do. The cost of the operation is likely to increase under such circumstances and the goods and service companies would have to try to pass on these cost increases to their customers. Their customers will not be happy about price increases and will investigate whether other companies are prepared to offer them lower prices. The following conversation took place during a discussion group session with service companies:

“Imagining the most extreme situation, do you think the time will come when you and other service companies may say “well we're not going to service your borough or city any more””.

*(Facilitator)*

“From our point of view we cannot, we have no choice”.

*(Manager from service company)*

“You couldn't (refuse to offer a service to customers). You would go out of business. A competitor would do it instead”.

*(Transport manager from supplier that makes deliveries)*

“Human nature says that if another company offers it at a lower price or a better service then your customers will use them instead”.

*(Manager from service company)*

“That's right we're called the services. We are there to serve them. Now I think you're concept is perfectly correct if you look at it logically. But people don't look at things logically. They want what they want, and basically, “sod the rest of you”. It's an auction, the highest bidder gets the work”.

*(Service engineer)*

In situations where the receiving premises is responsible for paying for deliveries (rather than the sender of the goods), multiple retailers with outlets nationally tend to be charged an average delivery cost per unit delivered that is the same for all of their branches regardless of where they are located and how difficult it is to deliver to them. However independent shops and other premises located in a town or city where, as a result of new transport policy measures, freight operations become particularly difficult and more expensive to perform, are charged for the actual cost of deliveries to their single premises. Therefore the impact of more difficult and hence more expensive distribution operations in a specific town or city would be likely to affect independent retailers and other independent premises far more severely than multiple retailers and other premises which are parts of large companies, as the cost increases are more likely to be passed on to independent premises.

Those goods and service companies that we have interviewed and that have participated in discussion group sessions tend to expect new legislation and regulations regarding urban goods and service transport to make it more difficult for them to carry out their operations. The following comment made by a manager from a wholesaler which carries out its own deliveries typifies the view of those that have participated in the research:

“We find that any legislation works against us, so we just adapt to it, we put up with what is thrown at us”.

*(Transport manager from wholesaler that makes deliveries)*

It is against this background of a very competitive marketplace and the necessity for goods and service companies to continue to offer a high level of customer service at competitive prices, that policy measures that could hinder goods and service vehicle operations in urban areas were considered in the following sections of this chapter.

As well as making urban goods and service operations more difficult to perform, some of the policy measures discussed in this chapter could potentially cause some aspects of vehicle activity to become more environmentally damaging (while at the same time reducing other environmental impacts). Other measures considered in the chapter only reduce the environmental impact of goods and service vehicle activity. The interviews, discussion groups and other research activities that we have conducted as part of this project have helped us to form opinions about the relationship between all of these policy measures and their potential impact on goods and service vehicle activity, and hence the environmental impacts of this activity. These relationships are shown in Table 5. These relationships are not always clear cut, and, in some cases, we believe that a particular policy measure could lead to an increase, decrease or no change in a particular aspect of vehicle activity. This is indicated in the table where appropriate.

**Table 5: Relationship between policy measures (that could make freight operations more difficult to perform) and vehicle activity**

Policy measures:	Total vehicle trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption rate/km	Vehicle size/weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicle using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
New/enlarged pedestrianised areas (greater vehicle access time restrictions)	○/↑	↑	○	○	↓	○/↓/↑	○/↑	○	○	○
Lower speed limits in urban areas	○	○/↑	○	○/↓	○	○/↑	○	○/↑	○	↓
More restrictions on vehicle weight/size	↑	↑	○	↓	↓	○/↓/↑	○	○	○/↑	○
More loading/unloading time/parking restrictions	○	↑	○	○	○	○/↓/↑	○	○	↑	○
Alternatively-powered vehicles	○	○	○	↓	○	○	○	○	○	○
More bus/cycles lanes	○	○/↑	○	○/↑	○	○/↑	○	↑	○	○/↓/↑
Urban road user charging	○/↓	○/↓	○/↓	○/↓	○	○	○	↑	○/↑	↑

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

## 4.2 New/enlarged pedestrianised areas (with greater vehicle access time restrictions)

Most freight and transport companies and premises receiving these goods and services that have participated in the study, view the current time restrictions in pedestrianised areas as causing them a significant operational problem. However, at the same time, they recognise the desire of local authorities to provide shoppers with a traffic-free environment. Retailers are torn between wanting a smooth and reliable supply of goods and services at times that suit their needs, but also wanting a good shopping environment for their customers. Below are some comments about current vehicle access time restrictions in pedestrianised areas that were made during discussion group sessions:

“We would like there to be no pedestrian areas, we would like to be able to unload everywhere but logically you can't have that. First the historical layout of a place prevents a lot of what would be desirable. Secondly pedestrians and shoppers have their own needs. So there is a conflict of interest in the city centre between shoppers buying goods and spending money and distribution companies trying to get goods into the shops for customer to spend their money on. I think that whatever way the government of local authority jump it is going to upset one of the two factions.”

*(Manager from freight transport company)*

“I think that sometimes there are too many restrictions for delivery drivers. Okay make the area almost pedestrianised. But in some places like Ipswich you get whole areas pedestrianised from 9.30am and we might have 20 drops to make in that area and we can't get back in there until 4.30pm” (Ipswich has a larger pedestrianised area than Norwich and the time restrictions apply for a longer period of time).

*(Manager from freight transport company)*

“It's what is in an area that matters to customers (range of shops, facilities etc.) not if it's pedestrianised. If the area has good shops, facilities etc. then pedestrianisation may help it but the former is more important”.

*(Regional manager from retailer)*

If local authorities continue to introduce new pedestrian areas and enlargements to existing pedestrian areas with the consequent vehicle access time restrictions that are typically imposed in these areas, this will have an ever-worsening effect on the ability of freight and transport companies to carry out their work efficiently and when their customers require it to take place. The following conversation took place during one discussion group session:

“If the delivery window was increased it might be possible to deliver everything to the shop in one delivery trip. At present pedestrianisation with 10am - 4pm restrictions are resulting in having to use 3 vehicles/trips to make the deliveries in the permitted times. If the window time was 12 hours then maybe only one vehicle would be needed”.

*(Manager from freight transport company)*

“It's (pedestrianisation) good from a customer shopping and sales point of view.

*(Regional manager from retailer)*

“It's difficult from a distribution point of view”.

*(Manager from freight transport company)*

“If pedestrianised areas got bigger, this could make delivery time increase if it wasn't possible to get as close to premises as possible”.

*(Facilitator)*

“The vehicle couldn't make as many drops therefore we would need to operate more vehicles to make delivered before pedestrianised area time restrictions come into force. Shopping centres are built with delivery vehicles in mind but when city centres are pedestrianised to make shoppers keener to shop in city centres this causes us a problem. It's the converting of roads with premises with inadequate distribution access to pedestrianised schemes that is problematic”.

*(Manager from freight transport company)*

The pedestrianisation of traditional high streets with poor vehicle access results in a trade-off between either: (i) parking further away from the premises and carrying and trolleying goods over relatively long distances during the day at times when the vehicle access restrictions are in place, or (ii) delivering goods to premises outside the times when pedestrianisation is in force and deploying the necessary vehicles and drivers to achieve this. From the interviews and discussion groups with retailers and freight transport companies it seems clear that when pedestrianisation is introduced retailers do not expect to have to pay more for their deliveries, even though the costs of making deliveries may well rise.

Most city centre premises receiving goods request deliveries to be made during the morning, but do not accept deliveries before 8.30 am. Pedestrianisation tends to come into force between 9.30-11am in many urban areas. This does not give goods suppliers and freight transport companies much time to make their deliveries. It can result in a company making deliveries having to operate several vehicles in the pedestrianised area in order to successfully make all their deliveries before the vehicle access restrictions come into force. When asked if his company expects the same delivery service whether or not their shops are in pedestrianised area (or whether they accept that there are different constraints that effect freight companies' ability to service shop), the regional manager of one city centre retailer told us that:

“I think I would have to say that we are a little unconsidered about it because we tend to want our deliveries as soon as we can have them and we are probably a little unscientific about that”.

*(Regional manager from retailer)*

The operational manager of a freight transport company performing many deliveries in urban areas in the UK told us that:

“When a high street is pedestrianised and we can't deliver at 8.30-9am because the premises won't receive goods at this time so instead we start delivering at 3pm, the initial response is that the retailer treats this as a late delivery. We are often contracted to deliver by 5pm but retailers who used to receive deliveries at 9am but then start to get them at 3pm view this as a late delivery”.

*(Manager from freight transport company)*

The costs of making deliveries in pedestrianised areas tend to be greater than in non-pedestrianised areas regardless of whether deliveries are made prior to the introduction of vehicle access restrictions in the morning (as it can require the freight company to operate more vehicles and drivers), or whether deliveries are made during the vehicle access time restrictions (as vehicles have to be parked relatively long distances from the premises the goods have to be pushed by trolley or carried further, thereby increasing the time taken for each delivery). The latter also causes potential vehicle security problems, increases the risk of goods being damaged during their movement from the vehicle to the premises and also the risk of damage to the goods from adverse weather conditions.

“As private individuals we all want clean, traffic free streets with nicer environments. But from a business perspective it is likely to have an impact on rates and service charges because of the investment, if delivery vehicles have to park 500 yards away and we've got to collect it then we've got more hours to pay out to staff, the delivery times are getting longer and longer, so it's costing (name of freight transport company) more

and more, and there must be questions about where the payback is for you as a business.”

*(Retail manager)*

One way in which retailers can help to overcome the difficulties caused by pedestrianisation and still receive their deliveries in the early morning is to employ a part-time employee or get one of their staff to start work early each day to receive deliveries in the morning before the vehicle access time restrictions come into force.

From the discussion groups it emerged that some freight transport companies believe that if pedestrianised areas and the vehicle access time restrictions that are associated with them, are extended much earlier in the morning than they are at present, it would become infeasible for all deliveries to be made to premises in the pedestrianised area in the morning before the restrictions came into force. The following conversation about how freight transport companies and retailers would cope with such extended vehicle access restrictions in urban areas took place during a discussion group. It also identifies a couple of very important points, namely that: (i) the scope to alter the delivery arrangements is significantly affected by who (i.e. which company) organises and pays for the delivery of the goods to the premises (in many cases it is the sender rather than the receiver who pays), and (ii) different ways of overcoming the delivery problems can result in increases in delivery costs; how these costs are borne by different parties is an important factor in whether a solution is implemented. Some solutions will lead to higher costs for freight transport companies, while other solutions will lead to higher costs for premises receiving goods. The extent to which these costs are likely to be shared will have an important effect on whether company-led solutions will be forthcoming and which party will take the initiative:

“Just to be clear if your vehicles were banned from an area for a long period of each day (due to pedestrianisation) would you carry on delivering to people in the morning and simply use more vehicles if necessary?”

*(Facilitator)*

“If vehicle time restrictions were extended in an urban area we probably couldn't do all deliveries in the morning before the restriction came in to force, so I would expect to see more deliveries taking place towards the early evening not at both ends of the day”.

*(Manager from freight transport company)*

“The pressure on retailers from customers is great. Is there scope to change the times you receive deliveries if necessary or would you simply not accept this?”

*(Facilitator)*

“There is a bit of scope to change the timing of deliveries but you would soon be getting into having to change working practices and issues about who should bear the cost of this”.

*(Distribution manager from retailer)*

“I don't think it is impossible to change delivery times. The most important thing for us to preserve is the lead time. Change in working practices would be necessary but if the lead time could be reliably preserved and there were regular reliable delivery patterns that would be quite acceptable”.

*(Regional manager from retailer)*

“It is interesting to think about who would bear any additional costs caused by extended vehicle access restrictions in pedestrianised areas. If the problem is overcome by (name of freight transport company) putting on extra vehicles you would bear the cost of this and how you recover this would be a commercial issue. However if (name of retailer)

employ staff to receive deliveries at different times of day which allows (name of the freight transport company) to reduce your distribution costs or prevent these costs increasing (name of retailer) would bear the cost of this. Each of you would want to recover some of this cost from the other if you bore the costs of these different solutions. It is the way the costs do or don't transfer and are shared that is important".

*(Facilitator)*

"I suppose we might recover costs via our customers. If you get restricted access to the city centre which I find attractive as a private individual, it is important to determine what quality of public transport infrastructure would be introduced to make it sufficiently attractive to customers".

*(Regional manager from retailer)*

"What if the Mayor in London said, "we're going to standardise things in London. In pedestrianised areas there will be no loading 10am 'til 4pm. On red routes no loading 7am til 10am and 4pm til 7pm, so that the times it isn't possible to stop on a red route it is possible to stop in a pedestrianised area and vice versa?""

*(Facilitator)*

"That would be helpful as it would help to utilise the vehicle better".

*(Manager 1 from freight transport company)*

"But everyone wants their delivery at 9am in the morning no matter what the restrictions are. That is our real pressure. If we had co-operation from the premises we deliver to, then this system would be fine but that seems unlikely. Everyone wants early morning deliveries".

*(Manager 2 from freight transport company)*

"If there was a sliding scale of distribution prices depending on time of delivery this might work. Then an incentive pricing scheme could be used whereby people received cheaper prices for delivery times other than early morning (and especially if they accepted deliveries outside normal working hours) and paid a premium for early morning deliveries. But of course this wouldn't work as we aren't paying for the delivery, the suppliers are".

*(Regional manager from retailer)*

"You could do this through the service negotiation of the local shop. There's no reason why you (name of retailer) couldn't say to us (name of freight transport company), "look, we'll pay this amount to have it delivered at 9am in the morning"".

*(Manager 2 from freight transport company)*

"But that could be quite complicated".

*(Regional manager from retailer)*

"It is an important point that who pays for the distribution affects the arrangements. In some sectors the sender pays while in other businesses the receiver is more involved with payment".

*(Facilitator)*

There is the possibility that in some towns or cities, local authorities will introduce new pedestrian areas, enlarge existing ones, or make vehicle access time restrictions more stringent in pedestrianised areas, but will also offer exemptions to certain types of environmentally-friendly vehicles, such as, for example, those powered by gas or electricity. However, in general, the goods and service

companies that participated in the research felt that this type of approach will generate its own problems, as they believe that pedestrians will not be happy with this approach as they expect to be able to walk freely in pedestrianised areas and not have to worry about the threat of vehicles and their family's safety:

“Electric vehicles are quieter anyway, so if you put one down there, that's going to be bad for the public”.

*(Goods vehicle driver)*

It is important to remember that many goods vehicles do not operate exclusively in the urban area, many also have to perform inter-urban journeys. For instance one freight transport operator that we spoke to stores their goods in a specialised warehouse in Bath and has to make next day deliveries to premises in London:

“At first we thought to use swap bodies or drawbars and then bring it to London in bulk and break the loads in a depot on the edge of London. This didn't work out in terms of financial modelling. Instead we have got new 7.5 and 12 tonne vehicles and they have to be able to do a long drive along the M4 from Bath to London (and do this economically) and then spend the bulk of their day in London making deliveries. This is an anomaly. Not all the deliveries being made in the city do all their stem mileage in the city, some vehicles such as ours do a lot of mileage outside the urban area as well....We have to make 80% of the deliveries in the morning. Most customers won't accept deliveries at lunchtime or in the afternoon. So our driver leaves at 5am from Bath and this isn't a problem. Our big problem is the number of drops a driver can do between 7.30/8am and 12.30pm which is the time window at most premises we deliver to”.

*(Manager from freight transport company)*

If more stringent vehicle access time restrictions are imposed in urban areas, operations such as this will no longer be possible as the vehicles wouldn't have enough time to make the journey from Bath to London and make all their deliveries before the time restrictions came into force. Asked what the company would do in this situation, the representative told us:

“In this situation I would use a 40 foot vehicle to bring it from Bath to Park Royal/Heathrow and then cross dock it onto small vehicles (which would make the deliveries in London). But our modelling shows this isn't the most economic way of doing it. We are in a very price competitive market where customers will switch contractors for a few pence per drop”.

*(Manager from freight transport company)*

Therefore, policy measures that result in more stringent vehicle access time restrictions in cities may also lead to a growth in the number of freight transport depots located on the edge of cities, so that companies that used to operate vehicles over relatively long distances to make urban deliveries will instead have to operate vehicles from the edge of, or within, the urban area. It is likely that this would significantly increase the cost of such operations. It also indicates that rather than simply trying to identify the most appropriate vehicle for urban deliveries, it is also necessary for companies and researchers to consider an appropriate vehicle for performing inter-urban trips *and* urban deliveries.

### **4.3 Greater vehicle weight/size restrictions**

It was felt by most respondents that the imposition of more stringent goods vehicle weight and size restrictions in urban areas would result in the need to operate a greater number of smaller goods vehicles in order to deliver to premises in these areas, with a consequent rise in the total number of goods vehicle trips required to deliver and collect the same quantity of goods in an urban area.

One retailer with an internally centralised goods supply system told us that more stringent weight/size bans on delivery vehicles in urban areas would have a very detrimental impact on their operations as

they sell a lot of bulky and heavy goods and fully-loaded, large articulated vehicles are used to make deliveries to the store. A restriction that prevented the use of a vehicle of this size would result in the need for a greater number of deliveries in smaller vehicles, higher distribution costs due to the need to operate with more vehicles and drivers and to have to spend a greater quantity of shop staff time receiving more deliveries, and the increase in deliveries would in turn further worsen the traffic congestion problems in urban areas.

Freight company vehicles that need to travel through a particular part of a town or city to get to the premises where they need to make a delivery would also potentially be affected by the imposition of more vehicle size and weight restrictions. It could result in them having to take a less direct route than they do at present in order to avoid the restrictions. One freight transport company that participated in a discussion group currently operates a night operation and its vehicles have to divert round the M25 to get from one side of London to the other because of the London Lorry Ban:

“Now an artic going right round the M25 at 7-8 miles per gallon can't be sensible in mileage and environmental terms, and in terms of journey time it is also ridiculous”.

*(Goods vehicle driver)*

“Also when you come into London you can't go down Earls Court Road after about 9 o'clock and yet they divert you through the centre of London past Harrods instead. You'd think that going along Earls Court and along the Embankment has got to be better environmentally than going past Harrods. It's crazy”.

*(Goods vehicle driver)*

The majority of service companies' vehicle fleets would not generally be affected by a change in vehicle size and weight regulations as most of these companies are using light vans or cars. Those service companies that we interviewed that use heavy goods vehicles tend not use goods vehicles of greater than 7.5 tonnes gross vehicle weight.

The only way in which service companies and freight companies using smaller goods vehicles are likely to be affected by the imposition of more stringent vehicle size and weight regulations is if local authorities were to introduce physical barriers to prevent vehicles above a certain width from entering an urban area or a specific road, or introduce restrictions for relatively light commercial vehicles. During one discussion group we discovered that service vehicle engineers who drive cars and small vans are already suffering disruptions to their journeys as a result of larger goods vehicles ahead of them in the traffic discovering that they cannot get through physical width limits:

“We are finding that where councils are putting concrete pillars on the corners to stop big lorries getting into a particular road. But the lorries still come in and then either get stuck or take a long time going backwards and forwards trying to manoeuvre through. Our engineers are parked up behind the lorry and have to wait 10, 15 or 20 minutes for it to get through or sort itself out. In the meantime all the traffic behind the lorry is building up and up”.

*(Manager from service company)*

There is, and will continue to be, a significant demand for goods and service vehicles of less than 3.5 tonnes gross vehicle weight for urban operations. These vehicles are easier to park and manoeuvre than larger vehicles, meet any weight limits imposed on urban roads by local authorities and allow the companies operating them to avoid the driver regulations and vehicle and operator licensing requirements imposed on larger vehicles. However, despite the limited gross weight of these vehicles, many companies using them want them to be able to carry as much as possible. The vehicle therefore has to be very lightweight and have a large body. As a representative from a vehicle manufacturer informed us:

“Because of the drive for sustainable urban transport the small vehicle will be in demand for many years to come, it may be a slightly different shape size and colour, but the principle of small will still be around and will grow”.

*(Engineer from vehicle manufacturer)*

Policy makers need to be more informed about the reasons for the growth in the use of small commercial vehicles in urban areas (i.e. is it caused by contracting out, the growth of service-based economy, avoidance of regulations for larger vehicles, the current congestion levels, the need to provide higher level of service to customer, smaller drop sizes, etc?) and need to be careful that they understand the potential outcomes of their policy measures. Otherwise they may inadvertently encourage further growth in the use of small vans and thereby increase the number of goods vehicle trips necessary to perform all the goods collections and deliveries required by urban premises. The size of vehicle used in urban areas is influenced by other commercial and operational factors as well as regulations and restrictions; as a representative from a multiple retailer informed us:

“I would still argue that even if nothing is done about congestion, there are still certain factors in society that will change vehicle size. These will include “do people want to carry on shopping?” You're right it will be a demand-led change. I am just arguing that it's not necessarily congestion that will cause demand to change....I think the vehicle profile will change and there will be more, smaller vehicles, even if nothing changes in the legislative sense. If you took my fleet in 10 years I will have relatively fewer thirteen metre trailers and more transit-type vehicles.”

*(Distribution manager from retailer)*

With local authorities imposing stricter vehicle operating regulations and restrictions in city centres, it is possible that in the near future a company performing goods collection and delivery work will need to have one type of vehicle for operations in the city centre (which would have a very high specification and would be very expensive) and another type of vehicle for work in other urban areas (which would have a far lower specification and be a less expensive vehicle). However, it is somewhat unlikely that companies will want to buy different vehicles for two areas in such close geographical proximity unless they have to do so, as it may well result in a larger vehicle fleet, higher total operating costs and poorer vehicle utilisation.

#### **4.4 More loading/unloading and parking restrictions**

In addition to imposing more or enlarged pedestrianised areas with more stringent vehicle access time restrictions, local authorities could consider introducing stricter vehicle loading/unloading and parking restrictions (which could either: (i) reduce the amount of time that a freight or service vehicle can spend unloading or parked on a road or in a bay, or (ii) reduce the permitted hours during the day when parking or unloading are permitted on a particular road).

One Norwich-based retailer without off-street unloading facilities told us that if the local authority impose stricter loading restrictions on the road outside the premises then the shop would be, “in trouble. We would then have to consider using out-of-town storage and out-of-hours deliveries to the store and this would put the cost up tremendously”. They would have to employ extra staff to work outside of normal shop hours to receive these goods and would also have to meet the costs of the new storage facility.

The manager of a supermarket told us that if loading restrictions were increased the customer would, “see more filling up during the day, more cages, more trolleys, and it would cost a lot more in staffing as it would result in lower productivity”. Most of the restocking and filling of shelves currently takes place outside normal opening hours as this is difficult to perform when customers are in the shop and the staff are required to serve customers rather than fill shelves when the shop is open.

The manager of a fast food restaurant also told us that if, as a result of new unloading restrictions outside their premises, it was necessary for their company to request that the supplier delivering food to their premises made these deliveries within a fixed and relatively short time window, “then the distribution cost would probably increase dramatically. Also if more deliveries were made during shop opening hours this would have an impact on shop staffing levels and make deliveries more disruptive to the smooth running of the shop”.

In addition if local authorities impose stricter loading time restrictions for on-street collection and delivery work this will result in all collections and deliveries having to be made in a smaller time window and will potentially result in the roads becoming more congested with goods vehicles, and hence less safe for pedestrians, during the time that loading/unloading is permitted.

For some goods deliveries, either because they are very time-sensitive (such as newspapers) or because they are very heavy, it is crucial for the success of the delivery that the driver is able to park the vehicle directly outside the premises to which the delivery is to be made. If loading rights on certain roads were removed or the permissible loading times reduced this would result in a rise in late deliveries in the case of time-sensitive goods, and more failed deliveries in the case of very heavy goods. One newspaper distributor told us that the required delivery times are so tight that even a delay of 15 minutes over the course of an entire vehicle delivery round has major repercussions for the success of the operation. All delivery and collection work carried out to premises affected by changes in on-street loading regulations outside the premises would potentially take more time to complete and result in a reduction in productivity and vehicle utilisation.

In the case of service vehicle operations, these are often car or van-based, they cannot use on-street loading bays and are not able to make use of existing loading times as they are not treated as freight operations (other than when the vehicle is being unloaded or loaded). So, these service trips are treated more harshly than goods vehicle trips at present in terms of on-street parking provision. If new, more stringent restrictions on parking were introduced in urban areas this would adversely affect the service sector.

City centre retailers are also worried about the effect that stricter parking restrictions would have on customers who travel to their shops by car. They are concerned that if any of the following happened it would have an immediate effect on their sales levels: (i) the number of city centre parking spaces are reduced, (ii) the times at which parking is permitted in the city centre are reduced, (iii) the costs of city centre parking are increased, or (iv) if city centre parking is completely banned. They are concerned that any of these measures would result in their customers choosing to do more or all of their shopping in out-of-town or edge-of-town retail parks and shops or in other town centres that have not imposed such restrictions.

“There is less parking available in Norwich city centre now than a few years ago (because they keep developing the car parks for other purposes). It now takes fifty percent longer to come into Norwich city centre than it does to travel on the ring road to one of the retail parks”.

*(Retail manager)*

The threat posed by out-of-town retail parks is a growing problem for city centre shops in Norwich and in many other UK towns and cities. These retail parks are easier to travel to by car than city centre shopping areas and have sizeable, usually free, parking facilities. In addition, city centre shops in towns and cities with little residential property in the town centre can have to pay higher wages to their staff than out-of-town shops to compensate them for the longer journey times and the higher costs of travelling and parking. This is especially true in situations in which the shop either opens very early or closes very late, so that public transport services are not available to staff for journeys to or from work and they therefore have no choice but to travel by car.

#### 4.5 Lower speed limits in urban areas

Local authorities may introduce lower speed limits on certain sensitive urban roads in order to try to reduce the risk of traffic accidents and fatalities. However respondents felt that this would have little effect upon their operations. Some goods and service companies said that their vehicles rarely travelled this fast in urban areas at present due to existing traffic levels:

“Is it a promise that we’d be allowed to get up to 20 miles per hour!”

*(Service engineer working in central London)*

#### 4.6 Other traffic calming measures

Many traffic calming schemes in urban areas have been introduced with the intention of reducing the risk of vehicle accidents and improving pedestrian and cyclist safety. However, traffic calming schemes can negatively affect the operation of goods and service vehicles. Drivers of these vehicles, especially larger goods vehicles, can find some designs difficult to manoeuvre through, and deceleration and acceleration can prove more difficult for a lorry than for many other types of road vehicle.

#### 4.7 Urban transshipment centres

Although some of the participants in discussion groups and those interviewed respondents viewed the idea of urban transshipment centres as something that could potentially help them in making and receiving deliveries in urban areas (see Section 3.21), many respondents saw transshipment centres as problematic, reducing the efficiency and increasing the cost of existing freight transport operations.

There was concern among representatives from freight transport companies was that if one company won the right from the local authority to operate the transshipment centre (and was possibly subsidised to operate it) it would give that company “unfair” operating advantages (in terms of when their vehicles could access the city centre) and a competitive edge over other freight companies working in that town or city. Some participants were adamant that if transshipment centres were introduced, local authorities should not award one freight transport company with special operating advantages over other carriers in the urban area.

Below are some other problems of the urban transshipment centre concept raised by retailers with explanations of how it would affect their business from one discussion group session:

“It would be a nightmare for me personally”.

*(Retail manager who currently receives full-load deliveries in articulated vehicles)*

“If you've got fresh and frozen stock moving around, the more times you handle it, the more problems you are going to have with the product. If you've only got something with a fairly short shelf life, if it comes out of lorries several times and is moved around, its maybe warmed up or comes out of temperature, then you have more risk at the end of the line that that product is not up to scratch. It's a time factor also, you're going to lose usage of the product; if it's only three days and it's sitting half a day somewhere else at the end of it you're reducing the shelf life of the product for the end user down from perhaps three days to two days and this probably pumps the cost up”.

*(Supermarket manager)*

“If chilled food comes out of temperature you lose a significantly more than proportionate part of its total shelf life. Or if it comes out of temperature you may not get your delivery at all as it has to be returned. This is a problem when you share deliveries as the driver is opening and closing the back of the lorry a lot and when you receive your delivery you have to reject it. “I've had it where a fresh delivery comes in at 14 degrees and you have to send it away”. On fresh food you often don't even know if the temperature in the vehicle has been fluctuating up and down a lot, on frozen foods this

should show up (the lorries are able to print out hour by hour readings of the vehicle temperature). The driver will make a printout if you ask for it and sometimes you have to do this, especially when you receive an afternoon delivery. However if you have to reject the load then you have a business problem because you may have very little stock (24 hour stock or less) and you have to wait for another delivery to be sent out to you”.

*(Fast food restaurant manager)*

Some of the participants were concerned about whether shippers and receivers of goods, and indeed freight transport companies themselves, would accept that the final delivery into the urban area was carried out by another freight transport company than the one they had contracted to do the work:

“Express companies with timed deliveries are not going to be willing to pass these deliveries to the transshipment centre. They will want to make these deliveries themselves to ensure they meet their commitments to their customers for 9am and 10.30 am deliveries”.

*(Manager from freight transport company)*

“In the city we might have one or two full lorries every day. So you're trusting a large proportion of your freight to another company, and getting them to get the paperwork signed to agree with your insurance company etc. It isn't something that couldn't be looked into, but it would be about costings and efficiency of the companies”.

*(Manager from freight transport company)*

Such a system is only likely to work if freight transport companies are confident about handing over the final delivery work to another freight transport company. From the perspective of premises in the transshipment zone which receive the deliveries, transshipment centres are only likely to prove successful if the premises were prepared to work with other receivers in the city centre in accepting the system.

There is also the problem of shippers and receivers wanting to be able to track and trace their goods through the distribution system. A single freight transport company with the right computer systems can already provide this service to customers. However, because different freight transport companies operate different tracking and tracing systems to each other, tracking and tracing is often not possible when goods pass from one freight transport company to another. For the transshipment centre to be able to offer this service it would have to put in place a tracking and tracing system that was compatible with the systems used by all the freight transport companies delivering goods into the centre. The following conversation about this particular issue took place during one of the discussion groups sessions:

“I want to be able to see where is my parcel.”

*(Retail manager)*

“It's about taking responsibility for the parcel and it's progress in the supply chain. Who would own this responsibility for the problem?”

*(Manager from freight transport company)*

“Are the tracking systems used by different companies compatible?”

*(Facilitator)*

“Good grief no! They all do the same thing but they're not really compatible. Some have barcodes, some still have consignment notes etc. They have all developed different systems”.

*(Manager from freight transport company)*

“So to make it work there would need to be more commonality. You could probably cope with a couple of systems at the transshipment centre such as bar codes and one other thing, but not the whole range of systems used?”

*(Facilitator)*

“But everyone wants to have a unique system. Because if we all had the same what would we sell to our customers? You need to have an edge”.

*(Manager from freight transport company)*

Working out the financing of the transshipment centre is another important issue and would involve calculating the effect that the introduction of this system would have on distribution costs. Other problems include the speed and reliability of delivery, and safety of the goods:

“Newspapers used to be delivered by train, but it switched to road because it meant double handling (which is labour intensive) and was slower. Now if you're are going to tranship you're going backwards because you are slowing the whole procedure down”.

*(Goods vehicle driver)*

“And there are greater risks of damage to the goods and security problems”.

*(Service engineer)*

Any additional distribution costs arising from the use of a transshipment centre would need to be weighed against the operational gains for receivers of goods that a transshipment centre could deliver. Also, it is possible that a transshipment centre could potentially result in improvements in vehicle productivity, and a reduction in labour and fuel requirements in comparison with the current situation in which many freight companies' vehicles are involved in traffic congestion and delays.

#### **4.8 Alternatively-powered vehicles**

When asked whether they thought goods and service companies would be prepared to invest in alternative, more environmentally-friendly technology, such as small electric vehicles, in return for being given more freedom to operate by the local authority (in terms of say being allowed to operate at all times in locations which are normally subject to vehicle access time restrictions) respondents entered into the following conversation in one discussion group session:

“I don't think that would work as you can't run an electric vehicle from Hull to do a delivery....You're gonna find that the hauliers around Norwich aren't gonna be able to afford to put an electric vehicle on the road simply so they can use all the better roads in Norwich...Their costs are going to go up and you'll get a snowball rolling again which brings us back to costs. Everyone in this world is trying to cut costs....they're not gonna invest in electric vehicles just to make a delivery easier...they say `sod you we're gonna sit in the traffic for an hour 'cos it ain't gonna cost us as much as running those electric vehicles for a year.”

*(Goods vehicle driver)*

“That's what it comes down to - commercial awareness. It would be nice to think that the people putting some sort of efforts into curing the problem are getting some sort of rewards. If a company is trying to make this effort and that effort it would be nice if they were rewarded in some way”.

*(Service engineer)*

“You either make it a benefit to them so they'll go for it or you do the same to everyone so it's a level playing field. So if you say `it's electric vehicles in Norwich, you all use electric vehicles in Norwich, I don't care who you are. Then no one has a choice. If they want to deliver in Norwich or work in Norwich they have to have an electric vehicle then

companies will find a way of financing it. Because they're financing against other companies that have got to find a way of financing it."

*(Service engineer)*

"You'll find the bigger companies can finance it".

*(Goods vehicle driver)*

"You'll get a company setting up on the edge of Norwich with electric vehicles and they will then say, right to have your pallets delivered into Norwich you've got to come to us, so we're going to charge you this amount of money to deliver your pallet...."

*(Goods vehicle driver)*

"Until someone next door says 'I'll do it cheaper than them, and the one next door to him says 'I'll do it cheaper than him'..."

*(Goods vehicle driver/manager)*

"I don't think you'll get that as the price in the immediate term will go up and all the smaller shops in Norwich will have to close down 'cos they then can't get the goods at the price they require to be competitive with the big people."

*(Goods vehicle driver)*

One freight transport company that we spoke to would be reticent about changing its fleet to include alternatively fuelled vehicles in order to gain exemptions to operate more flexibly in a particular urban area, as they felt it may reduce their overall operational flexibility:

"We have several sizes of vehicle in order to be flexible. But with say electric vehicles we wouldn't have the flexibility to send that vehicle on longer distances to other places instead if it wasn't needed for the city run. So I think that in this situation you would get certain additional carriers and companies offering to deliver anything in the city area from their depot".

*(Manager from freight transport company)*

This particular freight company foresaw a situation emerging in which some freight companies would purchase vehicles that met the local authority requirements and would then offer their specialist services to perform urban freight operations on behalf of companies that had chosen not to make this vehicle investment.

It is important to note that, in thinking about vehicle pollutant emissions, local authorities need to recognise that many goods vehicles are performing inter-urban trips *and* urban deliveries. If the authorities were to impose stringent vehicle emission standards for goods vehicle, such as zero- or near zero-emissions levels this would result in the need for freight companies to use one set of vehicles in urban areas to make deliveries and another set of vehicles to carry out the inter-urban journey from their distribution centre. One freight transport manager told us that:

"If they (local authorities) went for zero emission vehicles that would be a significant cost for operators to achieve that. The vehicle would have to be specifically designed and also it can't travel anywhere else".

*(Manager from freight transport company)*

This would be likely to also lead to more development of distribution depots on the edge of urban areas at which freight companies would transfer the goods between vehicles. This would obviously increase the demand for, and development pressures on, urban land and also increase the total cost of urban distribution.

## 4.9 More bus/cycles lanes

Most of the participants that we spoke to during the project felt that bus and cycle lanes hindered goods and service vehicle operations. Some also questioned the extent to which the decision to implement these features had proved successful. All the freight transport and service companies that participated in the study were opposed to the introduction of more bus-only lanes (see Section 3.5 for further details about views on allowing goods and service vehicles to use bus lanes).

## 4.10 Air quality

From our discussions with goods and service companies it would appear that many of them are not primarily concerned about the environmental impact of their operations. Instead their rationale for making fleet acquisition and operational decisions is based on economic and commercial criteria. A good example of this is the case of fuel use and particulate emissions. Participants in the discussion groups fleet that their companies are only concerned about the cost of fuel and fuel efficiency when deciding what fuel to use:

“It's (the fuel purchasing decision) purely commercial”.

*(Manager from freight transport company)*

“We use BP Greener Diesel. But if I'm honest it's not because of the environment, it's because of the cost of it”.

*(Transport manager from wholesaler making deliveries)*

“That's exactly the same as us. We use the BP Greener Diesel because its cheaper”.

*(Manager from freight transport company)*

Some companies will publicise a particular decision that they have taken if it happens to be environmentally-positive, but in reality this is a fortuitous coincidence as the rationale for the decision was entirely commercial.

This suggests that the government is right to use fiscal measures and other charging mechanisms in order to influence company behaviour, so that the companies make decisions that are in the interest of the environment as well as in their own commercial interest.

## 4.11 Urban road user charging

When asked what would happen if goods vehicles were charged to enter and operate in cities at certain times of day, a service company manager provided the following response:

“The people who have a choice may not drive into the city. We don't have a choice we have to come in and park”.

*(Manager from service company)*

Although road user charges would be borne not by the receiver or sender of the goods but by the freight transport company, it is a cost that is transparent. It is therefore possible that if there was a very clear transport policy about road user charging for goods vehicles operating in cities during busy times of day, that the freight transport companies would have a possibility of passing this cost onto their customers. If the receiver or sender should decide that they want the goods to be delivered or collected at a time when the road user charging is in force then the additional cost is easy to calculate and could, possibly, be more easily be passed onto the customer than some of the other cost increases that freight transport companies have to bear. At present many of the costs that the freight transport company incurs as a result of traffic levels, vehicle access time restrictions, and parking/unloading problems are implicit costs (such as the cost of trolleying goods further, and having to use extra vehicles and drivers) that are not at all obvious to the customer and are therefore difficult for the freight transport company to pass on. The same is true for the traffic delays, parking costs, and parking fines incurred by service companies.

However the transport and service companies that participated in the research were not very hopeful about their ability to pass on road user charges to their customers even though these costs would be transparent, although they would all obviously try to do so. They also thought that it was unlikely that they would be able to offer cheaper services to their customers at times when road user charges did not apply and thereby encourage their customers to demand collection and delivery work in urban areas during the off-peak:

“One customer may say, “Okay we'll have the delivery at 7pm” but others may not. It wouldn't work (unless sufficient customers accepted off-peak deliveries and collections)”.

*(Manager from freight transport company)*

“If some people want traditional morning time deliveries and others want out of hours deliveries, it just wouldn't work. Everybody would have to want to take deliveries out of hours for it to work, otherwise the cost to the carrier would increase as they would need to operate more rounds”.

*(Manager from freight transport company)*

Obviously goods and service companies would have to continue to provide the levels and time of service that they currently offer even if road user charging for goods and service vehicles was introduced. However, if the road user charge was sufficiently high it would result in less traffic on the roads and goods and service companies may receive some benefits from this in terms of faster and more predictable journeys, but this could be outweighed by the road charge levied.

City centre retailers that took part in the study are very concerned about what road user charging could potentially do to the level of customer demand in their shops, as the following conversation from a discussion group illustrates:

“If you introduced road pricing in say, Bristol, it would result in shoppers going to the enormous out of town shopping development, Bluewater could be similar. We as shoppers and individuals want clean, nice cities but when it comes down to it we are all horribly selfish and want to continue to drive our cars.”

*(Regional manager from retailer)*

“There is danger that it kills off the city centre. In Cambridge for example the introduction of very high car parking charges had an immediate effect on the number of shoppers in the city centre, and businesses began to struggle and closed”.

*(Distribution manager from retailer)*

“If someone is being charged say £5 for the privilege of going into a city what are they going to get for that? Is everything about the city going to be the same except that they now have to pay to come in - because if this is the case then the perception is that it's only about local government raising money, rather than it being about investing in the community. If instead there's a fancy reception centre, and a fantastic electric bus service then that would be fantastic. But if it is a charge and no improvements then it is hard to see how that benefits anybody”.

*(Regional manager from retailer)*

“There are two possibilities/sides of the coin. In somewhere like London there is a feeling that there is too much air pollution caused by road traffic and traffic needs to be reduced by 30% in order to reduce traffic, and air pollution to safe levels. Charging people to use road vehicles would bring about this reduction. On the other side of the coin, there is an argument that there is a need to improve public transport services, and that this money isn't going to be provided by the Treasury. So by using road pricing the

necessary money can be raised locally and ring-fenced, and then put back into public transport improvements”.

*(Facilitator)*

“That “where is it going to be invested?” question is going to be an important one. Reducing air pollution is important but nobody is going to go to a city high street just because the air is clean, people can go somewhere else to get clean air”.

*(Regional manager from retailer)*

A service company representative wondered whether service vehicles would still have to pay to use parking meters if road user charging was introduced:

“What about the parking? Would we still have to pay for that?”

*(Service engineer)*

“The argument is that they would improve public transport with the money raised from road pricing”.

*(Facilitator)*

“I thought that is what they were supposed to be doing already with the revenue from parking meters”.

*(Service engineer)*

If urban road user charging is introduced (for private cars and also for goods and service vehicle operating in urban areas) it could have significantly land use implications as companies may decide that it is cheaper to locate their premises outside the charging cordon. This would obviously also change the location in which goods and service operations take place in urban areas.

It could be argued that urban road user charging runs counter to the aim of concentrated development in towns and cities, which the government seems keen to promote. Road user charging will make it more attractive to locate outside the urban charging cordon, whereas local authorities are supposed to be encouraging town and city centre development.

If non-essential motor vehicle trips are reduced as a result of urban road user charging, local authorities will have to decide whether this additional capacity be given equally to all essential users (including goods and service vehicles) or whether the intention is to give particular categories of road traffic a greater share of this extra capacity. To achieve the latter would obviously require a sophisticated approach to ensure that this happened.

If local authorities decide to introduce both urban road user charging and workplace parking charging this could lead to a policy conflict as, depending upon their location in the city (i.e. whether the premises are either inside or outside the charging cordon) some businesses would have to pay both charges and other others only one charge or neither of these charges.

#### **4.12 Other non-transport policies that hinder goods and service operations**

Non-transport policies can also have an effect on goods and service company operations. Two examples of this that emerged during the research are the packaging waste legislation (which requires more packaging waste products to be recycled and transported over greater distances - see Anderson et al., 1998) and the working time directive (which affects the amount of time that drivers and engineers can be employed for on each shift and during each week - besides potentially increasing labour costs this can cause problems for goods or services that have to be supplied over long distances).

## **5. Company initiatives to improve the efficiency and sustainability of urban goods and service operations**

### **5.1 Introduction**

The policy measures that could be implemented by central and local government to help make goods and service transport more efficient and at the same time more environmentally sustainable were considered in chapter 3. There are also a number of initiatives that can be taken by companies themselves to make goods and service vehicles operations easier to perform either within the company or within the supply chain in which the company works. These initiatives can at the same time help to reduce one or more of the environmental impacts caused by goods and service vehicles. The interviews, discussion groups and other research activities that we have conducted as part of this project have helped us to form opinions about the relationship between all of the company initiatives discussed in this chapter and their potential impact on goods and service vehicle activity, and hence the environmental impacts of this activity. These relationships are shown in Table 6. These relationships are not always clear cut, and, in some cases, we believe that a particular company initiative could lead to an increase, decrease or no change in a particular aspect of vehicle activity. This is indicated in the table where appropriate.

**Table 6: Relationship between company initiatives (that could make freight operations easier to perform) and vehicle activity**

Company initiatives:	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption/ km	Vehicle size/ weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
Self-imposed collection and delivery time bans	○	○	○	○	○	↓	○	○	○/↑	○
Receiving premises helping to unload vehicle	○	○	○	○	○	○	↓	○	○	○
Receiver not needing to check deliveries	○	○	○	○	○	○	↓	○	○	○
Finding the right person at the receiver's premises	○	○	○	○	○	○	↓	○	○	○
Staff at the premises making deliveries/consolidating collections	○	○	○	○	○	○	↓	○	○	○
Receivers relaxing need for early morning delivery/being more realistic/truthful about when they really need delivery	↓	↓/○	○	○	○	↓	○	○	○/↑	○
Receivers operating vehicle booking-in systems efficiently	○	○/↓	○	○	○	↓	↓	○	○	○
Premises accepting out of hours collections and deliveries	○	○	○	↓	○/↑	↓	○	○	↑	↑
Days of week that premises accept collections and deliveries	○	○	○	○	○	○/↓	○	○	↑	○
Premises allowing goods and service vehicles to use off-street facilities where they exist	○	○	○	○	○	↓	○	○	○	○
Communication systems with shippers and receivers about distribution matters	○	○	○	○	○	○	↓	○	○	○
Freight and service operators buying the right type/size of vehicle for the operation	○	○	○	○	○	○	↓	○	↑	○
Urban container concept	○	○	○	○	○/↑	○	○	↓	○	↑

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

**Table 6: Relationship between company initiatives (that could make freight operations easier to perform) and vehicle activity (continued)**

Company initiatives:	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption/ km	Vehicle size/ weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
Companies encouraging employees to use public transport for journey to work	○	○	○	○/↓	○	○	○	↓	○	↑
Service companies obtaining as much information as possible when the problem is reported	↓	○/↓	○	○	○	○/↓	↓	○	○	○
Improved allocation of jobs to best suited engineers	↓	○/↓	○	○	○	○/↓	↓	○	○	○
Better communication between depot and driver/engineer	↓	○/↓	↓	○	○	○/↓	○	○	○	○
Improved routeing and scheduling	↓	○/↓	↓	↓	○	○	○	○	○	↑
Pricing by suppliers/wholesalers to deter trips delivering small quantities	↓	↓	○/↓	○	○	↓	○	○	○	○
Operating fewer but larger premises/distribution centres/warehouses	↓	↓	○/↓	○	○	○	○	○	○	○
Smooth, reliable supply from suppliers to wholesaler's/supplier's urban depot	↓	○	↓	○	○	○	○	○	○	○
Virtual transshipment/"City logistics" systems	↓	↓	↑	○	○/↑	○/↓	○	○	○	○
Shared user distribution	↓	↓	↑	○	○/↑	○/↓	○	○	○	○
Use of local suppliers/consolidated deliveries from them	↓	↓	↑	○	○/↑	○/↓	○	○	○	○

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

**Table 6: Relationship between company initiatives (that could make freight operations easier to perform) and vehicle activity (continued)**

Company initiatives:	Goods and service vehicles/vehicle activity in urban areas									
	Total trips in urban area	Total vehicles in urban area	Average trip length	Fossil fuel consumption/ km	Vehicle size/ weight	Number of vehicles parked on-street at busy times	Time spent parked or unloading on-street	Vehicles using inappropriate routes	Time of operation (inc. or dec.in out of hours work)	Vehicle speed
Driver efficiency	○	○	↓/○	↓	○	○	○	○/↓/↑	○	○/↑
Premises agreeing to receive fewer, less frequent deliveries	↓	↓	○	○	↑	↓	↑	○	○	○
Combined collection and delivery trips	↓	○/↓	○	○	○	↓	↑	○	○	○
Consolidation of goods to be returned	↓	↓	○	○	○/↑	↓	↑	○	○	○
Achieving backloads for returning vehicles	↓	↓	○/↑	○	○	○	○	○	○	○
Goods vehicles/drivers providing equipment and parts to service engineers	○/↓	○/↓	↓	↓	↓	○/↓	○	○	○	○
Premises using fewer goods suppliers	↓	↓	○	○	↑	↓	↑	○	○/↑	○
Use of vehicle telematics and data capture	○/↓	○/↓	↓	↓	○	○/↓	○	○	○	○
Modal shift	↓	↓	○	↓	○	↓	○	↓	○	○
Vehicle fuel efficiency	○	○	○	↓	○	○	○	○	○	○
The use of cleaner and alternative vehicle fuels	○	○	○	↓	○	○	○	○	○	○
Driver training/driver safety	○	○	○	○/↓	○	○	○	↓	○	○/↓
Design of off-street goods vehicle reception facilities at premises	○	○	○	○	○	↓	○/↓	○	○	○

**Key:** ↑ = Increase in vehicle activity pattern

↓ = Decrease in vehicle activity pattern

○ = No change in vehicle activity pattern

The company initiatives considered in this chapter vary in terms of: (i) responsibility for action - i.e. which party or parties in the supply chain need to change their operations to realise the initiative, and (ii) support for the initiative - i.e. which other party or parties in the supply chain need to support the initiative in order for it to be successful. Of the company initiatives discussed:

- Some require the action of one party in the supply chain and the support of none of the others (these are the easiest to achieve in managerial and implementation terms as long as they are commercially viable).
- Some require the action of one party in the supply chain and the support of other parties such as retailers, goods suppliers and freight transport companies (these are more difficult to achieve in managerial and implementation terms as they require dialogue and agreement between supply chain parties).
- Some require the action of more than one party in the supply chain to jointly implement changes to their operations so that the new more sustainable approach is feasible (these can prove more difficult as they require inter-company agreement and joint planning and working. It can have additional resource requirements such as labour or capital equipment for one or more of the parties and in these cases, in order for such changes to be implemented, it will be necessary that one of the following happens: (i) an improvement in some aspect of service or a reduction in operating costs to make the switch commercially viable, (ii) any cost savings by a party in the supply chain are divided fairly so as to compensate those parties that incur higher costs as a result of the change, or (iii) the change in practice will have to be encouraged or made compulsory by central or local government through either fiscal measures and price signals or by direct regulation).

The company initiatives also vary in terms of the time it would take to bring about the desired effect. For instance, the benefits of driver training programmes are immediate, whereas modal shift from road to rail and its associated benefits would take far longer to achieve. Many of the company initiatives discussed in this chapter require relatively small changes to existing operations and practices. However, a few initiatives would require a fundamental alteration of the existing supply chains within which companies work. For example, “city logistics” schemes in which companies providing freight transport services work jointly together to share loads. In these systems the customers of these freight transport companies need to accept the involvement of new companies in the supply chain (i.e. in the collection and delivery process) for it to be implemented.

Table 7 indicates the supply chain parties that we believe would need to take action or provide support for each of the company initiatives related to goods collections and deliveries if they were to prove successful. Table 8 does the same for the supply of services to urban premises.

**Table 7: Goods supply chain parties that would need to provide support/action so that company initiatives could be successfully achieved**

	Supply chain parties					
<b>Company initiatives:</b>	Freight transport operators	Urban premises that receive and despatch goods	Goods manufacturers and wholesalers	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
Self-imposed collection and delivery time bans	ACTION	ACTION			SUPPORT	
Receiving premises helping to unload vehicle	SUPPORT	ACTION				
Receiver not needing to check deliveries	SUPPORT	ACTION				ACTION - IT PROVIDERS SUPPORT - INSURANCE COMPANIES
Finding the right person at the receiver's premises	SUPPORT	ACTION				
Staff at the premises making deliveries/consolidating collections	SUPPORT	ACTION				
Receivers relaxing need for early morning delivery/being more realistic/truthful about when they really need delivery		ACTION				

N.B. When referring to Table 7 it is important to bear in mind that “Goods manufacturers and wholesalers” that perform their own deliveries to customers are also “Freight transport operators”.

**Table 7: Goods supply chain parties that would need to provide support/action that company initiatives could be successfully achieved (continued)**

	Supply chain parties					
	Freight transport operators	Urban premises that receive and despatch goods	Goods manufacturers and wholesalers	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
<b>Company initiatives:</b>						
Days of week that premises accept collections and deliveries	ACTION	ACTION			POSSIBLE SUPPORT/ACTION	
Premises allowing goods vehicles to use off-street facilities where they exist		ACTION			POSSIBLE ACTION	
Communication systems with shippers and receivers about distribution matters	ACTION	ACTION	ACTION			
Freight operators buying the right type/size of vehicle for the operation	ACTION			ACTION		
Urban container concept	ACTION	ACTION		ACTION	SUPPORT	ACTION - SYSTEM DEVELOPERS
Companies encouraging employees to use public transport for journey to work	ACTION	ACTION	ACTION		ACTION	
Better communication between depot and driver	ACTION					
Improved routeing and scheduling	ACTION					ACTION - IT PROVIDERS
Receivers operating vehicle booking-in systems efficiently	ACTION	ACTION				
Premises accepting out of hours collections and deliveries	ACTION	ACTION			POSSIBLE SUPPORT/ACTION	

**Table 7: Goods supply chain parties that would need to provide support/action so that company initiatives could be successfully achieved (continued)**

	Supply chain parties					
	Freight transport operators	Urban premises that receive and despatch goods	Goods manufacturers and wholesalers	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
<b>Company initiatives:</b>						
Pricing by suppliers/wholesalers to deter trips delivering small quantities		SUPPORT	ACTION			
Operating fewer but larger premises/distribution centres/warehouses	ACTION	ACTION	ACTION			
Smooth, reliable supply to wholesaler's/supplier's urban depot	ACTION		ACTION			
Virtual transshipment/"City logistics" systems	ACTION	SUPPORT	SUPPORT		SUPPORT/ACTION	
Shared user distribution	ACTION	SUPPORT	SUPPORT			
Use of local suppliers/consolidated deliveries from them	ACTION	ACTION	ACTION			
Driver efficiency	ACTION					
Premises agreeing to receive fewer, less frequent deliveries		ACTION	ACTION		SUPPORT/ACTION	
Combined collection and delivery trips	ACTION	ACTION	SUPPORT			
Consolidation of goods to be returned	SUPPORT	ACTION	SUPPORT			

**Table 7: Goods supply chain parties that would need to provide support/action that company initiatives could be successfully achieved (continued)**

	Supply chain parties					
<b>Company initiatives:</b>	Freight transport operators	Urban premises that receive and despatch goods	Goods manufacturers and wholesalers	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
Achieving backloads for returning vehicles	ACTION					ACTION - FREIGHT EXCHANGE SYSTEMS
Goods vehicles/drivers providing equipment and parts to service engineers	ACTION					
Premises using fewer goods suppliers		ACTION				
Use of vehicle telematics and data capture	ACTION			ACTION		ACTION - IT PROVIDERS
Modal shift	ACTION	SUPPORT/ ACTION	SUPPORT/ ACTION		SUPPORT/ ACTION	
Vehicle fuel efficiency	ACTION			ACTION	SUPPORT/ ACTION	ACTION - DRIVER TRAINING AGENCIES
The use of cleaner and alternative vehicle fuels	ACTION			ACTION	SUPPORT/ ACTION	
Driver training/driver safety	ACTION				SUPPORT	ACTION - DRIVER TRAINING AGENCIES
Design of goods vehicle reception facilities at premises	SUPPORT	ACTION			ACTION	ACTION - ARCHITECTS

**Table 8: Service supply chain parties that would need to provide support/action so that company initiatives could be successfully achieved**

	Supply chain parties				
	Service companies	Urban premises that receive services	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
<b>Company initiatives:</b>					
Finding the right person at the receiver's premises	SUPPORT	ACTION			
Days of week that premises accept servicing		ACTION		POSSIBLE SUPPORT/ACTION	
Premises allowing service vehicles to use off-street facilities where they exist		ACTION		POSSIBLE ACTION	
Service companies buying the right type/size of vehicle for the operation	ACTION		ACTION		
Service companies obtaining as much information as possible when the problem is reported	ACTION	SUPPORT			
Improved allocation of jobs to best suited engineers	ACTION				ACTION - IT PROVIDERS
Better communication between office and engineer	ACTION				
Improved routeing and scheduling	ACTION				ACTION - IT PROVIDERS
Driver efficiency	ACTION				

**Table 8: Service supply chain parties that would need to provide support/action that company initiatives could be successfully achieved (continued)**

	Supply chain parties				
	Service companies	Urban premises that receive services	Vehicle manufacturers/fuel suppliers	Local authorities	Other parties
<b>Company initiatives:</b>					
Use of vehicle telematics and data capture	ACTION		ACTION		ACTION - IT PROVIDERS
Vehicle fuel efficiency	ACTION		ACTION	SUPPORT/ACTION	ACTION - DRIVER TRAINING AGENCIES
The use of cleaner and alternative vehicle fuels	ACTION		ACTION	SUPPORT/ACTION	
Driver training/driver safety	ACTION			SUPPORT	ACTION - DRIVER TRAINING AGENCIES

Whilst many companies claim to have environmental credentials and some publish environmental mission statements and reports, the number of companies that are truly committed to reducing their impact on the environment is probably relatively small. Although many companies would, given an unconstrained choice, obviously prefer to inflict less rather than more environmental damage, in reality commercial decisions tend to come before environmental ones. If a choice that is commercially sound results in more environmental damage than another choice which is less commercially viable, then the former may well be selected.

It is often the case that larger companies are both better placed and more predisposed to implement changes to their operations that will have a social or environmental benefit. In some cases large companies have voluntarily introduced changes in their operations in an attempt to try to reduce their environmental impact. Policy makers made the following comments during the study:

“It is the large firms that always benefit in relative terms from policy changes. Smaller firms are unable to make expensive changes or to do the work necessary on their fleet to obtain voluntary exemptions. However, small firms are of crucial importance to the diversity and vitality of Norwich”.

“It is large firms that are focused on change and improvement in efficiency/environmental terms. Small firms (especially transport firms) aren't part of this; they either have a different agenda or are choosing not to participate. If they are interested in such matters, it tends to be on a different level” (for example they are more interested in fuel theft than fuel consumption and pollution).

The greater efforts that are often made in this direction by larger companies are related to a number of factors, including that large companies tend to:

- have more money available for capital investment;
- have more specialised employees who are aware of new developments and technologies that could benefit the company;
- be more concerned about their environmental credentials as they have a high profile and shareholder input to the business.

A key challenge is to identify how to bring about best practice in all freight transport and service companies and all other companies involved in the supply chain regardless of size, as small improvements in all companies are likely to be more beneficial as a whole than bigger improvements that only take place in large companies. Also the research has identified that smaller, often independent premises can generate a total number of freight trips that is disproportionate to their size, while some of the largest urban retailing premises generate only a single freight trip per day for their core goods requirements (see Working Report 2). It is therefore of great importance that efforts are made to bring about change that leads to improvements in the sustainability of goods and service flows at all urban premises, regardless of size.

## **5.2 Company initiatives**

The company initiatives discussed in this section would have one or more of the following beneficial effects on the environmental impact of goods and service vehicle operation in urban areas:

- reduction in traffic disruption caused by goods and service vehicle operations (which can be due to a number of factors including the time at which vehicles are operating, whether vehicles can use of off-street parking/unloading facilities, and the time taken for delivery/collection - and the dwell time of vehicles)
- reduction in the number of vehicle trips in the urban area
- reduction in the vehicle mileage in the urban area
- improvement in the fuel efficiency of vehicles

- reduction in vehicle pollutant emissions
- improvement in the safety of goods and service vehicle operations

Some of the initiatives are operational, some are organisational, some are technological and some are economical (i.e. sending out the correct signals via pricing policies).

### **5.2.1 Self-imposed collection and delivery time bans**

A representative from a large city centre retailer that participated in one of the discussion group sessions told us that they had introduced restricted delivery times themselves as they were aware that if they did not do this themselves, then restrictions would be imposed on them by the local authority. Although they were not keen to introduce such restrictions, it suited them better to impose their own restrictions, rather than have restrictions imposed on them by the local authority that could potentially be less suitable or harsher than their own. As a result of their self-imposed delivery restrictions they no longer accept deliveries between 11 am to 3 pm.

This illustrates that when placed under some pressure to change their behaviour by local authorities, companies are capable of implementing their own changes which make their goods and service operations more environmentally sustainable rather than having to have this imposed on them through local authority regulations and restrictions.

### **5.2.2 Receiving premises helping to unload vehicle**

Staff at some premises receiving goods deliveries are more helpful than staff at others when it comes to providing the driver with assistance in unloading the vehicle. For some deliveries which are small and lightweight the drivers often does not require help. But when the delivery is large and/or heavy assistance from staff at the receiving premises can help to reduce delivery time considerably.

Drivers from one company that we interviewed, which makes deliveries of building materials, often require assistance from the receiver in unloading the vehicle. Usually this is forthcoming but when it is not (most commonly with residential premises), the delivery cannot always be made and, in this situation, the vehicle then has to return to the premises at some other time to try to make the delivery again.

### **5.2.3 Receiver not needing to check deliveries**

Most premises receiving goods insist that they check goods before they provide the goods vehicle driver with a signature and allow them to depart. From our conversations with freight transport companies, the degree of checking can range from counting the number of parcels or boxes delivered through to opening boxes and counting and checking each product individually.

Although it is quite understandable that receivers should want to check the goods, as once they sign they take responsibility for having received what is printed on the delivery note, the extent to which they check and hence the time taken could potentially be reduced in some cases. This would reduce the time taken for the delivery and improve vehicle and driver productivity, thereby increasing the number of drops that can be made on a multi-drop round and reducing the total number of vehicles and trips required to deliver all the goods in the urban area. It would also reduce the time spent dealing with the delivery by staff at the receiving premises. It therefore has economic and environmental advantages.

In some instances it may be possible to completely remove the need for any checking of the delivery by staff at the receiving premises. We interviewed representatives of several multiple retailers during the research who have internally centralised goods supply systems and have already removed the need for the receiving premises to check the goods in order to reduce the time taken for the delivery. They told us that this has resulted in significant benefits in terms of vehicle turn around times and the

time spent by shop staff receiving the delivery. There is no reason why all premises using an internally centralised goods supply system cannot implement this approach.

Obviously, reducing or completely removing the checking of deliveries requires that care is taken to check that the delivery loaded onto the vehicle is correct and undamaged, that the driver takes care in making sure that the right goods are delivered (otherwise it would result in many additional trips to put right incorrect deliveries) and also that a suitable system is put in place between those companies in the supply chain so that if a premises subsequently finds something wrong with the delivery this can be easily rectified. However as long as this degree of care is taken, reducing, and in some cases totally removing, the need to check deliveries would be beneficial to both companies and society.

#### **5.2.4 Finding the right person at the receiver's premises**

At some premises it is necessary for the driver to make the delivery to a specific person. When this person is not available at the time when the driver arrives or they are not at work on that particular day this can result in delays to the delivery or can prevent the delivery from being made on that day, and therefore results in another vehicle trip. Receiving premises could assist in helping to remove this source of delivery disruption by making sure that if the person that normally receives the delivery is unavailable or not present that someone else is made responsible and made aware of the expected deliveries. This would be relatively easy to achieve in terms of the organisation and communication it would require.

Receiving premises need to be aware that in some cases the person that receives the delivery from the driver can be particularly unhelpful or can place totally unnecessary requirements on the delivery. Several freight transport companies have told us that they experience these types of problems, albeit at a small number of receivers' premises.

The receiving premises should attempt to remove any unnecessary requirements placed on the delivery by its staff and discipline their staff if they prove particularly difficult or unreasonable towards delivery drivers. By communicating more closely the supplier, freight transport company and receiver should be able to remove such difficulties relatively easily.

Service companies that participated in the study experience similar problems on a relatively frequent basis. They have the name of a person to report to when they arrive at the premises, but when they arrive this person is either temporarily unavailable (resulting in a delay to the service engineer) or is not on the premises and no other employees are aware of the work that is required of the engineer (making it a wasted trip and resulting in the need for another trip to be made to the premises). This could be easily overcome by: (i) the contact person at the premises making colleagues aware of the engineer's expected arrival and the work to be completed or documenting the work to be carried out in a systematic manner that can be referred to by colleagues, and (ii) the service company gathering more details of the nature of the work to be carried out and the contact/s at the premises when logging the customer's request.

#### **5.2.5 Staff at the premises making deliveries/consolidating collections**

Some freight transport companies that participated in the study are increasingly being asked by single-tenanted premises to deliver goods to somewhere within the premises or to their staff desks, rather than simply making the delivery at the back or front door. In the case of deliveries to some retailers, the delivery driver has traditionally trolleyed the goods directly into their sales area or store room. This is, however, now becoming more prevalent in office environments in which the delivery driver has to deliver different goods to different floors in the building. This increases the time taken to make the delivery and thereby reducing the vehicle and driver productivity. If the receiver were to take responsibility for distributing the goods within their premises this would reduce the number of vehicles required. However it does of course mean that this internal distribution system is resourced by the premises themselves.

If premises would take more responsibility for internal distribution within their premises this would also be beneficial in terms of the time taken for deliveries in multi-tenanted sites such as offices and shopping centres. In some offices and shopping centres the driver currently has to make numerous trips from their vehicle to different points of delivery and the distances involved can be substantial, involving the use of lifts and stairs. Drivers can also become lost in such premises thereby further increasing the time taken for delivery. Delivery drivers could make deliveries to a single person in a single easily accessible location, and this person would then be responsible for distributing the goods to tenants within the building.

Linked to this notion of a single delivery point within a building is the notion of a consolidation point or transshipment centre that is located close to a number of city centre premises. This transshipment centre could receive all the deliveries for those premises and then deliver them on to the premises in a single delivery (see Section 3.21 for further details). This approach could potentially have both commercial and environmental benefits if carefully planned and organised.

### **5.2.6 Receivers relaxing the need for early morning delivery/being more truthful about when they really need delivery**

Many premises sending and receiving goods on vehicles performing multi-drop rounds are becoming increasingly demanding about receiving their delivery at specific times that suit them. Also, some premises are requesting to be the first point of delivery. In the case of service companies, their customers are requiring ever more rapid response times.

There are two potential approaches that companies could take to ease the delivery pressures that this creates and the problems that this causes, in terms of vehicles travelling further than necessary in the course of their round. First, shippers and receivers could become more flexible about delivery times, and be more honest about when they really need a delivery to be made by, rather than specifying what time would ideally like the delivery to be made. However this is unlikely to happen by itself.

The second approach would involve freight companies informing their customers that they can no longer match their desired delivery times or, alternatively, charging a significant premium for this service so as to dissuade them from selecting times they cannot easily cater for. Freight transport companies and service companies are also partly to blame for the very tight time constraints that they are operating within. In many cases it is the freight companies that have chosen to offer their customers a greater range of timed delivery services, or to deliver at a specific time chosen by the receiver, or in the case of service companies to promise ever-shorter response times. They have done this in order to win new customers and increase market share or to match the improved service level being offered by a competitor. As traffic levels have increased and delivery restrictions have become more stringent it has become ever-more difficult for them to achieve these service standards. At some point in time it will become necessary for them to tell their customers that these continual improvements in timed deliveries are no longer achievable without a significant rise in costs, as a result of the need to deploy more vehicles and drivers. However, while serving customer demand, the current service levels are resulting in the need for more vehicles, more trips, more mileage, greater total fuel consumption and pollutant emissions, to carry out the same quantity of work.

It may well prove to be more commercially (and environmentally) beneficial for freight and service companies and their customers to begin to renegotiate the delivery/response times that are currently being offered and requested. Where such onerous response times and timed deliveries are not really required, these customers would be able to benefit from reduced prices, and goods and service companies would not require such large vehicle fleets and could also reduce some of their other vehicle operating costs. It would also make it far easier for suppliers performing their own deliveries and freight transport and service companies to incorporate new customers into the service and delivery schedules thereby increasing their revenues.

### **5.2.7 Receivers operating vehicle booking-in systems efficiently**

Receivers that request that freight companies make deliveries and collections at prearranged times to suit the staff at the premises need to operate these systems efficiently so that vehicle queuing does not result at the premises, which has the effect of delaying the vehicle and driver.

Freight companies can accommodate a certain number of timed deliveries and collections into their daily operations as long as they know well in advance what are the receiver's collection or delivery time requirements. However, if the number of receiver's requesting timed deliveries/collections continue to increase it will reach a point where it is necessary for the freight transport companies to acquire additional vehicles and drivers to meet these demands and to therefore operate additional vehicle trips and perform more vehicle kilometres.

As mentioned earlier (see Section 5.2.6 - on shippers/receivers being honest about their delivery requirements), there are two approaches to overcoming the problems caused by rigid time constraints for collection and delivery operations: either (i) shippers and receivers could become more flexible about delivery times, (which is unlikely to happen by itself), or (ii) freight transport companies inform their customers that they can no longer match their desired delivery times or charge a significant premium for this service so as to dissuade them from selecting times they cannot cater for.

### **5.2.8 Premises accepting out of hours collections and deliveries**

Many premises receiving deliveries or requiring collections of goods do not currently allow this activity to take place outside of their normal working hours. The key reasons for this are that they are concerned about the security of their premises and the accuracy of deliveries if their staff are not present at the time of delivery. There are three possible solutions to their concerns about the security of their premises if receiving out-of-hours deliveries:

- i. the premises employ staff to be present at the premises at the time of the delivery;
- ii. the premises provide door keys to the premises to the delivery company and make changes to their premises so that the keys only provide access to a delivery/collection area inside the front or back door rather than to the whole premises;
- iii. the premises install some type of lockable box or receptacle outside the premises or attached to the premises into which goods can be delivered to or collected from.

None of these solutions are widely used by receivers as they are all perceived as costing more than their current delivery arrangements (either in terms of the labour requirements, the cost of changing the layout of the premises or the cost of a depository box). However, premises that have had to permit delivery and collection work to take place outside normal working hours have adopted one of these approaches without any apparent difficulties.

*Option (i)* is widely used by multiple grocery retailers who already employ staff on a 24 hour basis. Staff working outside normal opening hours unpack goods and restock the shelves, as well as receiving deliveries, and are therefore productively employed.

*Option (ii)* is used by banks. Banks are designed so that anyone would need to get through three more doors beyond the front door to get to the safe, and the driver is only issued with keys to the front door. For most premises it would only be necessary to fit one more secure door inside the front or back door (with deliveries left inside the front or back door). In some small premises this may not be possible for space reasons, but it should be feasible in most premises. Premises using this approach need to liaise closely with the freight company so that the driver knows how to avoid setting the security alarms off too regularly (this had led to the downfall of this approach at one premises we interviewed).

*Option (iii)* is used by newsagents who need to receive their newspapers and magazines in the small hours of the morning. Many newsagent shops have lockable metal cabinets outside them into which papers are delivered and unsold papers from yesterday can be collected. Another variant on this concept emerged during a discussion group session: a deposit box could be clamped onto the outside of premises, goods could be placed in the box and a conveyor belt would then feed these deliveries inside the premises.

Making out-of-hours collections and deliveries are less costly for freight transport companies as a result of the much faster rate at which collections and deliveries can be made. This is possible because traffic is in a free flow condition on the roads at this time, it is easy for the driver to park right outside the premises, and in options (ii) and (iii) there is no checking and signing for goods at the receiving premises. Our research findings suggest that the key factor preventing receivers from accepting out-of-hours deliveries is the additional cost that this would incur them in. It is therefore necessary for freight companies and receivers to find a way to share the cost saving made by the freight company to help compensate the receiver for the additional costs they have to bear. One supplier making deliveries to customers that we interviewed told us that they would actually be prepared to pay for deposit boxes outside their customers' premises if this would allow them to make out-of-hours deliveries. In the situation in which the premises receiving the delivery does not directly pay the freight company (which is common in the case of many urban deliveries made by express and freight transport companies in which the sender pays the deliverer), it may well be necessary for this negotiation to take place between all three parties: shipper, receiver and freight company.

Making out-of-hour deliveries may prove difficult for some freight transport companies if the sender and receiver want the goods to be delivered the night prior to the morning on which the goods are currently delivered. For express and parcels companies offering next day delivery services, the goods tend to be trunked into their local depots from a main sortation hub in the early hours of the morning. The goods then have to be sorted and loaded onto vehicles, and the information needs to be processed and organised into the delivery rounds. In these types of operation it may therefore be difficult to despatch the vehicles from the depot much earlier than they are currently (at about 8.00-8.30am). Goods cannot be trunked into the local depots any earlier as freight companies are making collections until late in the evening from their customers. However, even if it was not possible to make deliveries earlier in the morning than they are at present, it would be possible for the local depot to hold the goods until the evening and deliver them then instead. This would actually allow even greater efficiency improvements for the transport company as deliveries could be consolidated even more than they are currently. As one participant in a group discussion said:

“Through the night deliveries if the driver has key access could be a good one to explore. Especially if the retailer then knows that when their staff come to work at 9am the next morning the deliveries are already there”.

*(Manager from freight transport company)*

However this would result in premises receiving goods a working day later than they do currently and according to some retailers that participated in the study this would cause them problems:

“But from a retail perspective this could be viewed as a day's sales lost”.

*(Retailer)*

However one retailer told us:

“It is all about preserving the lead time. So if you get into a regular practice of receiving 8pm deliveries but at the same time preserve a 3 day lead time from order to supply then this wouldn't matter at all to the retailer”.

*(Regional manager from retailer)*

As a sizeable proportion of city centre shops are now staying open until 8, 9 or 10pm it would also be possible to make deliveries at these times and the receiver would still have staff on the premises. As one representative from a retail company told us:

“There's no real reason why they couldn't receive deliveries at these times”.

*(Distribution manager from retailer)*

If freight transport companies performing multi-drop deliveries do begin to make evening or night deliveries it is important for the efficiency of their deliveries that sufficient receivers accept this new delivery time, as the following conversation during a discussion group indicates:

“This could be okay as long as you're still getting the consolidation. What you don't want is half the customers saying, “I want it at 8pm” and the other half saying, “I want it at 9am in the morning”. This would double the number of loads, vehicle trips etc.”

*(Manager from freight transport company)*

“If you had one set of deliveries at one time of day, and another set of deliveries at another time this would increase our vehicle needs and costs, not reduce it. We would need all or many customers to change to the new delivery hours”.

*(Manager from freight transport company)*

“Dialogue is crucial to avoid this happening”.

*(Facilitator)*

Therefore, introducing out-of-hours deliveries is only likely to be operationally and commercially feasible from many freight transport companies' perspectives if a sufficient number of receivers accept deliveries at these times. However, it is difficult for the companies involved to discuss issues such as these, as shippers and receivers who are competitors are not used to sitting down and collectively talking and agreeing change. While making more deliveries out-of-hours could ultimately benefit all the companies involved, there is often currently no mechanism for bringing about collective change and making a collective decision in the supply chain.

### **5.2.9 Days of week that premises accept collections and deliveries**

The vast majority of goods collection and delivery work takes place on weekdays, with many premises only accepting deliveries from Monday to Friday. Some premises also accept deliveries on Saturday mornings but hardly any of the premises studied accept deliveries on Saturday afternoon or Sunday.

The reason for most retailers not wanting deliveries on Saturdays is that this is their busiest day of the week and they tend to want their staff serving customers rather than dealing with goods deliveries and collections:

“Saturday has traditionally always been the busiest trading day in shops and it is also the worst time for (name of freight transport company) to deliver because shops don't want to receive deliveries on Saturdays. They don't want people downstairs unloading and receiving deliveries, they want people selling on a Saturday”.

*(Manager from freight transport company)*

“You tend to gear your shop up for the weekend. So you get your deliveries in earlier in the week and want to maximise your sales team on a Saturday”.

*(Regional manager from retailer)*

Sunday deliveries are not usually accepted at retail premises because traditionally this has been a day on which premises did not trade. Weekend goods deliveries at other non-retail premises are generally

not accepted as the premises are shut at these times and deliveries are only accepted during normal working days/hours.

From interviewing freight transport companies during the research it is apparent that they would be prepared to carry out collection and delivery work all day on Saturday and Sunday if there was sufficient throughput to justify working it. Having to employ staff to work at weekends would not necessarily increase their wage costs. Instead Saturday and Sunday could eventually become normal working days, so the companies would not necessarily have to pay overtime rates. They could change employees' contracts so that rather than working the traditional Monday to Friday there would be Tuesday to Saturday, and Wednesday to Sunday contracts. Alternatively, employees could be asked to work any five days out of seven. Another idea that a supplier participating in a discussion group wanted to explore was that of an employee contract involving a twelve hour working day, three days per week to allow people with children to spend more time with them and save on child minding costs. This approach could be used to encourage employees to work on Saturdays, Sundays and at night at no significant extra labour costs.

Sunday retailing is becoming increasingly common in the UK and is likely to increase in the coming years:

“We're obviously responding to customer demand and the trend is that, by and large, people just want to shop longer and longer hours”.

*(Distribution manager from retailer)*

“Sometimes you feel it would be nice to say, “well these are the opening hours of our shop” but of course increasingly our focus is on what the customer wants, the customer drives our business, and they want more and more hours in which to choose when to come and shop”.

*(Regional manager from retailer)*

Opening hours and days are also influenced by the opening times of other shops open as well.

Receiving deliveries on a Sunday could have several advantages for retailers. If Sunday were to become a normal working day and the retailer is employing staff for eight hours on a Sunday, but the shop is only open to the public for six hours, then staff will be working for two hours when there are no customers. Sunday shopping is also currently less frenetic than it is on Saturday, making the receiving of deliveries on Sunday less disruptive. It is also likely that as seven day per week trading becomes more common, retailers will not want to have a situation in which they receive no deliveries whatsoever for a two day period, especially as order lead times are so important to many of them:

“(Name of a book shop in London) stays open until 11pm and on a Saturday evening there are masses of people in there. Book publishers may have to compensate for this. If someone wanted a book on Saturday evening at present the earliest they would get it is on Tuesday. In supermarkets at 1am in the morning there are more people in the leisure sections than anywhere else. This is because people only buy groceries at 5pm on the way home and they are in a hurry, but people shopping at unusual times during the night have more time and are not under the same pressures so they browse more.”

*(Distribution manager from supplier)*

“(Name of freight transport company) has started a Sunday service in the autumn for collections. This is because Sunday is more of a relaxed shopping day. As mentioned anything ordered on Saturday wouldn't be delivered until Tuesday. However by collecting from suppliers on Sunday afternoon (these being orders placed on suppliers on Saturday and Sunday morning) we can process these goods on Sunday evening/night and get it into the shops on Monday morning. But this a service that we only provide in the run up until Xmas for about 8 weeks each year, but this is likely to develop”.

*(Manager from freight transport company)*

It is therefore possible that as more shops begin to open to customers on a Sunday, Sunday will come to be seen by retailers as a good day on which to receive deliveries. Sunday is also a good day for making deliveries for freight transport companies as roads are less busy than on Saturday and many of the delivery restrictions that exist during the week are not imposed on a Sunday. However, if Sunday were to become a normal working day then the same vehicle access and delivery restrictions might be imposed on a Sunday as are currently in force from Monday to Friday.

Deliveries on Sundays and possibly all weekend would help to smooth out the current delivery pattern, so that there was less of a peak in deliveries on Fridays and Mondays which can cause congestion on particular streets. This peak in deliveries can also cause delays to goods vehicles at premises where many other vehicles are also queuing to make deliveries. It could therefore potentially reduce the time taken per delivery and hence improve vehicle/driver productivity.

#### **5.2.10 Premises allow goods and service vehicles to use off-street facilities where they exist**

Some premises with off-street parking and loading facilities do not allow goods vehicles to use these facilities. If these premises were to allow goods vehicles to use these facilities when visiting them it would make the task far easier. It would also reduce the time taken for the collection/delivery which would also have benefits for the premises in terms of the amount of time their receiving staff are tied up for, and would reduce the traffic disruption caused by the goods vehicle.

The same is true for service operations. If engineers/providers were allowed to park their vehicles in off-street facility at the premises this would reduce the time taken for the work to be completed (especially if the engineer/provider has to return to their vehicle during the job to get more equipment or parts), reduce the parking costs and fines incurred by service companies (which could be shared with customers allowing them to use car parking facilities) and reduce the traffic disruption that is caused by having service vehicles driving around cities trying to find an on-street parking space.

We were informed by freight drivers and service engineers that in many instances even when a city centre premises has off-street facilities they are often not allowed to use these facilities:

“Even if they have a car park they won't let you in”.

*(Team leader from service company)*

“If it exists it's just for management”.

*(Service engineer)*

“(Name of customer) won't let us park there (in the off-street car park), we have to drop a man off with the goods there and pick him up later on”.

*(Goods vehicle driver)*

Service companies could also become better at checking whether off-street facilities are available at the customers' premises when the customer requests servicing. Some of the service companies that participated in the study do not ask customers this and therefore when the engineer arrives at the customer's premises they either assume that there is no possibility of them using the car park or, when they ask, they find that they have provided too little notice for this to be arranged. Service companies could also offer discounts to customers that can provide off-street car parking space when renegotiating contracts.

Local authorities could also play a role in helping to encourage premises to make off-street facilities available to goods and service vehicles by offering financial incentives in terms of reductions in commercial rates for those premises willing to assist.

### **5.2.11 Communication systems with shippers and receivers about distribution matters**

Freight transport companies and suppliers operating their own delivery vehicles could put in place information systems for senders and receivers of goods whereby they would use a data exchange system or the Internet to obtain the latest information about the status of goods being collected or delivered. This type of system could also be used to inform senders and receivers about distribution problems that are occurring due to factors such as traffic levels or weather conditions.

Such systems could help to prevent employees at the premises from wasting time unnecessarily waiting for a delayed or aborted delivery. It would also help to ensure that employees at the premises are aware of the expected arrival time of the vehicle and therefore make themselves ready to deal with it, so that the vehicle is not delayed due to staff at the premises being unavailable or tied up doing something else when it does arrive. This also has commercial advantages for the receiving premises as they are able to prevent resource waste by deploying staff waiting to help receive a delivery to other tasks if the vehicle is delayed. It also allows the manager of the premises to make more informed decisions.

### **5.2.12 Freight and service operators buying the right type/size of vehicle for the operation**

Those making the vehicle acquisition decision in companies performing goods collections and deliveries in urban areas need to be fully aware of the type of work performed in the operation and the specific urban area in which the vehicle will be used. This would help to overcome some of the problems we have encountered during the research which include:

- the vehicles being too large for the operation (which reduces load factors and can cause unnecessary traffic disruptions)
- the vehicle having too low a payload for the operation concerned (which leads to more vehicle trips being performed)
- the vehicle having the wrong type of on-board unloading equipment for the operation (which increases unloading time and increases the risk of an accident occurring during unloading)

Choosing the correct vehicle for the job to be performed can therefore increase the efficiency of the operation, improve its safety and reduce its environmental impact.

### **5.2.13 Urban container concept**

In one discussion group session the idea of using a specially designed relatively small container for deliveries in urban areas was suggested by a participant. Rather than having to unload the goods from the vehicle and then the receiver check all these goods and sign for them before the driver/vehicle could depart, the container would simply and quickly be delivered to the premises and the driver/vehicle would then depart immediately, thereby minimising the vehicle dwell time for deliveries in the city centre. The delivery could also be made outside of peak hours, possibly during the night or very early morning.

While this concept may have some merit, the container would have to be carefully designed to avoid vehicle overloading problems on a specific axle when containers are loaded and unloaded. Suitable loading and unloading points for these containers would also need to be designed at premises, but this would be problematic at premises that have no off-street facilities.

This container concept also runs counter to the fact that many premises receiving deliveries want goods to be delivered in less packaging and containers rather than more. In this sense it is possible that the empty containers could present a nuisance to the premises.

#### **5.2.14 Companies encouraging employees to use public transport for journey to work**

Several freight transport and service companies that we interviewed felt that companies based in congested city centre locations should discourage their staff from driving to work, and should provide them with incentives to use public transport (such as subsidising the use of park and ride facilities, or making a contribution towards public transport fares).

#### **5.2.15 Changes in working practices that lead to (as a side-effect) reduced trips/mileage**

A couple of the service companies that we interviewed provide their drivers with company vans or cars which the employee takes home with them, while in some other service companies interviewed the employees have to provide their own vehicles. In the case of these companies, the employee does not have to begin and end their working day at a company depot and this therefore allows them to travel straight to their first job from their home, and to return directly home after finishing their final job of the day which reduces their daily mileage.

If several service tasks need to be performed at one premises, the service companies interviewed try to allocate all these jobs to the same engineer wherever possible. This obviously helps reduce the vehicle mileage performed.

One service company interviewed had taken the following measures to improve their own efficiency which have had an impact on the amount of mileage that their engineers perform, they:

- have changed working patterns with regard to collecting spare parts, to reduce the distance travelled by engineers;
- allowed engineers to work from home - reduce travelling time to first job as they drive straight to customer rather than via a depot to pick up a van - this can however add to total mileage for the company's vehicles (mileage to and from home can exceed daily mileage between customers)
- can remotely test faults at customers' premises;
- carry out preventative tests;
- employ and train their engineers to be multi-skilled to prevent the problem of only having a small number of engineers capable of repairing a particular problem or being able to deal with particular equipment (used to be separate teams for on-street work, maintenance and installation work);
- encourage engineers to contact customer before arriving on-site to check that the trip will not be a wasted one.

All of the above measures were implemented by the company to improve customer service levels. However they have had an unintended beneficial effect on the distance travelled by their engineers.

#### ***Service companies obtaining as much information as possible from the customer when the problem is reported to reduce trips without the required parts, by wrong engineers etc.***

Service companies can help to reduce the number of wasted and unnecessary trips to customers' premises by obtaining information from the customer at the time of that they contact the service company for assistance. Helpful information includes full details of the customer's requirements or problem, the precise location of the equipment to service, and the staff contact/s that the engineer should ask for when they arrive at the premises. Also, asking whether off-street car-parking space is available at the customer's premises can help to reduce the time and mileage wasted by the engineer trying to find somewhere to park and the time spent walking from the vehicle to the premises (see Section 5.2.10). In addition, the engineer can contact the customer by mobile telephone before commencing their journey to the premises to ensure that it is suitable to the customer. This helps to prevent the following types of wasted and unnecessary trips to customers' premises:

- an engineer with the wrong skills is being sent to the premises
- the engineer does not have the necessary tools or spare parts when they arrive at the premises

- the contact at the customer's premises is not on-site or is unavailable when the engineer arrives and no-one else at the premises knows about the problem or service requirement
- the engineer cannot gain entry to the premises

Several of the service companies that we interviewed attempt to gain as much of this detail from customers as possible, but others do not. There is therefore scope for some service companies to become better at communicating with their customers and thereby reducing unnecessary trips and mileage.

***Using IT or common sense to allocate job to best-suited engineers (based on skills, geographic location etc.)***

Efficient routing and scheduling by service companies of their engineers' workloads also helps to reduce mileage. Some service companies that we interviewed are using sophisticated, dynamic computer programmes with assignment capabilities to allocate jobs to the most appropriate engineer. The assignment program can take a large number of parameters into consideration including:

- the skills of the engineers and the skills required by the job
- current availability of engineers and planned workload for the day
- location of engineers and their predicted travel time to the customer's premises
- customer service response times
- estimated time required to carry out job

The assignment of engineers to customer's tasks does not have to be automated in order to be efficient, it can be carried out manually. However, regardless of whether it is performed manually or automatically, it does require common sense, good planning and organisation.

The planner or controller responsible for the assignment of engineers to tasks also needs to understand the road layout in the area and something about likely traffic conditions in order to make sensible decisions. However, in some cases this is difficult for the service company because the job planning departments are operated on a centralised or regional basis.

Freight companies can also reduce mileage and trip numbers with efficient routing and scheduling of their vehicle fleets. See Section 5.2.16 for further discussion of routing and scheduling.

***Communication with the driver/engineer***

The ability for the depot/call centre to contact the driver/engineer and vice versa can also help to improve the efficiency of vehicle operations and thereby reduce the mileage covered and unnecessary trips performed (see Section 5.2.30).

Some of the freight transport and service companies we interviewed have the ability to contact their drivers/engineers at any time during their shift, usually by mobile phones or pagers (in parts of Norfolk and Suffolk mobile phones are not in themselves sufficient as there are several gaps in the mobile phone network in remote areas).

However several of the representatives of freight transport companies and suppliers performing their own deliveries that we interviewed have no means of contacting their drivers once they have left the depot other than telephoning a customer on the driver's route and asking them to pass on a message to the driver. These companies recognised the commercial benefits that having permanent contact with their drivers could lead to, but told us that a senior member of staff within the company is unhappy about the cost of issuing mobile phones to drivers or fitting other communication equipment into their vehicles.

### 5.2.16 Routeing and scheduling of vehicles

Several of the freight transport and service companies we interviewed during the research use computerised routeing and scheduling packages in order to plan their drivers' and engineers' working schedules. In some cases companies told us that this software had been introduced in order to cope with the scheduling problems caused by premises served by multi-drop rounds becoming more demanding about their delivery times or the service engineers' response time. Prior to this occurrence it had been relatively easy for the company to generate vehicle routes and schedules manually based on the principle of least distance. However, now it is increasingly necessary to schedule rounds on the basis of the delivery times requested by customers rather than the geographical journey that will use the least mileage possible. The increasing complexity caused by these delivery time demands have made planning the operation more difficult (hence the need for computerisation) and have also resulted in longer than necessary distances being performed in order to satisfy these demands.

However, some companies that we interviewed have introduced routeing and scheduling software in order to make the process simpler for themselves and to attempt to optimise the routes so as to minimise the distance that it is necessary for their vehicles to travel (while meeting customer-imposed time constraints). Efficient routeing and scheduling software can be extremely helpful in minimising the distance that it is necessary for a company's vehicle fleet to travel in the course of their operations

Some other freight transport companies that we interviewed still carry out manual routeing and scheduling of their vehicle fleet. Scheduling is usually carried out by a transport planner in the company. Vehicle routeing is sometimes carried out by a transport planner, but in other in cases others it is left to the driver or engineer to select what they believe to be the best route. Several companies that currently use manual routeing and scheduling told us that they plan to use computerised systems in the future for several key reasons:

- they believe that it will produce optimal or at least better solutions than they currently generate manually which will help to increase vehicle efficiency and reduce mileage,
- in instances in which drivers are left to organise their own routeing and scheduling decisions, the knowledge about the delivery round, the best routeing and the customers' schedules resides with the driver. Therefore, when a driver leaves the company this results in a significant loss of company expertise, customer requirements and the affects the subsequent efficiency of the replacement driver,
- with the increasing demands being made by customers about delivery times it is becoming too time consuming and complex to perform routeing and scheduling tasks manually.

Several different approaches are taken to scheduling of deliveries made on multi-drop rounds in the companies that we interviewed, regardless of whether it is worked out automatically or manually. In general one of the following four approaches was used by the freight transport companies or suppliers delivering their own goods that we interviewed:

- i. goods are delivered to customers in the most geographically efficient sequence in order to minimise transport distance on the round
- ii. goods are delivered to customers in a sequence which matches customers' preferred delivery times
- iii. goods are delivered to customers in the order in which the orders are placed (i.e. the customer placing the first order tends to get their delivery first)
- iv. the sequence in which goods are delivered to customers is in accordance with the product types to be delivered (the most fragile goods are generally loaded onto the vehicle last and delivered first - this approach was used by a company which delivers a mix of fragile and very heavy goods)

Obviously the first approach is the most environmentally sustainable as it helps to minimise the distance travelled on each route, and thereby helps to reduce fuel consumption and pollutant

emissions, together with other impacts which are associated with distance travelled. It also has commercial advantages for the company making deliveries in that it helps to minimise fuel costs and other running costs. It can also help to minimise the time taken to perform the delivery round, thereby making the vehicle available more quickly for other work than any other scheduling approach, and increasing the vehicle utilisation. However few companies are in a position to use this scheduling approach, because of the demands placed on them by the receiving premises to make deliveries at a time that suits them. This typically results in route deviations and vehicles having to double-back on themselves. While delivery companies will try to get the receiving premises to accept delivery times that help minimise the distance travelled by the vehicle this is often not possible. If receiving premises would become more flexible about the time at which they receive their delivery this would have obvious advantages in terms of distance travelled and the total fuel consumed.

Service companies also have to carry out scheduling procedures in order to allocate their engineers to the tasks required by customers. In the case of service companies, routing decisions are often left to the engineers' discretion. Some of the engineers that we interviewed during the research felt that the transport planner making the scheduling decisions in their service companies are based too far away from the location to be able to make an informed decision about which engineer to send to a job:

“They (the transport planner) don't understand the road layout (in Norfolk), they just look at a map as see who looks to be near. They don't take rivers etc. into account”.

*(Service engineer)*

Another problem mentioned by some service engineers was that the systems used by their companies to allocate jobs to engineers tend to work on the basis of which engineers are available when the job comes into the call centre (the call centre is the contact point where customers report the need for engineers' services):

“Maintenance workers use a work management terminal which tells you your work schedule. This system can schedule one engineer in point A to do a job at point B next, and at the same time schedule an engineer working near point B to go to a job near point A, thereby crossing each other in their vehicles. Variables such as skills required are taken into account but basically the jobs are allocated by computer as engineers become available”.

*(Service engineer)*

Some service engineers in large national service companies believed that the approach taken to scheduling by their companies results in unnecessary mileage and company inefficiency:

“I would say we are very ineffective when it comes to driving around. We've got engineers from Norwich working in Watford at the moment and engineers from Bournemouth working in Norwich if you can work that out.”

*(Service engineer)*

Some service engineers were unhappy with the computerised scheduling systems used by their companies as they feel that they are unreliable and result in non-optimal scheduling decisions:

“We've got a perfectly good manual control but then coming down to overheads, costs again they get piece of technology that might cost millions and millions to bring in but 'cos in the long run they think its going to cut costs”.

*(Service engineer)*

“It never goes sick, it doesn't need a pension. But it doesn't work 90% of the time but we won't worry about that!”.

*(Service engineer)*

### **5.2.17 Pricing by suppliers/wholesalers to increase quantities ordered**

The pricing systems used by some suppliers performing their own deliveries and freight transport companies help to encourage very frequent, small deliveries to customers premises. This is especially true if the delivery costs are absorbed in the price of the goods (so that delivery appears free to the customer) and the supplier allows a customer to place as many small orders as they wish, each of which is delivered separately with no delivery cost penalty.

Of the suppliers performing their own transport that we interviewed, several will respond to an emergency request at very short notice for a small order by a customer by despatching a vehicle with an extremely poor load factor. In some cases only this one consignment is on-board the vehicle. Suppliers that carried out this practice usually do so because they think it is necessary means to fostering customer loyalty or that they risk losing the customer if they do not oblige. This results in high transport and distribution costs, poor vehicle load factors, more goods vehicle trips and increased goods vehicle mileage, together with the related environmental impacts of this activity.

One of the suppliers that we interviewed that offers its customers an emergency delivery facility for goods required at short notice (regardless of quantity) described itself as “its own worst enemy”, but felt it had to do this in order to retain its customer base.

Another supplier that we interviewed will make emergency deliveries of any size to customers but sends these goods by courier company and charges a £50 delivery fee. This deters most customers from placing emergency orders unless absolutely essential. Transparent and sensible delivery pricing strategies by suppliers/wholesalers would help to reduce inefficient vehicle trips, but competitive pressures tend to discourage companies from doing so.

### **5.2.18 Operating fewer but larger premises or distribution depots**

Some companies that have grown in size over time decide to acquire more warehousing space on several different sites in an urban area rather than moving to a single, larger facility. This tends to result in many goods vehicle movements being performed moving goods between these different warehouses. During the research we interviewed one retailer in exactly this situation.

Operationally, having several warehouses in the same city is far less convenient to the company than having a single site, both in terms of stock management and the traffic problems experienced when having to move stock between sites. The company interviewed has, however, recently taken the decision move all its warehousing to one, new purpose-built site. As well as making their logistics and distribution activities easier, this decision will also significantly reduce the number of goods vehicle trips and mileage performed by the company.

### **5.2.19 Smooth, reliable supply from suppliers to wholesalers/distributors urban depots**

Some unnecessary freight trips in urban areas are caused by late deliveries from suppliers to distributors'/wholesalers' depots on the edge of the urban area which distribute very time-sensitive goods. The distributor/wholesaler depot staff cannot afford to wait too long beyond the expected time of arrival for these goods before despatching other goods that have arrived onwards to customers (as waiting would severely affect their ability to deliver any of these time-sensitive goods to their customers on-time). They therefore have to despatch their urban delivery vehicles without the late products on-board. Then, when the late goods are eventually delivered at the local depot later in that day, it is then necessary for the distributors/wholesalers to despatch additional delivery vehicles to their customers. These vehicles are often despatched with low load factors. This delivery delay is very costly for the distributor/wholesaler in terms of vehicle operating costs and is also detrimental from an environmental point of view.

Late deliveries to distributors' and wholesalers' depots in the urban area can be caused by a number of factors such as heavy traffic conditions, adverse weather conditions on the roads, a problem or breakdown at a factory etc. Some of these problems are harder to avoid than others but if deliveries from suppliers to wholesalers/distributors (who perform the final delivery in the urban area) could take place on-time this would remove the need for double deliveries to customer's premises on the same day. Examples of the late supply of goods to distributors' and wholesalers' depots resulting in the need to despatch extra delivery vehicles into the urban area later in the day include the newspaper industry and food supply sector (to multiple grocers and smaller groceries and corner shops).

### **5.2.20 Virtual transshipment/"City logistics" systems**

Freight transport companies could voluntarily work together to share collection and delivery work at urban premises and thereby improve their vehicle load factors, utilisation and productivity. For instance, if several companies have goods to deliver to a single premises, rather than each sending a vehicle/driver to the premises as happens at present, they could consolidate the goods at one of the freight companies' depots and then all the goods could be delivered to the premises on a single vehicle. This has obvious environmental advantages in terms of reducing vehicle trips, vehicle kilometres, fuel use, pollutant emissions and other trip/distance related impacts and could also help to also reduce vehicle queuing at premises (which may take place on-street and possibly therefore block the road to through traffic). However it would increase the number of vehicle trips performed between the freight companies' depots.

This type of system which is often referred to as "virtual transshipment" or "city logistics" could take several different forms, these include:

- goods destined for a single premises are consolidated at one freight transport company's depot and delivered in a single vehicle;
- all goods destined for a specific road, set of adjacent streets or geographical area are consolidated at one freight transport company's depot and delivered in fully-loaded vehicles;

The agreements between freight transport companies could be organised in two ways:

- an ad hoc basis - i.e. if one company has a relatively small load to deliver to a premises it could choose to contact other premises to see if they also have goods to be delivered to the same premises
- on a contractual basis whereby one company is nominated as the only delivery company for that premises, street or series of streets and all companies with goods to deliver there agree to always deliver goods to the nominated company's depot. In this approach the freight transport companies involved could divide the city up into zones and agree among themselves about which zone they would each be responsible for collections and deliveries within.

There are several problems that need to be overcome in this type of system in order for it to be successful:

- there needs to be sufficient throughput of goods for the scheme to be commercially and environmentally beneficial;
- the freight transport companies may find it difficult to negotiate this type of arrangement with each other, to decide who is responsible for any delivery failures, and to agree how to share the revenue;
- the customers of the freight transport companies may not be in favour of the system, they may prefer the company they contract to perform the entire delivery;
- the system requires the freight transport companies to share data about their deliveries and to operate a computer system that they all have access to;
- the additional transportation of goods to and from each others depots and the additional handling involved may make the scheme uneconomic;

- the system may result in goods being delivered to premises later than they were previously, which may prove unacceptable to shippers and receivers
- given that goods would have to be transferred from one freight company's depot to another, this would delay the delivery. It may prove difficult for companies to still make all the deliveries to the receiving premises in the morning before the vehicle access time restrictions and any other delivery time restrictions come into force in the urban area;
- the delivery system would only be as good as the weakest company in the system, so to be able to offer a consistent level of service to its customers the freight transport companies would have to ensure that they were each capable of a similar service standard and reliability.

Such a scheme is only likely to have any chance of success if operated voluntarily by freight transport companies and is unlikely to be of interest to companies that already operate fully-loaded vehicles. Also, it would probably prove hard to persuade freight transport companies which have to meet stringent delivery times that such a system would be in their interest; they are likely to be concerned about another operator's ability to meet these requirements on their behalf.

The freight transport companies that we mentioned this idea to were generally not in favour of it. The following conversation from a discussion group session helps to illustrate this reticence on the part of operators:

"I think the problem in the UK would come if you tried to get two contractors to share...I cannot see the day when (freight company name) would be prepared to share a (freight company name) bonded warehouse or put goods on the same vehicle".

*(Manager from freight transport company)*

"Why not? Because this intrigues me".

*(Distribution manager from retailer)*

"Well I don't know. Probably because we are very slow. I suppose we are more belligerent really. I can't see either party would want it to happen. But I can see the economies when you go from dedicated to multi-user."

*(Manager from freight transport company)*

"Within distribution companies there is often resistance to multi-user. (Freight company name) are still chasing this dream position that they've been following for many years of increasing the utilisation of the total assets of the group. This is because different parts of the group won't co-operate with each other."

*(Distribution manager from retailer)*

"It's easy to integrate two suppliers goods in your warehouse. The processes are the same and we measure the utilisation of the vehicle. I can't easily see how the whole process from order processing, through warehousing and distribution would benefit from us sharing resources with somebody who is actually on another site.....I don't see sharing capacity with another company as the strategically logical way forward. The way forward for us as a company must be for us to find another customer to fit our capacity".

*(Manager from freight transport company)*

"At the macro level you're running at 95% capacity say, and (name of rival freight transport company) are now down to 85% capacity as you've taken their customer. This is the argument in the German city logistics systems. But if everyone is running at 95% capacity these small shifts won't make a big difference and sharing deliveries won't really help. I'm very doubtful about whether the German sharing system is at all significant. It's obviously important in that sort of approach though who specifies the vehicle".

*(Facilitator)*

“I think the significance varies with the level of development of the distribution industry. German City Logistics may work well there, but I think the UK distribution industry is a bit mature for it. I think it will be external factors that will drive UK distribution companies together - like shortage of drivers”.

*(Distribution manager from retailer)*

“If there was a situation in which entry to city centres to make deliveries was organised like runway landing slots at airports you might see people trading capacity in different ways. And then it might be worth distribution companies sharing capacity. But that is probably quite a long way away yet”.

*(Facilitator)*

“But is that really so far away? We trade emission quotas round the world already. If the EU says to the UK you've got to reduce your emissions in a major way it could happen in the next 3-5 years”.

*(Distribution manager from retailer)*

“Let's assume that about a third of all capacity on goods vehicles is unused at present, this is due to poor sharing of information between demand side and supply side, but it's all because the supply side doesn't share information. You could argue that this is inefficient and that at the extreme it would be more efficient if the supply side was run by one organisation that knew everything. I'm not suggesting that we will move to anything that dramatic but will there be a move towards it at all? There are few signs of it happening at the moment other than the ECR initiative. But why should freight transport be any different to telephone lines or electricity cables?”

*(Facilitator)*

“We are developing this concept in retailing. We carry a load, we share far more than we used to. For instance when we spoke about home deliveries I think he (another retailer) and I should get together”.

*(Distribution manager from retailer)*

“It's easier when we are talking about physical transportation of goods, some contractors just provide this. My company only has integrated warehousing and transport, so the only thing I can see happening and which we do to some extent already is share transport. But the warehousing and stock control and order processing would be harder processes to integrate. I could see it on the transport side. We are talking about doing this on the cosmetics deliveries to department stores - at present several firms deliver, we could achieve this with one company collecting from others and delivering”.

*(Manager from freight transport company)*

Although such a scheme in which freight operators share space on vehicles to improve consolidation may be culturally and organisationally very difficult for freight transport companies to achieve, the representative of one multiple retailer that participated in a discussion group felt that it would become more prevalent due to the high costs of dedicated services:

“Don't underestimate how far and fast this is going. Dedication is a wonderful thing provided you can afford it. Most people are looking at their cost base and are more concerned in the retail sector with de-dedicating and sharing bits of operation and we are even looking at sharing the development and use of equipment, such as plastic trays”.

*(Distribution manager from retailer)*

### 5.2.21 Shared user distribution

In this approach, rather than a freight transport company sharing its customer loads with other freight transport companies as in the city logistics schemes described above (see Section 5.2.20), an individual freight transport company combines its work for several different customers using common vehicles and warehousing systems for all the companies' goods. This approach differs from dedicated distribution systems in which the vehicles and distribution centre facilities are only used for one customer's goods. By sharing their freight transport resources between more customers a freight transport company can potentially achieve better utilisation of these resources. As well as being potentially commercially beneficial, shared user distribution can result in environmental benefits in terms of the need for fewer vehicles, total vehicle trips and total vehicle mileage.

### 5.2.22 Consolidated deliveries from local suppliers

In a situation in which one urban premises is receiving goods from a number of locally-based suppliers it would be possible to operate a scheme similar to the shared user concept previously described (see Section 5.2.21). One transport company could be responsible for collecting the goods from each of these suppliers and then delivering all these goods to the premises in a single vehicle trip.

However, while this system would reduce the number of vehicle trips made to the receiver's premises, it could potentially increase the total distance travelled collecting the goods from each supplier and possibly the number of trips performed to achieve this.

### 5.2.23 Driver efficiency

Encouraging drivers to perform their collection and delivery work as efficiently as possible is another potential company approach that can result in commercial and environmental benefits. However, few of the freight transport companies that we interviewed provide their drivers with any incentives for performing their collection and delivery work in an efficient manner. One express company that we interviewed gave its drivers financial incentives for the number of parcels that they collect and deliver in a given time period (without breaking the law) and also for generating sales leads.

The drivers that attended one discussion group session had the following conversation when asked about whether they were offered incentives to reduce mileage or the time taken to complete a delivery or collection round:

“We're on job and finish in our company” (i.e. when the drivers finish their scheduled work they finish work for the day).

*(Goods vehicle driver)*

“That can create a problem with drivers racing around and doing excessive speed 'cos they know full well, “as soon as I'm done I can go home” so they want to break every record in the book”.

*(Goods vehicle driver)*

“The only benefit (to doing your work efficiently or quickly) is that you then go out and do another delivery. There's no benefit at all, there's no incentive there.”

*(Goods vehicle driver)*

“Norwich drivers are very productive. They will really work. But if you get on the wrong side of them they can be the worst ones. A good crew is critical to company efficiency”.

*(Goods vehicle manager/driver)*

The efficiency measures employed by these drivers are largely based on the driver's goodwill and on their efforts to make life easier for themselves, which involves selecting the quickest and easiest route.

#### **5.2.24 Premises receiving fewer, bigger deliveries**

If receivers of goods were prepared to receive these goods less frequently but in larger quantities this would obviously help to reduce the number of vehicle deliveries required for the of supply goods to the premises. However, the representatives of premises that have participated in the work during the research tend to be very keen to maintain, or even in some cases reduce, order lead times and increase delivery frequencies to their premises. In addition, many of the premises surveyed have extremely limited on-site storage space available, so would find it difficult to accommodate larger, less frequent deliveries of goods.

For instance, the manager of a fast food restaurant told us that it currently receives a delivery on a Friday that completely fills all of their fridge and freezer space at the premises. By the end of Sunday they have used up all of this food and therefore receive another delivery on Monday. Therefore, given the current quantity of storage space, they could not possibly receive less frequent deliveries than at present. When asked how more storage space could be obtained, the manager replied:

“You would have to totally redesign the building and I think you would find that with a lot of the buildings in Norwich, especially the older buildings that there are in Norwich. It's not as easy as just saying, “we'll just increase the freezer space” because that suddenly encroaches on something else and the building is just not designed for this”.

*(Manager of fast food restaurant)*

Many retail premises have removed and reduced storage space in an effort to maximise retailing space. In addition premises tend to want to receive goods as frequently as possible to satisfy their customer orders as quickly as possible, as the following comments made during discussion groups indicate:

“I would say deliveries have become more frequent over the last 5 years. Whereas 5 years ago you may have made deliveries to a shop perhaps twice a week, you can guarantee that we're now going to the major chains every day and even the independents 3 times a week. Because the customer demands that if there isn't a book on the shelf they'll come in tomorrow and collect it. So you're JIT delivering.”

*(Manager from freight transport company)*

“The two things that we feel we need strongly are fast reaction for our customers so they get what they want when they want it and secondly, just-in-time deliveries are perfect for us as the customer because we're not handling excess stock and the book industry is one where it is very easy to have excess stock because you've got so many product lines”.

*(Regional manager from retailer)*

“Lead time is enormously important to the shop”.

*(Retail manager)*

Given the lack of storage space and the required order lead times it is difficult to envisage a system that would result in less frequent, larger deliveries by larger vehicles with higher load factors and therefore fewer journeys without fundamentally altering the existing distribution systems used.

#### **5.2.25 Combined collection and delivery trips**

There may be scope in some circumstances for the collection and delivery of goods to take place at the same time at premises, so that rather than requiring two vehicle trips, this could all be achieved in a single trip. Some of the multiple retailers we interviewed already do this; the driver delivering goods to their premises collects recyclable packages, roll cages and point of sale information and other documentation and returns these to the distribution centre in the delivery vehicle.

However for many other premises that we interviewed combined collection and delivery would be impractical. This is due to the fact that many premises require deliveries to be made in the morning so that they receive them at the beginning of the working day, and they do not want to despatch goods until as late in the day as possible. If anything, it is likely that the elapsed time between collection and delivery is increasing at many premises rather than decreasing.

Also, for most of the freight transport companies we interviewed that perform multi-drop collection and delivery work, their vehicles begin their delivery rounds fully loaded, so it would be difficult to make collections during the early part of the round. In addition, these drivers are under great pressure to make all their deliveries before any vehicle access time restrictions come into force. Making collections at the same time as deliveries would extend the length of the rounds, thereby making this more difficult to achieve.

### **5.2.26 Consolidation of goods to be returned**

Some retail premises have to return goods to suppliers on a regular basis. Examples of shops needing to return a relatively high level of goods include book shops, record shops, and newsagents. A book publisher informed us that:

“Last year, across about half a dozen publishers the average return rate was about 14%. If you push out, say, about 10 million books per year, that's 1.4 million coming back”.

*(Distribution manager from book publisher)*

Many of the city centre shops that we interviewed that need to return goods, return them to suppliers in small quantities on a frequent basis (often several times per week) and this despatch of goods from the premises will involve a completely separate vehicle trip to the goods deliveries made to the premises:

“Collections come in all shapes and sizes. But we will normally be informed to collect just one parcel and we will send that vehicle in and collect just one parcel”.

*(Manager from freight transport company)*

Rather than returning small quantities frequently, if these premises retained these goods until they had a larger quantity to return, they could then all be collected in one trip this would help reduce goods vehicle trip generation. This would also have the advantage of reducing the transport costs of returning the goods. This approach is already being used by some retailers:

“It is interesting that for (name of retailer) books we now only collect books once every two weeks, so they consolidate returns over two weeks and they know we will arrive on that Thursday at 3 pm to collect them (it is a fixed collection date and time). We just arrive, there is no waiting, no queuing because they know to expect us and we take everything away. That system is working quite well, the vehicle is well utilised and everybody knows what they are doing”.

*(Manager from freight transport company)*

However the problem with this approach for many retailers is the lack of storage space that they have at their premises:

“The problem for a lot of stores is that they don't have a lot of space. You couldn't do this in a typical high street store”.

*(Distribution manager for retailer)*

“It (the amount of storage space in a typical high street store) varies a lot. In some stores we have an excess of storage space and other where we have none and it is just absurd. It depends on the premises; a purpose-built facility has deliveries very much in mind but a Georgian curiosity (which we tend to have a lot of) are hard to get to and have little storage space and space in general”.

*(Regional manager for retailer)*

When asked what would happen if the sale or return system operated in the book trade was abolished, the regional manager of a book retailer gave the following response:

“It would have pros and cons - from a retailing point of view it is largely bad news because on new title buying it is largely prospective - you hope you are going to sell a given quantity but you can't be sure. We had in the past had some firm sale agreements with publishers (i.e. a “no returns” agreements). I think the problem for retailers is that we have tended to get stuck with a lot of books which we can't sell through. I guess the problem for the publisher is that to compensate for the fact that if we were not going to claim any money on those books, we would be looking for increases in trade terms which would be difficult to justify on the publisher side”.

*(Regional manager for retailer)*

It would seem from the research that, in certain retail sectors, there could be significant reductions in goods vehicle trips if goods were returned less frequently in consolidated loads. The difficulty lies in finding ways of storing goods prior to their return.

### **5.2.27 Achieving backloads for vehicles**

Several freight transport companies and suppliers performing their own deliveries that we interviewed mentioned that they are keen to try to obtain backloads for their vehicles that currently return empty after finishing their deliveries. If vehicles could obtain goods to carry on their return journey this would reduce the number of vehicle trips needed to move the goods and also the mileage performed in doing so. However, this is difficult to achieve in many operations, especially those involving time-constrained multi-drop rounds in urban areas:

“I think if you're a haulier it's not too difficult to do something about back loading but if you're in integrated distribution and warehousing as we are and we schedule a run to do 15 drops to our customers, it's very difficult to organise so that the last drop is very near the vehicle's depot or to integrate any back loading throughout the day. This does mean that we are naturally inefficient.”

*(Manager from freight transport company)*

“We know from all the evidence that we've got that our level of utilisation in a closed loop retail system is actually very low. We're not proud of it. But we're proud because we think our level of utilisation is actually higher than the majority of other people.”

*(Distribution manager from retailer)*

In the case of a couple of suppliers that we interviewed which perform their own deliveries, their distribution managers told us that they would like to try to achieve backloads but there is little incentive or encouragement for them to do this as the distribution operation is cost- rather than revenue-driven. Their companies do not think of themselves as freight companies, and do not consider their potential to move freight for financial gain or really address the effective utilisation of their vehicle fleet seriously enough. If these supplier companies were supportive of such an initiative and were prepared to give the distribution managers in these types of operation some financial incentive to try to better utilise their fleet by obtaining backloads and other freight work for the vehicles when not needed for the company's deliveries, there may well be scope to achieve efficiency gains.

In the case of one representative from a freight transport company who participated in a discussion group session, his company had recently struck a deal with another freight operator to perform several new trunk routes for them with vehicles that were returning to their distribution centre and would otherwise be running empty:

“This came about over a social drink with the owner of the other company and we hadn't planned to discuss it, it just came up. But I don't who is supposed to drive this sort of initiative”.

*(Engineering manager from freight transport company)*

There is possible scope for greater planning and co-ordination of vehicle backloads by a central body, or by a consortium of vehicle operators.

### **5.2.28 Goods vehicles/drivers providing equipment and parts to service engineers**

Most service companies currently operating a system whereby all their engineers have their own vehicles in which they transport their tools, equipment and parts between jobs. Some service companies could potentially implement a system whereby engineers move between jobs on foot, on bicycles or using public transport and they are supplied with the parts, tools and equipment that they require by goods vehicles that are moving around the city all day with the drivers of these vehicles responding to calls from engineers at customers' premises requesting these parts and equipment to be delivered to them. Then, rather than each engineer having to operate what is effectively a warehouse on wheels, the size of the vehicle fleet could potentially be reduced, and the parking problems encountered by service companies in terms of finding somewhere suitable to park, the parking charges and the parking fines, and costs of vehicle clamping and towing-away could be significantly reduced.

This may not suit some service operations in which the engineers need a large range of equipment and tools at virtually every job they attend to, but would probably be feasible for many types of service operation. One service company told us that they used to operate this type of system:

“We used to have three vans that drove around the city with all the spares. The engineers phoned the driver and asked him to bring the parts needed at a given customer's premises. The problem was that I would ask for a part and he would deliver it but then someone else would ask for the same part and the driver was invalid as he had given me this part”.

*(Team leader from service company)*

However, it is possible that this particular problem, of keeping the goods vehicle well stocked with parts, would be far easier to solve than the problems that service companies have told us that they currently face in parking.

### **5.2.29 Premises using fewer goods suppliers**

If premises that receive goods using a decentralised goods supply systems (i.e. purchasing goods from many different suppliers each of which makes its own deliveries) were to reduce the number of suppliers that they use and thereby reduce the number of deliveries that they receive, this would also reduce the number of goods vehicle trips that their premises generate. Moving towards a more centralised goods supply system could be achieved by premises in the following ways:

- premises buy goods from wholesalers with a wide product range and variety who can supply much or all of their requirements
- premises buy their goods from suppliers that all use the same freight transport company which consolidates these goods at their distribution centre into a single vehicle delivery to the premises
- premises operate their own internal distribution network with their own distribution centre which can consolidate all the goods being supplied to the premises onto a single vehicle (only likely to be viable for larger companies)

Reducing the number of goods vehicle deliveries necessary could potentially reduce the total cost of distribution, and would also reduce the mileage performed and fuel used by goods vehicles in the urban area. It could also have commercial benefits for premises receiving goods as their employees

will have to spend less time receiving deliveries than they used to. Also, purchasing from fewer or a single supplier could also help larger companies to negotiate bulk discounts on their purchases.

However many premises are likely to be resistant to taking these steps as using a single wholesaler or fixed suppliers would prevent them from exercising the extent of choice in purchasing that they do at present, and from taking advantages of the special offers made by another supplier.

### **5.2.30 Use of vehicle telematics and mobile communications systems**

Several of the suppliers operating their own delivery vehicles and freight transport companies that we interviewed during the project do not currently have any means of contact with their drivers once they have left the depot. The use of cellular phones and private radio networks would help to improve the efficiency of these companies vehicle operation, potentially reducing trip numbers, mileage, fuel used and delays in traffic jams. However, the companies interviewed are concerned about the cost associated with implementing this type of technology.

Vehicle telematics developments have an important role to play in any efforts to improve vehicle utilisation (i.e. reducing empty running, increasing vehicle load factors, reducing time taken for delivery, improving the proportion of time that a vehicle and trailer is used productively). Mobile communications systems between the vehicle/driver and the depot can either be voice communications (e.g. cellular phones and private radio networks) or mobile data communications (e.g. satellite, Mobitex). The following comments were made during discussion group sessions:

“This (vehicle telematics) is a big enabler for improving vehicle utilisation. We will improve our vehicle utilisation infinitely more if we know where all our vehicles are at any moment in time, which we don’t currently. And also if we know what they are carrying. At the moment your lorries and my lorries go out of the gate in the morning and come back at night and you hope that in the meantime they’ve done what you told them to. There are checks obviously, but you don’t really know”.

*(Distribution manager from retailer)*

“At the moment we use mobile phones to contact drivers. But this is just scratching the surface isn’t it. What we really need is electronically scanned PODs (proof of delivery), dynamic route scheduling because the government has just cancelled a £20 million computer development managing road works, so even with a sophisticated scheduling package we don’t know that they are going to dig up the Finchley Road tomorrow morning. So with all of our sophistication we still allow the driver to pick up the manifest and say “I’m not bloody going to go that way” and he has phone in and rebrief us even though we’ve scheduled it ourselves”.

*(Manager from freight transport company)*

While there are many different products on the market that will capture data, provide communications and offer tracking and tracing facilities, this technology has some problems. The various systems are not always compatible, since the majority of it is supplied as after-market fitment in a vehicle. It is therefore important that equipment and telematics providers and vehicle manufacturers collaborate with each other to ensure that in future telematics equipment is easily integrated, so that a goods vehicle operator can make the best possible use of this equipment to achieve better vehicle performance. One way around this situation is the provision of telematic fleet management services, whereby companies operating goods and service vehicles lease the equipment and information service from a specialist company. In this way the goods and service companies do not have to worry about the technical issues, since the equipment service provider is responsible for ensuring the information is delivered and interfaced with the users.

### 5.2.31 Modal Shift

Although not directly part of the remit of the project, the possibility of modal shift for urban deliveries (i.e. away from road vehicles to other less damaging modes) was mentioned several times during the research. One company that we interviewed is a partner in a consortium looking at using the Mail Rail (the Royal Mail dedicated underground train line in central London which runs under Oxford Street) for making deliveries to premises. In this system, companies would deliver goods into Paddington overnight and goods would be delivered into the shop the following morning. The whole system would be automatic, using automated cages and lifts direct into the shops from the rail.

We also met with a company that offers deliveries in central London by specially-adapted bicycles with trailers. Red Star has also introduced a similar bicycle-based system for collection and delivery work in central London.

As previously mentioned (see Section 5.2.28), service companies could implement a system whereby engineers move between jobs on foot, on bicycles or using public transport and are supplied with parts and equipment that they require by goods vehicle drivers who are driving around the city all day and responding to calls from engineers at customers' premises requesting parts and equipment to be delivered to them. This system would bring about modal shift to less environmentally damaging modes for service engineers.

However the role played by modes other than road for urban freight transport is likely to remain limited in the near future:

“Seventy five percent of our customers come to our stores by car, in London it is only 53%. Therefore mass rapid transport is important to the customer. But for logistics I think its a long way off. We are keen to research it but I think it is a long way off. I think we are going to rely on road transport for many years to come. I think DGVII (European Commission Directorate General for Transport) is being very realistic as, although it sees the aim as getting people onto rail and other forms of transport, it acknowledges that road will be the dominant mode for many years to come.”

*(Distribution manager from retailer)*

### 5.2.32 Vehicle fuel efficiency and fuel use

Initiatives to improve the fuel efficiency of the goods and service vehicles through careful and efficient routeing/scheduling is something that all freight transport and service companies could introduce, which would have commercial and environmental benefits. However, few of the companies that have participated in the study have put in place measures to achieve high levels of fuel efficiency when operating their vehicles; their consideration of fuel efficiency is often limited to the time at which they are deciding which vehicles to purchase for their fleet.

Most of the companies interviewed do monitor the quantity of fuel consumed by their fleet, as fuel represents an important cost component in their operations. However, several freight transport companies told us that the customer service levels that they have to achieve prevent them from thinking about measures to reduce fuel use.

Some of the freight transport companies we interviewed will question a driver if the fuel efficiency (i.e. miles per gallon) they achieve is particularly poor over a period of time. However, few of the companies we interviewed take proactive steps to bring about high levels of fuel efficiency. Companies can (and, of course, some do) implement driver training programmes to educate drivers about how to drive the vehicle in order to achieve the best fuel efficiency possible. They can also introduce driver incentives to encourage drivers to take an interest in improving fuel efficiency. One multiple retailer that operates its own goods vehicles told us that they already do this; the miles per gallon data for all drivers are collected and the driver achieving the best fuel efficiency receives an

award. Efficient vehicle routing and scheduling also has an important role to play in total fuel consumption (see Section 5.2.16).

Service companies that we interviewed tended to be less concerned than freight transport companies about controlling fuel use and efficiency. Although they monitor fuel use, as it is a major cost component for them, they do not use incentives to encourage engineers to improve fuel efficiency or perform less mileage. In fact, at several of the service companies interviewed, the management view low vehicle mileage as a problem. To them low mileage raises questions about whether the vehicle is needed, and whether the engineer is doing their job properly, rather than being viewed as beneficial.

The following conversation took place during a discussion group session. It illustrates the need for freight transport operators to work closely with vehicle manufacturers in specifying their needs and hence manufacturers coming up with appropriate fuel efficiency solutions:

“I am being constantly challenged with reducing my costs. I want to get to the stage where I have a vehicle with a sterling engine running on water, and water is free....The principle has to be to get better fuel economy irrespective of what type of work the vehicle is doing. I can't understand why anybody would argue that that's not the case”.

*(Distribution manager from retailer)*

“Would you go for a smaller vehicle or a less powerful engine?”

*(Engineering manager from vehicle manufacturer)*

“No sorry. It's your job to come up with the most fuel efficient engine you've got for that situation....I would argue that whatever fuel you're using you've ultimately got to use less of it in whatever operating circumstance you're talking about. That must be the aim. You can't say you want to burn more fuel because you're going faster”.

*(Distribution manager from retailer)*

One participant in this discussion group felt that efforts should be made to improve the diesel engine rather than examining alternative fuels:

“Whilst we may want to use electric vehicles at the end of the day the level of investment and the costs involved in using the diesel engine means that in the short term the best course of action is to improve the diesel engine. I agree with this, I think it's very practical and very sensible”.

### **5.2.33 The use of cleaner and alternative vehicle fuels**

Some of the freight transport companies interviewed do use the cleaner forms of diesel available but do this for commercial rather than environmental reasons:

“We use BP Greener Diesel. But if I'm honest it's not because of the environment, it's because of the cost of it”.

*(Manager from freight transport company)*

“That's exactly the same as us. We use the BP Greener Diesel because its cheaper”.

*(Manager from freight transport company)*

This reinforces the importance of central and local government using price signals to encourage companies to operate in environmentally sensitive ways. Few companies are likely to implement vehicles that use cleaner or non-polluting fuels of their own accord, unless the price of these technologies make them cheaper than current practices. The following conversation during a discussion group helps to illustrate this:

“A company like mine - I'd be kidding myself if I thought that we were going to change our vehicles for emission purposes just because we want to be good”.

*(Manager from freight transport company)*

“It shows up in the sales that emission-friendly vehicles just don't sell for that reason”.

*(Engineering manager from vehicle manufacturer)*

“It's a reactive thing. Legislation will have to force change”.

*(Facilitator)*

“It's a great shame but I think that's the reality”.

*(Distribution manager from retailer)*

“I have spoken to a manufacturer who wants to know the emission implications of delivering in different ways per tonne delivered...in the UK thinking like this is in its early days isn't it? Say we do see reconfiguration of the supply chain, an interesting question from the emissions point of view, is which type of supply chain is better. Because you can imagine policy makers passing all sorts of legislation, like the packaging legislation, without giving any thought to which one gives a net benefit in terms of emissions either at the international, national, regional or local level”.

*(Facilitator)*

“You're right. We wouldn't know how to measure the different impacts of alternative supply chains. We're just playing with the idea internally of trying to measure the environmental impact of our stores and then migrate that pilot study back up the supply chain.”

*(Distribution manager from retailer)*

Two extremely proactive retailers that participated in discussion group sessions are making significant efforts to reduce the pollutant emissions produced by their vehicles:

“We monitor vehicle emissions ourselves. And we return vehicles if they don't meet our standards and the vehicle manufacturers' standards. We take the emissions really quite seriously.”

*(Distribution manager from retailer 1)*

“We are currently trialing every type of fuel known to man to fuel our vehicles - CNG, LNG, low sulphur diesel, city diesel. We have tried electric trucks in the past. We are prepared to investigate electric vehicles again. We are having meetings with fuel cell developers. We are interested in differing fuels to reduce our emissions - we want to identify the greenest combination of fuels we can use. We are also interested in reducing our noise levels and certain fuels can help reduce noise profiles. This comes back to night deliveries and city centre deliveries. We feel that eventually we have got to produce a vehicle that is certainly no more noisy, and has no higher emission profile than the average family car...We are doing this research alongside the contractors. They have no choice and have to work to our terms of reference - it sounds arrogant but it's the only way to drive this through. It is a condition of carrying on with the contract. That sounds very draconian, but they are very willing participants in all of this because they may well take the technology that we come up with and migrate it onto other contracts that they run. So it's in their interests to do it as well”.

*(Distribution manager from retailer 2)*

However, despite these two examples above, the overwhelming majority of the goods vehicle operators we have spoken to about this matter, think that it will take new legislation and regulations before most operators adopt alternatively-fuelled vehicles. However, there is a problem for goods vehicle operators and vehicle manufacturers in that they do not know what type of fuel technology

central and local governments are going to insist on in the future. This makes it difficult for vehicle manufacturers to make progress in developing the technology as the following conversation shows:

“I suspect that society will demand that emission levels improve. The real question in my view is which emission are you trying to reduce?”

*(Distribution manager from retailer)*

“Yes and that's not very clear. In some German cities I think you may see diesel vehicles being banned”.

*(Facilitator)*

“..and then the question is how will they view that. Will they be saying it can't be a diesel vehicle or will they say it can be a diesel vehicle as long as it's very low sulphur. This is very important from the point of view of which sort of vehicles you might want to specify”.

*(Manager from freight transport company)*

“My view is that emission levels will be quantified”.

*(Engineering manager from vehicle manufacturer)*

“Or they may just say no particulate emissions. But in the UK nobody knows what local authorities might say”.

*(Facilitator)*

“Nobody knows what the specification of the new emission profile will be. All we know is that vehicle emission levels will be reducing. Now that doesn't help you very much.”

*(Distribution manager from retailer)*

“There is one absolute killer and that is that the greenest vehicle is determined not only by the fuel and the treat of the exhaust but also by the use that you make of it. So you can have a fuel which is green on a motorway journey which is absolutely hopeless in an urban environment with an urban cycling vehicle”.

*(Engineering manager from freight transport company)*

“Nobody can agree a standard by which emissions are measured for everything.”

*(Engineering manager from vehicle manufacturer)*

“It depends why you want to reduce emissions. It sounds an odd question but you can have greenhouse gases as a cause for reduction, or you can have ozone reduction, smog reduction, health reason reductions, and each one leads to a different answer”.

*(Engineering manager from freight transport company)*

“Any low emission fuel will have to meet four key requirements: it has to be quiet, clean, fuel efficient and safe”.

*(Engineering manager from vehicle manufacturer)*

Both the management of freight transport operations and improved engine design have a role to play in reducing pollutant emissions. Vehicle manufacturers have already achieved significant reductions in the levels of pollutants (and noise) emitted by lorries in the last ten years. If the age profile of goods vehicles could be changed, so that the proportion of old vehicles that are still on the roads is reduced, this will lead to further improvements. The vehicle manufacturers need to continue making improvements and researching alternative fuels, while freight operators and their customers need to examine the efficiency of their freight operations.

As the following conversation during a discussion group illustrates, there is also a problem in terms of many freight transport operators' ability to financially afford to become involved in alternatively-fuelled vehicle research and trials:

“Because of our size we aren't good at researching and piloting different vehicles and fuels. Large companies are doing a lot of this but where does innovation come from is it the vehicle manufacturer or operator. We are too small to be testing lots of different vehicles. If a manufacturer came to me and gave me three different vehicles and fuels and told me to test and monitor them and then decide what suited us this would be fine. But no manufacturers are doing this with us. Shouldn't the manufacturers be doing more? How do we test all these options?”

*(Manager from freight transport company)*

“In the UK we are piloting twenty CNG vehicles - all prototypes. Just running these are quite a job in itself. These are paid for by government research projects and operators actually own them. But they expect them to work all the time efficiently. We've tested the engines but not the entire vehicle, this requires operators but operators want a vehicle that works - this is difficult with a prototype”.

*(Engineering manager from vehicle manufacturer)*

“Why do you make the customers buy them?”

*(Distribution manager from retailer)*

“If the customer doesn't have a financial stake in the vehicle it generally gets put on the side and not used. If operators own them then they try using them as part of their fleet”.

*(Engineering manager from vehicle manufacturer)*

“Decisions regarding urban regulations will be taken at the local level. However innovation requires large-scale investment and certainty about what will happen. If local authorities will use different measures to control goods vehicle operation in urban areas this deters manufacturers from putting lots of resources into developing and testing as the vehicle design that will be required is uncertain”.

*(Facilitator)*

### **5.2.34 Designing more environmentally-friendly vehicles**

Vehicle manufacturers have a key role to play in designing more suitable and environmentally-friendly urban goods and service vehicles with improved fuel efficiencies, which generate fewer pollutant emissions and are quieter. This is borne out by the following exchange in a discussion group:

“But is that problem (of out-of-hours deliveries disturbing residents) not overcome by vehicle technology? If the vehicle is extremely quiet and has low emissions, it doesn't matter how big it is. If it's delivering into a town and nobody hears it, nobody is going to care about it surely.”

*(Engineering manager from vehicle manufacturer)*

“I agree with that”.

*(Engineering manager from freight transport company)*

“That's what we're beginning to look at, finding the right urban vehicle.”

*(Engineering manager from vehicle manufacturer)*

However to make vehicle operations quieter this will require investment in road surfacing as well as in vehicle design:

“The funny thing is the vehicles are getting quieter, but the interface between the vehicle and the road isn't getting quieter, the tyre is noisy and the road is noisy. All of a sudden you've got to start investing in the road surface. The vehicle manufacturer could do so much that the vehicle makes no noise at all, but the noise generated by the tyre on the road is still significant”.

*(Engineering manager from vehicle manufacturer)*

However as well as focusing on urban delivery vehicles, it is also important that vehicle manufacturers focus their attention on designing vehicles that are appropriate for performing inter-urban trips *and* urban deliveries, as many operations involve both of these elements.

Some of the freight transport companies that participated felt that vehicle manufacturers need to make more effort to understand the needs of the UK marketplace, as the following comments reflect:

“European vehicle manufacturers need to understand the UK, its logistics industry, its topography and geography, driver skills and market better. At the moment we get vehicles that aren't appropriate for the UK needs. We get 40 tonners that could climb the north face of the Eiger. These vehicles have increased maintenance costs and increased fuel costs compared to the vehicle we need”.

*(Engineering manager from freight transport company)*

### **5.2.35 Driver training/driver safety**

Company-led initiatives to improve driver safety would be beneficial to society (in terms of fewer accidents) and to companies in terms of lower insurance rates, fewer occasions when vehicles are being repaired and are unavailable, fewer instances of drivers being unavailable due to injury, and fewer dissatisfied customers due to goods collections and deliveries disrupted and goods damaged by vehicle accidents. Driver safety can be encouraged in a number of ways:

- driver training programmes both when drivers start working for the company and at set periods thereafter;
- financial incentives offered by companies to safe drivers;
- encouraging the public to report instances of bad or unsafe driving.

One multiple retailer that we interviewed which operates its own distribution system has a scheme in place that rewards drivers who remain accident-free over a given period of time. Some of the companies interviewed are either part of the nationally organised “Well Driven” scheme in which members of the public and other road users can telephone a freephone number to report instances of bad driving by goods vehicles, which are reported back to the company concerned. Other companies have put in place their own “Well Driven”-type scheme, encouraging the public to telephone them on their own freephone number if they experience any problems with the company’s drivers.

According to some of the drivers that participated in discussion groups, they are put under pressure by their companies to achieve stringent delivery times, which result in drivers having to drive faster than they otherwise would. Also, rather than providing financial incentives to drivers for safe or accident free driving, some companies are offering drivers financial incentives to do as much work as possible in their shift, or allowing drivers to finish their shift and go home as soon as they finish their scheduled work:

“That can create a problem with drivers racing around and doing excessive speed 'cos they know full well `as soon as I'm done I can go home' so they want to break every record in the book”.

*(Goods vehicle driver)*

### 5.2.36 Design of vehicle reception facilities at premises

The design of premises is also important in terms of goods vehicle safety and accidents rates. One freight transport company manager told us that:

“Seventy percent of our vehicle damage are reversing incidents. And 70% of that 70% is at high level. Driving high vehicles in urban areas is difficult. We are delivering into addresses designed for low vehicles and horses and carts”.

*(Engineering manager from freight transport company)*

In the case of older buildings it can prove difficult to change facilities to better suit the needs of freight transport operations. However when designing new premises, architects should always take fully into account the goods and service vehicle needs at the premises.

### 5.3 Co-operation in the supply chain

There is clearly a key difference in the company initiatives considered in this chapter in terms of how many supply chain parties need to take action or support the initiative for it to have the opportunity of proving successful. As mentioned earlier the company initiatives can be separated into the following three categories of support and participation:

- i. some of the initiatives can be successfully adopted and implemented by a single company without the support and participation of the other parties in the supply chain;
- ii. some of the initiatives can be successfully adopted and implemented by a single company but agreement and support (but not the participation) of other parties in the supply chain;
- iii. other initiatives require the joint agreement, support and participation of more than one company working together in the supply chain.

In addition a few initiatives, such as city logistics schemes, require a fundamental alteration of existing supply chain so that companies providing freight transport services work jointly together and their customers accept the involvement of another company in the collection and delivery process

In order to achieve those initiatives that require the support, and in some cases the active participation, of more than one company in the supply chain, it is necessary for there to be a close relationship between these companies and a forum in which ideas and initiatives can be discussed. As the following quote by the manager of a freight transport company suggests, in some instances communication between supply chain parties is currently far more reactive than proactive. It often only takes place in response to a problem rather than dealing with how things could be done differently in future to everyone’s advantage:

“I think you tend to communicate more when there is a problem. Everything will sail forward for months and months and then there will be a problem and this will lead to talking and trying to find a solution. We have to communicate with our customers to fulfil our contract”.

*(Manager from freight transport company)*

From our research it would appear that most of the time and effort spent by freight transport and service companies to come to agreements with their customers about required service levels and schedules are put in place when the two companies commence working together. Once these issues have been agreed they are often not returned to unless operational problems occur. A more open, on-going dialogue about these issues is necessary if initiatives requiring inter-company support are to be realised.

Even in situations in which dialogue between freight transport operators and their customers does take place on a regular, on-going basis, there is often a difference in opinion of the operator and the customer about how best to achieve productivity gains and cost savings:

“One of your objectives will be to reduce the costs of the supply chain...If you're a contractor you are likely to have a service level agreement that intimates that you are going to strive to reduce it or contracts you to find a reduction that you might share in the reward of. So we will always be focused on reducing the costs. Very often the problem with some customers is that they only perceive that as coming from reducing the cost of handling a case, or a pallet rental cost, or a delivery cost, rather than reducing the cost of distribution. They see it as a reduction in the cost of a transaction rather than a change in the transaction profile such as making bigger deliveries.”

*(Manager from freight transport company)*

Some of those companies who are recipients of the work carried out by freight transport and service companies do not currently see why they should have to spend time and effort concerning themselves with the transport problems of these companies. The following exchange during a discussion group helps to emphasise this point:

“Because we give the work to a carrier we aren't really concerned about distribution policies and what the problems are. They have the problems and we aren't interested in the excuses really. Our customers complain if they don't get their delivery on-time in the morning. I do appreciate the problems carriers have but I don't have to get involved in the problems. Distribution is what the carriers know and do”.

*(Distribution manager from wholesaler)*

“But you're having to pay for some of these distribution problems when it comes to agreeing contract prices with carriers”.

*(Facilitator)*

“I suppose so. But we're in competition with other companies and so are the carriers. We say “can you provide the service we want?””

*(Distribution manager from wholesaler)*

In another discussion group session the manager of a freight transport company made the following comment when asked if they are able to speak to their customers and jointly come up with solutions to operational problems:

“This has happened in a few cases. But generally I find that the customer is not interested because they don't care if you have to get it there on a sleigh which goes over the rooftops, it's not their problem. It's your problem”.

*(Manager from freight transport company)*

A key issue, which has already been mentioned, makes implementing company and supply chain initiatives even more difficult. Namely, that many of the premises receiving goods in the urban area (which is where freight transport problems manifest themselves) do not pay the transporter for the delivery and therefore have no commercial relationship with the freight transport company. Somewhat perversely, urban premises that are not paying the transport directly for deliveries have been receiving ever-improved service levels, without ever being involved in the discussion process or decision that leads to these improvements. There is clearly a need to find a way to involve these companies and premises that receive deliveries but do not have a commercial relationship with the freight transport company, in the discussion process.

However, the discussion group sessions run as part of this project indicate that companies can be brought together to talk productively about urban freight and servicing issues:

“Ten or fifteen years ago we wouldn't have been sitting round this table. Back then there is no way I would have been sitting here discussing the business of my company with a competitor. But the progression now is that we are all talking and aiming for the

common goal. I'm still not going to tell you everything but we're in the same market and have the same end goal”.

*(Distribution manager from retailer)*

In some cases, for initiatives to be successful, the need for the involvement of companies working together in the supply chain goes beyond even those companies passing goods or services between themselves:

“It's really the insurance companies which affect this (the need for checking goods and providing signatures when making deliveries) more than the carriers. The carriers would love to just deliver the goods and drive off as quickly as possible, and then deal with any customer problems when they are reported. But the insurance companies won't accept this. It means that the carriers who are paying premium rates for insurance wouldn't be able claim against the insurance. It would come off our bottom line”.

*(Manager from freight transport company)*

Some of the company initiatives discussed in this chapter, such as urban transshipment centres, require that freight transport companies can accept working together with companies that are traditionally viewed as competitors, and also that their customers can also accept this change. Some of the customers (retailers, suppliers etc.) that we interviewed said that they were prepared to work with their competitors if the initiative could help to relive delivery problems, but others were not prepared to do so. The same divisions were also true among the freight transport companies that we interviewed.

It is likely to prove very difficult to achieve the support of all freight transport companies for an initiative given the commercial environment in which these companies work. They currently attempt to outperform each other and offer new and improved service levels to their customers:

“The problem is that if we don't do it (offer a better service) then the customer will find someone else who will”.

*(Manager from service company)*

#### **5.4 Changes in the market place that assist freight transport efficiency**

The centralisation that is taking place through mergers and acquisitions in many industrial sectors could well be having a positive effect on the number of goods vehicle trips in urban areas. For instance, as the number of goods suppliers is reduced, this has the effect of the remaining suppliers despatching larger quantities of goods and hence the opportunity for improved vehicle load factors, and fewer vehicle trips.

As the number of retailers in the UK diminishes (in terms of both number of companies and number of retail premises), and multiple chains grow at the expense of independent shops, it results in fewer retail premises receiving larger quantities of goods and thereby the opportunity of higher vehicle load factors. Also, as multiple retailers continue to dominate the UK retail landscape, it also offers the opportunity for a greater proportion of goods destined for retailers to be sent via internally centralised goods supply systems with better load consolidation and thereby fewer vehicle trips are necessary. However, from the perspective of urban vitality, the loss of independent retailers may reduce the attractiveness of our towns and cities to shoppers.

Centralisation in the freight transport industry is also likely to have a similar effect. As the total number of large express parcels companies offering next day deliveries to premises on UK high streets and in urban areas is reduced (through takeovers and mergers), those remaining companies each have a greater throughput of packages and should be able to achieve higher vehicle load factors, and should also be carrying more packages for a single destination. This can help to reduce the number of vehicle trips performed to each premises and also reduces the total time taken to make deliveries to each premises.

## **5.5 Other social and economic changes that may increase the demand for goods and service vehicle operations or make them more difficult to perform**

Behavioural and other social changes are also likely to have an impact on freight transport and service companies. The impact of home shopping/delivery and the outsourcing of service activities are discussed below.

### **5.5.1 Home shopping/delivery**

The likely increase in the demand for home shopping and delivery services will change the nature and location of goods vehicle operations in urban areas with far more deliveries to residential addresses, workplaces, and other collection points which may include facilities at park and ride sites, petrol stations and railways stations. Local authorities will need to plan how to control and assist the vehicles that perform these deliveries in non-traditional delivery locations, and may also be able to assist in helping to plan and construct suitable depositories and collection points which are linked to public transport facilities.

Home shopping and delivery could either increase or decrease the total number of goods vehicle trips in urban areas, depending on the type of delivery systems used. However, regardless of whether total goods vehicle trips in urban areas increase or decrease, it is likely that home delivery will result in large increases in the number of goods vehicle trips in residential areas.

One multiple retailer that participated in a discussion group carried out its own market research four years ago into the potential for home shopping and delivery. It was estimated that the company could sell £1 billion of goods per annum through home shopping in 10 years time. To support this level of sales it was estimated that several thousand home delivery vehicles in the UK would be needed to service this demand. The distribution centre requirements of this were enormous as each facility would need to be very large so that all the vehicles could be parked. The company was uncertain how much transfer of business from their current shop-based operation £1 billion home shopping would represent. Therefore the effect on freight transport needs for shop operations was also unclear, but the company currently operates less than one thousand goods vehicles for the deliveries to all their shops:

“You can argue that in our type of retailing, from an environmental point of view a move towards home shopping is a crassly stupid thing to do. Because we need more vehicles, produce more pollution etc. etc”.

*(Distribution manager from retailer)*

The demand for home delivery is likely to increase if the cost of driving into the city centre in cars increases, as a result of urban road charging and higher car parking charges. Existing traffic congestion levels will also help to encourage home shopping. People may well still go to the shop to view the goods but may not travel by car. They could use public transport instead:

“This is what happens in Japan, you don't see people carrying parcels. They will deliver anything from a packet of cigarettes to your home”.

*(Distribution manager from retailer)*

“The average (name of major supermarket grocer) shopping basket weighs 84 pounds. How do you get this home on public transport? As local authorities increase their controls on which vehicles are allowed into the city centre and when they are allowed in and at what cost this will help to fuel the demand for home delivery”.

*(Distribution manager from retailer)*

It is likely that vehicle manufacturers will have to design suitable vehicles for home delivery operations in the coming years and that retailers will need to devise better distribution systems for home shopping/delivery:

“I’m absolutely convinced that whatever form home delivery takes we are going to need more small vehicles. But what I’m also convinced about is that those small vehicles have to be more socially acceptable to me as a member of society. I don’t want black smoke, I don’t want noise, I don’t want emissions, I want something equivalent to the average family car”.

*(Distribution manager from retailer)*

“Technology is only just beginning to emerge that will allow you to control and manage home delivery centrally. All of us have so far come up with trials which are crude. The only way we can handle it at present is locally and crudely.”

*(Distribution manager from retailer)*

### **5.5.2 Outsourcing of service activities**

The continuing outsourcing of service activities together with the continued growth in the demand for technological equipment that requires regular servicing may likely lead to a ever-increasing growth in service vehicle traffic in urban areas. Local authorities need to consider whether they want service trips that take place in cars to be treated in the same way, in policy terms, as non-essential car trips (which is what happens as present). Alternatively, local authorities could decide that these trips are essential, and will then have to find suitable means by which to identify and assist these trips. Local authorities also need to think how to best organise on-street parking facilities for service vehicles. Service companies and their customers need to work closely together to establish the urgency with which service visits need to be made to premises (and, indeed, whether a vehicle trips need to be made at all) as well as the transport and parking facilities at these premises.

## 6. References

Anderson,S., Browne,M. and Allen,J., 1998 *The UK Packaging Waste Regulations: the implications for freight transport and logistics*, Institute of Logistics, Corby.

Barton,H., Davies,G. and Guise,R., 1995, *Sustainable Settlement: a guide for planners, designers and developers*, Local Government Management Board and the University of the West of England, Bristol.

Civic Trust, County Surveyors Association, and Department of Transport, 1990a, *Lorries in the community*, HMSO, London.

Civic Trust, County Surveyors Association, and Department of Transport, 1990b, *Lorries and Traffic Management: A Manual of Guidance for Local Authorities and others*, HMSO, London.

DETR, 1998, *A New Deal for Transport: Better for Everyone*, The Government's White Paper on the Future of Transport, Cmnd.3950, The Stationery Office.

DETR, 1999, *Sustainable Distribution: A Strategy*, DETR.

URBED, 1994, *Vital and viable town centres - meeting the challenge*, (for the Department of the Environment) HMSO, London.

Freight Transport Association, 1998, *Delivering the Goods: Best Practice in Urban Distribution*, FTA.

Llewelyn-Davis, 1997, *Sustainable Residential Quality: New Approaches to Urban Living*, report for the London Planning Advisory Committee, the Government Office for London and the DETR.

Mazza,L. and Rydin,Y., 1997, Urban Sustainability: Discourses, Networks and Policy Tools, *Progress in Planning*, Vol.47, pp.1-74.

Millendorf, S., 1989, "Facilitation of goods movement in the New York city area", in Chaterjee, A, Fisher, G, and Staley, R, (eds) *Goods Transportation in Urban Areas*, pp.25-30, American Society of Civil Engineers.

Ogden,K., 1992, *Urban Goods Transportation: A Guide to Policy and Planning*, Ashgate, Hants.

UK Round Table on Sustainable Development, 1996, *Defining a Sustainable Transport Sector*, UK Round Table on Sustainable Development.

Urban Task Force, 1999, *Towards an Urban Renaissance*, The Stationery Office.

World Commission on Environment and Development, 1987, *Our Common Future*, Oxford University Press.