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BESTUFS II

Best Urban Freight Solutions II

Co-ordination Action

Priority 1.6.2 Sustainable Surface Transport

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Environmental Zones in European Cities, Accommodating the needs of passenger and freight transport in cities, and BESTUFS Project Recommendations

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1 Introduction BESTUFS

The EC established the Co-ordination action (CA) on BEST Urban Freight Solutions II (BESTUFS) as the follow up initiative to the Thematic Network (TN) BEST Urban Freight Solutions carried out from the year 2000 to 2003. BESTUFS started in 2004 with a duration of 4 years. BESTUFS aims to maintain and expand an open European network between urban freight experts, user groups/associations, ongoing projects, the relevant European Commission Directorates and representatives of national, regional and local transport administrations and transport operators in order to identify, describe and disseminate best practices, success criteria and bottlenecks of City Logistics solutions. The concept of a Co-ordination Action thereby seeks to obtain the co-operation of experts and projects with already existing or just emerging experiences and expertise, and the collection and raw analysis of existing project results from national and European projects - rather than starting new research activities.

To reach the above objective, the results of national, European and international projects and investigations about the urban transportation of goods are considered, and the expertise and knowledge of the different stakeholders in urban goods transportation is obtained. The main sources for this deliverable focus on the expertise and knowledge of CA participants by collecting and working up the views and contributions of the different individuals or groups in the BESTUFS workshops and from the material collections in work package 2 (Best Practice).

For the duration of the BESTUFS Co-ordination Action recommendations will be described each year as a public deliverable.

Thematic focus

The thematic workshops organised in BESTUFS in year 4 focused on the following themes

- "Environmental Zones in European Cities: impacts and opportunities for urban freight" (addressed in a workshop on 13-14 March 2008 in Madrid, Spain) – including technical visits to the Centre of Emission Control and the Centre of Mobility Management.
- “Accommodating the needs of passenger and freight transport in cities” (addressed in a workshop on 27-28 September 2007, Vilnius, Lithuania).

These themes are addressed in sections 2 and 3 of this report.

Section 4 of this report contains overall policy and research recommendations from the BESTUFS project.

2 Environmental Zones

2.1 Introduction

A workshop entitled "Environmental Zones in European Cities: impacts and opportunities for urban freight" was held on 13-14 March 2008 in Madrid, Spain. The workshop addressed the issues of Environmental Zones in European cities. This topic had not received its own workshop in BESTUFS previously, but a presentation about the Environmental Zone in Stockholm had been made at the BESTUFS workshop in Brussels in September 2000. This workshop discussed planning, policy-making, decision-making and implementation related to environmental zones in European cities and the implications of such zones for urban freight transport.

A total of twelve presentations were made at the workshop including presentations of Environmental Zone schemes, projects and views in Madrid, Cologne, Bologna, Gothenburg, London, Suceava and Dutch cities. In addition, presentations were made about Spanish policy making for transport emissions, the importance of the commercial sector in city centres, the role that vehicle manufacturers can play in reducing goods vehicle emissions, loading and unloading arrangements for electric vehicles in Montpellier and the Environmental Scoreboard project for freight transport operators in Spain. During the workshop, technical visits were made to the Centre of Emission Control and the Centre of Mobility Management in Madrid.

A Roundtable discussion of the related issues and potential initiatives also took place. The workshop was attended by 42 participants from across Europe.

Several conclusions can be drawn from the workshop. First, that the benefits of examining EZs in different European cities and comparing between them helped to highlight the advantages and disadvantages of various approaches. Second, that the introduction of EZs began in European cities where the need was most pressing, in order to meet air quality standards. Third, that the introduction of more EZs in other towns and cities in member states will be influenced by urban policy developments and trends in air quality.

2.2 Definition

Several terms are often used interchangeably when referring to this topic: these are "Environmental Zones" (EZs) "Low Emissions Zones" (LEZs), "Umweltzonen", "Milieuzones", "Lavutslippssone", "Miljozone", and "Miljözon". In this report we will use the term "Environmental Zones" throughout. An "Environmental Zone" (EZ) is a defined geographical area that can only be entered by vehicles meeting certain emissions criteria. The purpose of an EZ is to either restrict or charge the most polluting vehicles if they enter the EZ when their emissions are over the set level. In this way, an EZ can lead to air quality improvements because it capitalises on recent EU legislation for road vehicles, which have set progressively tighter emission limits on new vehicles manufactured over the past decade. EZs are implemented in locations in which air pollution has reached levels that are dangerous to public health. By introducing the EZ it is hoped that air quality is improved and that this will reduce the health problems and fatalities associated with poor air quality.

As noted by the Low Emission Zone in Europe Network (LEEZEN) "air pollution is responsible for 310,000 premature deaths in Europe each year...more than caused by road accidents. Air pollution particularly affects the very young and the old and those with heart and lung diseases - both common causes of death in Europe. It also triggers health problems like asthma attacks and increases hospital admissions and days off sick. The human health damage that air pollution causes is estimated to cost the European economy between €427 and €790 billion per year. Because of this danger to health, many countries around the world, as well as the European Union (EU), have set air quality targets to be met. In the EU, it is in order to meet these targets that LEZs are being implemented."

(<http://www.lowemissionzones.eu>)

The main air pollution problems today in Europe are particulate matter (PM), nitrogen dioxide (NO₂) and ground level ozone (O₃). Road traffic is a significant source of both PM and NO₂. The Framework Directive 1996/62/EC describes the legal framework for the assessment and control of air pollution in the European Union. Directive 1999/30/EC set the limit values for PM and NO₂. If the limit values are exceeded, the air quality framework directive requires member states to develop 'plans or programmes' designed to ensure that the limit values are met. An EZ offers one approach by which emissions of these pollutants can be reduced in areas where road traffic makes a significant contribution to air concentrations and thereby (together with other actions) help authorities to meet the European air quality standards.

The noise directive will also require development of action plans in some areas, and EZs may be used to address traffic noise problems in affected areas in future.

2.3 Policy approaches concerning Environmental Zones

An Environmental Zone (EZ) is an area that can only be entered by vehicles that meet specified emissions criteria. This can be applied to just goods vehicles, a selection of motor vehicle, or all motor vehicles. An EZ therefore differs from the following types of access restrictions that can be placed on goods vehicles in urban areas:

- weight restrictions
- length restrictions
- restrictions based on utilisation of loading capacity
- time restrictions
- permanent street closures and pedestrianisation schemes
- road user charging

However, the above types of access restrictions can be implemented in addition to an EZ. EZ schemes can take many forms based on their objectives, the geographical area they cover, the times at which the EZ is in force, the vehicle emissions standards required for vehicles to enter the zone, the types of vehicles that need to comply with the EZ, and the implementation and enforcement approaches used. EZs have already been successfully implemented and run for several years in Scandinavia, and are being widely considered by other European cities. They are seen as one of the options for helping to improve urban air quality. Table 1 summarises the key features of EZs already implemented in Europe.

Table 1: Key aspects of current Environmental Zones in Europe

Key aspects of EZs	Practice in current EZs in Europe
<i>Objectives of the EZ</i>	The objective of an EZ is to improve environmental standards in the area in which the EZ is implemented. The main environmental goal is to reduce vehicle pollutant emissions and thereby improve air quality (helping to reduce fatalities and health problems caused by poor air quality). In addition EZs can also help to improve other environmental standards by reducing traffic noise, and improving road safety.
<i>Geographical area covered by the EZ</i>	Range from small, historic city centres (e.g. the city centre of Bologna which is 3.2 km ²) to entire cities (e.g. virtually all of Greater London – which is approximately 1580 km ²). The vast majority of existing EZs are located in urban areas (as this is where air quality levels tend to be worst), but there are examples of EZs on motorways in Italy and Austria.
<i>Times at which the EZ is in force</i>	Of the EZs already implemented all, with the exception of some of the Italian schemes, operate 24 hours a day, 365 days a year. Some of Italian schemes are only in force for certain hours per day during winter months.
<i>Vehicles included in the EZ restrictions</i>	All current EZ schemes cover heavy goods vehicles over 3.5 tonnes. All EZs, with the exception of the Dutch schemes, also include buses and coaches. The London EZ will also include vans over 1.205 tonnes (unladen) and minibuses with over 8 seats from 2010. The German EZs cover all vehicles except motorcycles. The Italian schemes include all vehicles.
<i>Emissions standards required by the EZ</i>	Goods vehicle emissions standards required by EZs are based on Euro engine standards. Most current EZs require goods vehicle to meet Euro 2 standards, but some (including London) require Euro 3 standards. Some schemes permit older vehicles to be retrofitted in order to meet the required emissions standards, while others do not. Many Italian schemes require Euro 2 standards for diesel engines and Euro 1 for petrol engines.
<i>Enforcement approaches used in the EZ</i>	Some current EZs use manual enforcement, while others use automated systems. Manual systems typically involve vehicles having to register and then stickers having to be displayed on windscreens that are manually checked by police. Automated systems make use of fixed and mobile camera-based ANPR (automatic number plate recognition) and number plate checking with the relevant national vehicle registration body.
<i>Fines imposed on non-compliant vehicles entering the EZ</i>	Range from 40 € (and one point in the national traffic penalty register) in Germany to £1000 in London (approximately 1250 €).

2.4 Environmental Zones in European towns and cities

Table 2 summarises the EZs that have already been implemented or which are planned to be implemented soon in European countries based on information currently available.

Table 2: Planned and existing Environmental Zones in European cities and regions

Country	Existing and planned EZs
Austria	One scheme on the A12 motorway started in 2007.
Denmark	EZs planned to start in five cities (Aarhus, Aalborg, Copenhagen, Frederiksberg and Odense) in September 2010.
Germany	EZs have already begun operating in 12 cities in 2008 (Cologne, Dortmund, Berlin, Hannover, Leonberg, Ilsfeld, Ludwigsburg, Pleidelsheim, Schwäbisch-Gmünd, Mannheim, Tübingen and Stuttgart). EZs are planned to start in another 10-20 German cities between late 2008 and 2010.
Italy	EZs have already been implemented on the A22 motorway, in Bologna, and in towns and cities in the following regions (during winter months and specified hours per day): Emilia-Romagna, Lombardia, Piemonte, Veneto, and Bolzano.
The Netherlands	EZs have already begun operating in 9 cities in 2007 and 2008. Another 8 cities are planning to introduce EZs in 2008 and 2009.
Norway	EZs are planned in Bergen, Oslo and Trondheim in 2009 and 2010.
Spain	An EZ is planned to start in Madrid in 2008 as part of the Air Quality Strategy.
Sweden	EZs have been implemented in Stockholm, Gothenburg, Lund and Malmo.
UK	An EZ has been implemented in London in 2008.

Summaries of some of the EZs that are currently operating and planned in urban areas in Europe are provided below.

Sweden

The first European country in which EZs in urban areas were implemented was Sweden. EZs have been in place in Sweden since 1996, when they were introduced in the city centres of Stockholm, Gothenburg and Malmo, with the purpose of improving air quality and reducing noise. An environmental zone was also introduced in Lund in 1999. These EZs in Swedish cities target all diesel lorries and buses over 3.5 tonnes. The EZ schemes initially required all these vehicles entering the area to be no more than 8 years old. This has been subsequently amended to vehicles no more than 6 years old (or no more than 8 years old if they meet Euro 2 engine standards). The EZ is enforced using a permit system for older vehicles (windscreen stickers) with visual inspections during the year. Vehicles driving illegally in the EZ are subject to a fine; the scheme is enforced by police authorities. The compliance rate (based on visual inspections of certificates displayed on the vehicle) is around 90%. The EZ is simple and has low administration costs. The geographical areas and inhabitants living within the EZs in the four Swedish cities are shown in Table 3.

Table 3: Environmental Zones in Sweden

City	Area of zone (km ²)	Resident population
Gothenburg	15	100,000
Lund	4	17,000
Malmo	9	80,000
Stockholm	35	250,000

Source: Joint Expert Group on Transport and Environment, 2005.

Note: the Gothenburg scheme was extended to 25 km² in 2007.

The total volume of traffic within the Stockholm environmental zone is approximately 500 million vehicle km per year. Lorries and buses over 3.5 tonnes gross vehicle weight (gvw) represent approximately 5% of this traffic (Joint Expert Group on Transport and Environment 2005).

Italy

Several schemes have already been implemented In Italy. These include towns and cities in the following regions: Emilia-Romagna, Lombardia, Piemonte, Veneto, and Bolzano (these EZs are in operation during winter months and specified hours per day), in Bologna, and in Rome.

The urban areas in the Lombardy region with a population of more than 250,000 (Milano-Como-Sempione, Bergamo and Brescia) are subject to a scheme that is intended to improve air quality, especially particulates. These urban areas have a combined area of 1,650 km² and population of approximately 4 million. Virtually all roads in these urban areas are subject to the restrictions that prohibit pre-Euro 2 diesel and pre-Euro 1 petrol vehicles (passenger and goods vehicles), with the exception of the motorways. These restrictions are in force between 0800–1000 and 1600–1900 Monday to Friday from November to February.

In Bologna, the Municipality implemented a “Limited Traffic Zone” (LTZ) in 2005. The LTZ area is 3,2 km² and roughly corresponds to the city’s historical centre. Restrictions are in force from 07.00 - 20.00, seven days per week. The LTZ is intended to reduce unauthorised cars from driving in this sensitive area; using a camera-based enforcement system the fines are issued to car drivers not authorised to access. Drivers wishing to enter the LTZ require a permit that they have to pay for. The LTZ has resulted in a reduction of more than 30% of car traffic in the LTZ. In 2006 the Municipality approved methods by which to encourage greater use of cleaner goods vehicles in the LTZ and to promoting load sharing between small operators. Access to the inner city (one part of the LTZ) for goods vehicles is determined by the emissions standards of the vehicles. Non-Euro emission standard goods vehicles are only permitted to enter for 3.5 hours of the working day, Euro standard goods vehicles for 7.5 hours, and methane/LPG/electric vehicles for 9.5 hours. This has resulted in 4% of goods vehicles used now being powered by methane/LPG/electricity, as well as operators replacing non-Euro emission standard goods vehicles with ones that comply with Euro standards. It is intended that these engine standards and entry times will be applied to the whole LTZ in future. As previously mentioned, operators wanting to send vehicles into the LTZ have to purchase permits (initially these permits were free). The yearly subscription varies in relation to the emissions criteria of the goods vehicle (ranging in price from 25 € to 300 € per year). Since charging for these delivery permits was introduced the number of delivery permits issued has fallen by 27%.

The historical city centre of Rome has been subject to a scheme since the early 1990s that addresses both traffic congestion and air pollution by limiting the vehicles accessing the city centre. The scheme includes both cars and goods vehicles, and operates during daytime hours (cars: 0630–1800 Monday to Friday and 1400–1800 Saturday; commercial vehicles: 1000–1400 and 1600–2000). This scheme is not truly an EZ as vehicle emissions standards are not currently part of the scheme. Permits are

granted to vehicles that need to enter the zone (residents and others) in return for a annual charge (550 € for freight vehicles). Initially the scheme was enforced manually by the Police, but this resulted in many vehicles entering the zone illegally. The system has subsequently become automated based on the use of cameras and ANPR software. Analysis suggests a 20% reduction in vehicle traffic during the restricted times. However, higher traffic levels do occur in the evening (Joint Expert Group on Transport and Environment 2005).

Germany

EZs have already begun operating in several cities during 2008 and others are planned to start in between late 2008 and 2010.

In Cologne, an EZ was suggested as a means by which to reduce air pollution as part of the Air-quality management plan in 2005 (in conjunction with traffic light optimization and other medium-term measures). The EZ was introduced on 1st January 2008. It comprises the city centre as well as parts of the districts of Deutz and Mülheim (an area of 16km² in Cologne's inner city). Passenger cars, buses and lorries are all included in the scheme and have been classified into four categories based on their emission levels (and given different colours of sticker):

- Euro 4 - Green sticker
- Euro 3 - Yellow sticker
- Euro 2 - Red sticker
- Euro 1 or older - No sticker (i.e. vehicles with the highest pollution levels)

Only vehicles with a sticker (green, yellow or red) are allowed to travel in the EZ. Vehicles without a sticker can only enter if they have a certificate of exemption. The city authority in Cologne has already established that the current traffic restrictions in the Cologne EZ "will not be sufficient to reach the maximum permissible nitrogen dioxide levels in 2010. This is why the ban on driving in the Environmental Zone will be extended to include vehicles of the pollution category 2, red sticker, as of January 1, 2010. A series of tests in 2009 will show whether these restrictions are enough or whether the ban on driving in the Environmental Zone will also have to be extended to vehicles with a yellow sticker".

UK

Air pollution is a serious problem in London. It has been estimated that it results in 1,000 premature deaths per year, and 1,000 hospital admissions per year. There are particular problems with emissions of particulate matter (PM) and nitrogen oxides (NOx). The situation is worst in central London and near Heathrow. Road traffic is a major source of these emissions, and trucks, buses, and coaches contribute more than other road vehicle categories. Following a major feasibility study, an EZ was introduced in London in February 2008. It covers virtually the whole of Greater London (which is approximately 1580 km²) and applies 24 hours a day, 365 days a year. It currently only applies to diesel engine heavy goods vehicles (over 3.5 tonnes). These vehicles have to meet Euro 3 engine standards in order to not have to make a payment or be fined (this will be raised to Euro 4 standards in 2012).

The scheme will also be extended to larger vans (diesel-engine vehicles between 1.205 tonnes unladen and 3.5 tonnes) and minibuses in 2010, and to buses and coaches in 2012. There are few exemptions among these vehicles. Vehicles that enter the EZ but which do not meet the emissions standards can pay a fee of £200 per day. Vehicles that fail to register with the EZ scheme and do not meet the emission standards are subject to a Penalty Charge Notice of £1000 (approximately 1250 €). The EZ is enforced using fixed and mobile camera-based ANPR (automatic number plate recognition). The London scheme is currently the only EZ in the UK.

The Netherlands

In the Netherlands, stakeholders have reached agreement that EZs would improve air quality in urban areas through the use of clean goods vehicles are more efficient urban freight transport. Parties to this

agreement include: the Ministries of Transport and the Environment, city authorities, organisations representing freight operators and shippers (the Commission on Urban Freight Transport will act as arbitrator if disagreements occur). The following engine emission standards will be required in EZs in Dutch urban areas:

- Euro 0 or 1 engines are not allowed
- Euro 2 or 3 engines only with certified particulate filter
- 1 January 2010: Euro 4 or higher (until 2013 also the latest Euro 3 with filter)

Particulate filters are subsidized (with 34 million € provided for filters in 2008). When an EZ is being planned for a city all parties have to reach agreement on the following issues before a scheme can go ahead: proving the environmental impact of goods vehicles in the area concerned, the geographical scope of the EZ, and a project plan on how to improve the local urban distribution situation. EZs have already been introduced in 9 Dutch cities, and others are planned. Currently 19,000 goods vehicles have been fitted with particulate filters as a result. Other policies that are being considered in conjunction with EZs to improve the efficiency of urban distribution include: the use of bus lanes by goods vehicles, infrastructural improvements, reviewing and coordinating delivery time windows and other restrictions, greater use of night time deliveries, and more use of freight transport by canals and tram.

Denmark

EZs are being planned in Copenhagen and four other Danish cities. The objective of the Copenhagen EZ would be to improve air quality, especially in terms of PM10 and NOx. The zone would cover an area of 45 km² with 325,000 inhabitants (this is equivalent to 65% of the inhabitants of the Copenhagen Municipality). The neighbouring municipality of Frederiksberg (with a population of 88,000 people) will also be included. The proposed scheme would result in all heavy goods vehicles and buses greater than 3.5 tonnes gross weight having to meet Euro 3 engine standards for particulate matter. Older vehicles can be fitted with particulate filters in order to operate in the inner city of Copenhagen. The Danish Government is making subsidies available to operators that are equivalent to 30% of the total filter cost. The police will be responsible for enforcing the proposed scheme, and parking attendants will issue fines to parked vehicles that do not meet scheme requirements. The cost of implementation and operation of the environmental zone is estimated to be £45–100 million (Joint Expert Group on Transport and Environment 2005).

Norway

In Norway, the Ministry of Transport commenced by establishing an EZ working group. The intention of EZs in Norway would be to improve urban air quality. The working group considered the geographical area that EZs could cover, and the legal basis for such a scheme. Local authorities are responsible for deciding whether to implement an EZ. EZs are planned to commence in Bergen, Oslo and Trondheim in 2009 and 2010.

2.5 The European Commission and national legal frameworks for Environmental Zones

The European Community has limited involvement in urban traffic restrictions as long as they are implemented in a manner that respects the general principles of the Treaty. However, as noted by the Joint Expert Group on Transport and Environment, as more EZs are implemented in urban areas in member states to help meet EC air quality standards, these schemes could potentially come into conflict with Treaty principles if not carefully set up. Given current EU policies and the link between the use of infrastructure, air quality and noise problems, EZs are relevant from an EU perspective in the context of road traffic restrictions. Therefore the Commission decided to ask the Joint Expert Group on Transport and Environment to explore the topic of EZs in 2005 – a working group was set up under the Joint Expert Group and a report written.

EZs must be carefully set up in relation to the ways in which they affect foreign-registered vehicles. Unless care is taken, traffic restrictions including EZs, may constitute a barrier to the free flow of goods and therefore conflict with Article 28 of the EC Treaty. The European Court of Justice has made it clear that, to be compatible with the Treaty, any restrictions affecting intra-Community trade have to be necessary, proportionate and non-discriminatory. “In other words, while the protection of the environment would be an acceptable requirement of general public interest, a national measure which affects the free movement of goods must also be necessary and proportional in the pursuance of this aim”. It should be noted that while the EC Treaty forbids discrimination against foreign goods, it does not prevent discrimination against a country’s own goods.

In most EU countries, the legal framework for road traffic restrictions is a combination of national road traffic legislation and regional/local regulations. The Joint Expert Group on Transport and Environment identified that most EZs they reviewed have their legal basis in the national road traffic legislation (which have usually been amended to include environmental concerns as a reason for traffic restrictions). In some EU countries, the implementation of EZs has been carried out by local authorities within the framework of the national legislation (in Sweden, for example, local authorities have a significant degree of freedom to design and decide about EZs; and in the UK the powers for local authorities to introduce restrictions to improve air quality (including EZs) was introduced through an Act of Parliament in 1995). In other countries, such as Denmark, national “road laws only allow environmental zones on an experimental basis and an approval from the Ministry of Justice is needed before a municipality can implement an environmental zone locally”.

However, in practice the implementation of EZs zones usually requires co-operation between the national government and local authorities to help ensure a common system within a country. In the Netherlands, the development of EZs has been a joint initiative between the national government, city authorities, and organisations representing freight operators and shippers.

2.6 Operator behaviour and costs as a result of Environmental Zones

Work carried out by the University of Westminster in 2003 as part of the low emission zone (LEZ) feasibility study for London examined the behavioural adaptation strategies that freight companies might adopt in response to the introduction of such a zone in the London area, as well as the operational and financial impacts of such a scheme. This included investigation of companies’ fleet replacement strategies, potential compliance, the likelihood of route diversion, and cost implications of such a scheme for operators.

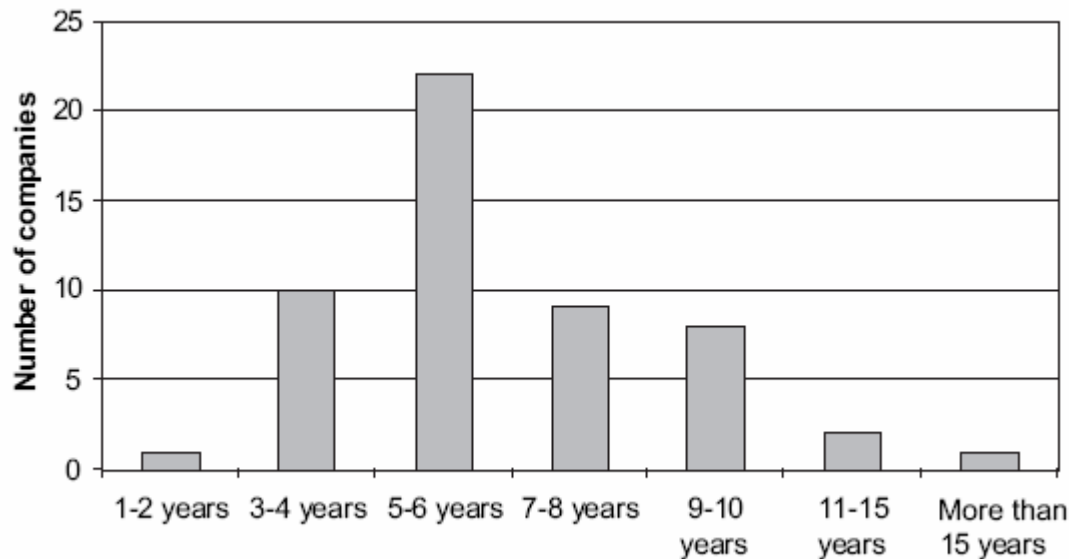
The research results indicated that older goods vehicles would be displaced to the companies’ operations outside London (i.e. some companies would adopt a non-technical response to the EZ policy and would operate non-compliant vehicles elsewhere and use compliant vehicles in London). This action could lead to net increases in air pollution from freight transport vehicles elsewhere in the UK as a result of the introduction of a London EZ. This redeployment strategy would, however, be available only to companies operating relatively large commercial vehicles fleets on a national basis. Companies with small fleets would have far less opportunity to redeploy their vehicles in this manner. Also, firms operating their entire fleet in London (which tend to be small companies) would not have the opportunity to redeploy their fleet.

The likely impact of an EZ on operating costs is closely related to the frequency with which companies replace their vehicles and the stringency of the EZ (i.e. the vehicle engine standard required at a given date). Assuming that the EZ introduced required that an engine standard be met several years after that engine standard first became available, some companies will meet this standard through their existing vehicle replacement strategy. These companies would not therefore incur extra costs as a result of the implementation of an EZ. However, companies that would not otherwise have upgraded or replaced their vehicles within this time period would experience increased costs. The rate of vehicle replacement for vehicles over 3.5 tonnes gross weight varied widely between the companies in the survey work for the London EZ (see Figure 1).

Companies operating specialist vehicles (such as refuse collection or cement mixer lorries) were found to have longer replacement cycles than companies with non-specialist vehicles. This is related to the higher cost of purchasing specialist vehicles and may also be related to the lower annual distances that these vehicles tend to perform.

The majority of companies with larger fleets (i.e. more than 20 vehicles) had replacement policies that meant their vehicles were normally renewed at 3–6-year intervals. Some of the smaller companies interviewed also had a 3–6-year replacement cycle, although a higher proportion had longer replacement cycles than companies with larger fleets.

Figure 1: Respondents’ replacement cycle for vehicles over 3.5 tonnes in the London EZ feasibility study in 2003 (answered by 53 respondents)



The feasibility study also assessed the potential socio-economic effects of a London EZ: results indicated that it would be likely to improve the health of Londoners by reducing air pollution-related impacts, and would also lead to some noise reduction. Analysis suggested that the economic benefits of these environmental improvements would more than offset any costs of introducing and operating the scheme. Table 3 shows the socio-economic costs and benefits of the London EZ as reported in the feasibility study.

Table 4: Potential socio-economic effects of the London EZ (from the feasibility study)

Benefits	Disbenefits
Improved air quality – all pollutants (not just NO ₂ and PM ₁₀)	Disproportionate impact on expensive “specialist” vehicles, e.g. coaches, specialist lorries
Progress towards EU air quality limit values	Greater relative impact on smaller companies
Health benefits – lower lost time at work, NHS costs	Greatest relative impact on road haulage, the wholesale, trade, manufacturing sectors, and smaller construction/building companies
Small reduction in noise	Higher potential business costs for companies (which could negatively affect attractiveness)
More attractive environment for companies and people	
Safety benefits of newer vehicles	
Economic and employment benefits for the vehicle manufacturing sector, including retrofit equipment manufacturers and fitters	

Depending on the stringency of the EZ standards introduced, however, the scheme could result in significant cost increases for vehicle operators. The EZ was found to be likely to have a disproportionate impact on certain fleet operators, notably those with specialist vehicles. These specialist vehicles are much more expensive to purchase and therefore tend to have longer replacement cycles (i.e. they are operated for longer before being replaced). An alternative, which is

present in the Swedish EZ schemes, is to allow older specialist vehicles to operate in the EZ, provided they have appropriate pollution abatement equipment fitted. The impact on the larger conventional fleet operators will be less.

The research results also suggested that smaller London-based companies operating goods vehicles could also be affected disproportionately by a London EZ, as they have fewer opportunities to redeploy their vehicles outside London. Also, smaller companies often retain their vehicles for longer than larger companies, which means that they are more likely to have to reduce their replacement cycles as a result of an EZ being introduced.

When asked about the likely costs of a London EZ and the impact on business, a very wide range was reported (between 0.1 and 70% of vehicle operating costs). Smaller companies expressed considerable concern about the cost implications of the LEZ scheme, especially if it meant that they would have to buy new vehicles. In general, the larger companies did not consider the cost implications to be such a problem as small companies, as long as there was sufficient time for them to prepare for the introduction of the EZ. These larger companies were more likely to meet the LEZ requirements through their existing vehicle replacement policy than smaller firms.

Respondents raised several other cost issues during the interviews in the London EZ feasibility study. These included the following.

- A compulsory EZ in London was likely to reduce significantly the residual value of commercial vehicles that do not comply with the scheme.
- Many companies opt to have vehicles supplied on a leased basis, which are contracted to operate for a set period. An EZ could affect the use of these vehicles, and would cause problems in terms of the lease arrangement.
- Some respondents felt that retrofitting of emission reduction equipment is not a good option for small companies, as vehicles have to be off the road while this takes place.
- Many operators foresaw greater problems if EZs were also introduced in other UK urban areas rather than just in London, as this would reduce the flexibility to move their fleets around and also result in greater cost increases.
- Several respondents from firms with large fleets said that it would cause them significant problems if EZs were also introduced in other UK urban areas that had compliance arrangements different from any London scheme. They were therefore keen to see a common standard for EZs if such schemes were introduced in several urban areas.

An EZ can also potentially result in higher costs for businesses located within the EZ, as goods delivery and collection costs may increase and customer levels could be affected.

2.7 Benefits of Environmental Zones

This section contains a summary of the environmental benefits of EZs, either based on the actual outcomes of EZs (Stockholm, Gothenburg and schemes in Lombardy) or from modelling and feasibility work prior to the introduction of an EZ (London).

An assessment of the air quality benefits of the Stockholm scheme in 2000 found that emissions of NO_x from heavy vehicles within the zone were reduced by 10% and emissions of particulates by 40%. The corresponding reductions in air pollution concentrations were estimated at 1.3% reduction for NO_x (with a range of 0.5% - 2%) and 3% for particulates (with a range of 0.5% to 9%), compared to the predicted concentrations without the zone. The air pollution reductions are much lower than vehicle emission reductions because of the relative importance of goods vehicles to total air quality concentrations. The analysis also concluded that the effect of the environmental zone was large when compared with other actions that it was possible for the local city administration to implement.

The Gothenburg EZ has produced the following reductions in vehicle emissions: 3.6 % reduction of Carbon monoxide (CO), 6.1 % reduction of Hydrocarbons (HC), 7.8 % reduction of Nitrous oxide (NOx), and 33.2 % reduction of Particulate matter (PM).

Evaluation of the EZ schemes in the Lombardy region of Italy has shown daily mean emission reductions of 7% for PM10 and NOx, and 11% for CO (Joint Expert Group on Transport and Environment 2005).

In the feasibility study it was estimated that the London EZ would result in a 15% reduction in PM10 emissions by 2012 and similar reductions in NOx. This would result in gains in life expectancy, reductions in premature deaths and hospital admissions. In monetary terms, the health benefits of the EZ were estimated to be £240-£640 million up to 2015. Other non-health benefits were predicted to include a reduction in building damage and small reductions in noise.

The Joint Expert Group on Transport and Environment produced a qualitative assessment of EZs against a range performance indicators in European EZ studies as part of the work they carried out in 2005. This is shown in Table 5.

Table 5: Qualitative description of impacts of Environmental Zones

<u>Indicator</u>	<u>Qualitative description of impacts</u>
<u>Particulate emissions</u>	•••
<u>NOx Emissions</u>	••
<u>CO emissions</u>	•••
<u>HC emissions</u>	•
<u>Ground level ozone</u>	•
<u>CO₂ emissions</u>	•
<u>Noise</u>	•
<u>Quality of life</u>	•
<u>Capital cost</u>	√√
<u>Operating cost</u>	√
<u>Cost to operators</u>	√√
<u>Cost to businesses within zones</u>	√√

Source: Joint Expert Group on Transport and Environment, 2005.

Note: With regard to costs, emissions, and noise, an "improvement" refers to a reduction, whilst a "degradation" relates to an increase.

Key:

- - slight improvement
- - large improvement
- - very large improvement
- √ - slight degradation
- √√ - large degradation
- √√√ - very large degradation

2.8 Recommendations on Environmental Zones

Recommendations to the European Commission by the Working Group of the Joint Expert Group on Transport and the Environment (in 2005)

- The Working Group considered EZs to be “a potentially useful instrument to improve environmental conditions in urban areas, and, in particular, help Member States to meet Air Quality Limit Values”.
- The Working Group therefore recommended the Commission “to consider appropriate action to facilitate the early introduction of EZs in interested Member States and cities”.

- The Working Group made suggestions about how the Commission could potentially assist Member States with the early introduction of EZs. These included:
 - Developing a common format for information sharing between Member States about traffic restrictions, e.g. weekend bans, environmental zones etc.
 - Promoting a harmonized road sign for those approaching an environmental zone, to benefit drivers travelling to other Member States. Harmonisation of road signs is a responsibility for ECE and the Inland Transport Committee.
 - Develop a common accreditation system for retrofitting of vehicles. It is important that where a zone is introduced retrofitted vehicles that meet the entry criteria from other Member States have equal access to the Zone. Member State could therefore agree accreditation procedures to ensure non-discrimination in this area.

BESTUFS supports these views of the Joint Expert Group on Transport and the Environment.

The Low Emission Zone website that has been established by the Low Emission Zone in Europe Network (LEEZEN) (a network of LEZ cities and ministries who want to ensure that drivers can find the information they need on LEZs as easily as possible - <http://www.lowemissionzones.eu>) demonstrates the value of bringing together information about EZs in a single location for policy makers and operators.

The European Commission also has a role to play in helping to ensure that EZs located in Member States (especially those located in different countries but relatively close to each other) have similar or the same compliance arrangements. A common standard for EZs makes it far easier for freight operators to cope with such schemes (as a single course of action by a company in replacing or retrofitting its vehicles will result in achieving compliance in all EZs).

Despite the usefulness of LEZs to locally improve the environmental conditions in order to achieve threshold air quality values; the obligation of the EC to improve the environmental conditions overall remains. The disadvantages of LEZs (including causing detours and thus additional pollution from non-compliant vehicles, and the redeployment of more polluting vehicles to operate at other locations without an EZ) which can cause additional operational as well as administrative burdens must be discussed on a European level because general European measures might be easier to implement, will have a European-wide coverage and might be more efficient overall. The Euro-norms are moving in the right direction and a further constraining of vehicle emission thresholds seems possible.

Recommendations for national governments and local authorities

Policy makers considering establishing EZs need to take account of the following BESTUFS recommendations in determining the suitability and particulars of an EZ scheme.

- Determining the objectives of the EZ – whether it is only concerned with emissions, or if it is also concerned with traffic levels, noise, safety etc. The objectives of the EZ will help determine the details of the particular EZ scheme required.
- The geographical area to be covered by the EZ – whether it is to cover a small area in the city centre or a much larger area. The geographical size of the EZ is likely to be dependent on its objectives. If the aim is to reduce pollutant emissions across the entire urban area, a large geographical scheme is likely to be required. Whereas if the air quality reduction is required in a specific part of the city then an EZ covering a small area may be suitable.
- The boundary of the EZ should have a clear definition. This could be based on natural and physical barriers such as rivers, bridges, ring roads etc., or it could be based on administrative boundaries.
- Signage of the boundaries of the EZ is important so that drivers know where the scheme is in force. This may be of particular importance for foreign drivers.

- Information provision about the EZ scheme – where an EZ has been introduced policy makers should put in place the necessary information dissemination so that drivers that will potentially be affected are informed about the scheme and what they need to do in relation to it. This is likely to include the provision of a clear and easy to use website, which provides information in several languages.
- Times at which the EZ is in force – policy makers need to decide the duration of the restrictions in the EZ (i.e. whether they are in force 24 hours a day, 365 days a year or for less than this). This decision may be influenced by whether permanent improvements in air quality are required or only improvements at particular times.
- Vehicles included in the EZ restrictions – policymakers need to decide which vehicles to include in the EZ restrictions. Modelling work is likely to be necessary in order to determine which vehicle categories should be included.
- Emissions standards required by the EZ – as with the decision about vehicles included in the scheme, modelling work is likely to be necessary in order to determine which vehicle emissions standards are required by the EZ.
- In making decisions about emission standards required in the EZ, policy makers should study the potential effects of different standards on goods vehicle operators, taking particular account of those operators most likely to be adversely affected (these are likely to include specialist vehicle operators, small operators, operators working wholly within the EZ, and any other operators with long vehicle replacement cycles).
- Policymakers need to decide whether to put in place manual or automated enforcement systems in the EZ. In general a manual enforcement scheme may be simpler to introduce and have lower running costs, but it may have a lower compliance rate than an automatic system. In addition, a manual system can put additional work burdens on the Police Force if they are expected to enforce it.
- A system of charges and fines needs to be decided on for vehicles that enter the EZ and do not meet the required standards. In addition, a method by which to process and collect these fines needs to be decided on.
- Policy makers are likely to need to conduct research and feasibility studies to determine the most suitable type of EZ to introduce. This will include consideration of the details of the scheme required in order to achieve the target emission reductions. In addition, cost-benefit analysis needs to be carried out to ensure that the benefits of the EZ outweigh the costs, taking into account costs that will be borne by vehicle operators and businesses inside the EZ.
- Joint working between national government, local authorities and vehicle operators and businesses located in the zone is likely to be necessary to ensure that the EZ achieves its objectives with the minimum cost and disruption to businesses. Consultation is likely to form an important part of the planning work for an EZ.
- Implementing several EZs in a single country or neighbouring countries at the same or similar times is likely to cause operators greater problems, as this reduces their flexibility to redeploy their older vehicles and hence also results in greater cost increases for them.

3 Accommodating the needs of passenger and freight transport in cities

3.1 Introduction

A workshop entitled “Accommodating the needs of passenger and freight transport in cities” took place in Vilnius, Lithuania on 27-28 September 2007. This subject had not been previously addressed in BESTUFS workshops or in the rest of the BESTUFS thematic network. A workshop on this topic was organised as there is a need for urban policymakers to consider how best to jointly meet the needs of both passenger and freight transport in towns and cities across Europe.

Nine presentations were made during the workshop. These included truck routes in Bremen, no-car lanes in Tyneside, priority concepts for freight in Milano and other Italian cities, the role of rail in the urban supply chain, home delivery in Espoo, Finland, the Toulouse Urban Distribution Centre and the role of intermodal logistics centres. In addition, a technical visit was made to the ADREM (rail-connected) freight terminal and storage facility in Vilnius. The workshop was attended by 30 participants from all over Europe.

3.2 Policy makers approaches to joint passenger and freight transport planning

To date, policy makers in European towns and cities have typically targeted their transport strategies and investment at passenger transport rather than freight transport. Freight transport has generally been left by policy makers to the private sector which supplies and demands freight transport services. Policy makers have tended to only provide infrastructure and regulations for freight transport. Most of these regulations concerning freight transport are focused on goods vehicles access (often based on vehicle lengths, areas, weights, and time-based) and the location and times at which loading/unloading by goods vehicles can take place. Many of these freight regulations have been in place for long periods of time and have not been subject to review to ensure that there is a good technical rationale behind such decisions. Therefore, from the perspective of operators and users of road freight transport services, urban authorities have tended to demonstrate little innovation and interest in the field of freight transport in comparison with passenger transport.

However, policy makers are now beginning to shift their views about urban freight transport for several reasons:

- Its importance in supporting the urban economy and helping it to grow and be economically competitive,
- The role it plays in ensuring that those living and working in cities obtain the goods and services they require on time, at the right quality, and at the desired price,
- The negative social and environmental impacts that freight transport places on the urban environment, and the health of those living and working there.

Commercial vehicles providing goods and services in urban areas typically account for 10-20% of vehicle kilometres performed by motor vehicles, and up to 25% of road space use (in terms of space occupied and time spent there) and fuel consumption.

Policy makers now have to address a range of problems that freight transport contributes to in urban areas. These include: traffic-related emissions of air pollutants (especially PM10 and NO_x), climate change, fossil fuel consumption (approximately half of all road transport fuel is consumed in urban areas, with the overwhelming majority accounted for by oil), transport noise (with urban traffic noise levels often exceeding guidelines set by the World Health Organization), and road safety.

Urban transport activity (including freight) is dominated by road transport. It is necessary for policy makers to address the demand for urban transport through a joint effort at the local, national and European levels of government. Integrated and holistic solutions are needed in order to address these negative social and environmental impacts of transport demand. The European Commission, the Council and the European Parliament encourage urban authorities to cooperate in order to establish and implement sustainable urban transport plans to prevent and reduce environment and health problems in European urban areas. Many urban authorities are contributing to meeting European Community objectives on sustainable transport and environment by putting in place transport plans to ensure that they comply with EU air and noise legislation.

Urban authorities are beginning to develop Sustainable Urban Transport Plans (SUTP). These are intended to put in place effective, transport planning through a “long-term vision to plan financial requirements for infrastructure and vehicles, to design incentive schemes to promote high quality public transport, safe cycling and walking and to coordinate with land-use planning at the appropriate administrative levels. Transport planning should take account of safety and security, access to goods and services, air pollution, noise, greenhouse gas emissions and energy consumption, land use, cover passenger and freight transportation and all modes of transport. Solutions need to be tailor-made, based on wide consultation of the public and other stakeholders, and targets must reflect the local situation” (European Commission, 2006, Thematic Strategy on the urban environment).

Sustainable Urban Transport Plans (SUTP)

“SUTP comprise a combination of urban mobility management measures and should cover all modes and forms of transport in a relevant geographical area. It addresses, vehicle movements and parking, public and private transport, passenger and freight movements and motorised and non-motorised modes.

The basic characteristics of the SUTP planning approach can be summarized as:

- A participatory approach involving the public from the outset and throughout the process of decision making, implementation, assessments and reporting;
- A knowledge based approach building on available best practices and results of research as well as robust staff capacities;
- An integrated approach which strives to integrate horizontal (i.e. with other relevant policies, strategies and plans), vertical (i.e. with relevant levels of governance) and spatial (i.e. considering relevant geographical area) aspects;
- A method of political and technical cooperation which strives to involve relevant actors whose skills and decisions may be essential for drawing up and implementing the SUTP;
- A measurable approach focusing on the achievement of quantifiable and tailor made targets derived from operational objectives and aligned with a vision for sustainable urban transport in accordance with an overall sustainable development strategy;
- A move towards external costs internalisation taking into account the wider societal costs and benefits.

Source: European Commission, 2007, Sustainable Urban Transport Plans, Technical Report - 2007/018.

SUTPs objectives and targets should be coherent with the objectives and targets set by the EU renewed Sustainable Development Strategy on 'Sustainable transport' shown in the table below.

Objectives and targets for sustainable transport according to the EU renewed Sustainable Development Strategy (2006)

Overall Objective: To ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment

Operational objectives and targets (relevant excerpts)

- Decoupling economic growth and the demand for transport with the aim of reducing environmental impacts.
- Achieving sustainable levels of transport energy use and reducing transport greenhouse gas emissions.
- Reducing pollutant emissions from transport to levels that minimise effects on human health and/or the environment.
- Achieving a balanced shift towards environment friendly transport modes to bring about a sustainable transport and mobility system.
- Reducing transport noise both at source and through mitigation measures to ensure overall exposure levels minimise impacts on health.
- Halving road transport deaths by 2010 compared to 2000.

Source: European Council, 2006, Renewed EU Sustainable Development Strategy, 10117/06.

SUTPs are likely to need to adopt a mix of transport policy measures that suit the particular urban area in question (depending on the type of urban area and the problems it faces). Existing evidence suggests that in most urban areas there is a need "for a set of consistent push and pull measures from the ten following categories (European Commission, 2007):

- Coordinating land use and transport planning
- Promoting and improving collective transport
- Encouraging cycling and walking
- Urban freight management
- Parking management
- Urban road pricing
- Traffic calming and reallocation of road space to most environmentally friendly vehicles and modes of transport
- Restricting access for the most polluting road vehicles (low emission zones)
- Fostering the use of cleaner, quieter and lower CO2 road vehicles
- Soft and smart measures (car-sharing, business and school travel plans, mobility management centres, awareness raising campaigns)

In selecting a suitable mix of measures environment and health impact assessments, cost-benefit and cost-effectiveness analyses and public consultation exercises will be required.

In addition to the SUTP considerations, urban authorities should also consider the actions they could potentially take in order to improve the efficiency of urban freight transport operations and thereby ensure that their urban area remains economically strong and competitive, and provides urban

inhabitants with the goods and services they require at the price and time that they need them. This can involve changing the existing allocation of transport capacity (both in terms of space and time) between goods vehicles and other road users. Examples of such an approach can include:

- allowing goods vehicles to use bus lanes
- easing access time restrictions on goods vehicles to permit deliveries and collections during off-peak periods (including night time)
- setting aside more dedicated road space (i.e. delivery bays) for loading and unloading by goods vehicles
- establishing preferred routes for heavy goods vehicles in urban areas.

3.3 Recommendations on accommodating the needs of passenger and freight transport

Policy makers considering how best to accommodate the needs of passenger and freight transport in urban areas should take account of the following BESTUFS recommendations.

- Policy makers with responsibility for urban freight transport should review their existing data collection work to determine if this provides them with adequate insight into the role and pattern of freight transport, the issues it faces and the impacts it imposes. Data collected in existing and new survey efforts should be used to enhance understanding of the importance of freight transport and to assist in determining policy priorities in urban areas.
- Policy makers at all tiers of government need to ensure that freight transport planning is incorporated more fully into urban planning considerations. Sharing of information between policy makers about the outcomes of urban freight policy and planning initiatives should be encouraged at an EU and national level to ensure that there is scope to learn from work already taking place.
- In order to make best use of existing knowledge and resources, every greater co-operation needs to take place among policy makers concerned with urban freight transport issues. This will help to avoid pitfalls and mistakes and will help to ensure that compatible strategies are developed for dealing with similar problems and issues.
- Urban authorities should review the access and loading/unloading restrictions that are currently in place for freight transport to determine whether the existing restrictions are logical and necessary.
- Urban authorities should consider how to use combined land use and transport planning in order to reduce the need for both passenger and freight transport.
- In the case of a town or city in which more than one local authority is responsible for transport planning, those authorities should work in close co-operation with each other to ensure that each of their urban freight policies and regulations concerning freight transport are compatible and coordinated.
- Urban authorities should review the provision of infrastructure and road space allocation for freight transport (in terms of factors such as on-street loading and unloading space, delivery bays, lorry parks, turning circles etc.) to ensure that provision is adequate.
- Urban authorities should ensure that their land use and building regulations take account of off-street delivery and servicing delivery bays requirements.
- At a national and EU level, governmental bodies should put in place guidance and standards concerning suitable access and loading restrictions and infrastructure provision for freight transport in urban areas that can be referred to by urban authorities.

- Urban, regional, national and EU level governments should consider ways in which urban freight transport can be made more efficient through new access, loading and mobility arrangements. This could include, for example, consideration of the use of bus lanes by goods vehicles, easing restrictions on night time deliveries at businesses, providing more dedicated road space for loading and unloading activities, implementing preferred routes for heavy goods vehicles, and the use of Urban Consolidation Centres.
- Urban, regional, national and EU level governments should consider ways in which special access permission or exemption from charges or costs can be granted to goods vehicles and operators that meet certain operating standards related to pollutant emissions, fuel consumption standards, and safety and management criteria.
- Urban authorities should examine whether Environmental Zones would assist in meeting air quality targets. Consideration should also be given to whether goods vehicles that meet the required emissions standards can be granted any operating advantages in order to make such schemes more attractive.
- Urban authorities should investigate the scope for modal shift (from road to less polluting modes) for urban freight, and preserve existing intermodal land and facilities in their towns and cities.
- Further research should be carried out into which home delivery solutions are likely to provide the reductions in total transport activity (i.e. freight and passenger transport). Solutions to investigate include locker banks, collection points and unattended home delivery system. Urban authorities should then find methods by which to promote and encourage the adoption of these solutions.
- Urban policy makers with responsibility for freight transport should ensure that the goods vehicles operated by and on behalf of their own organisations provide a good example to other operators in terms of issues including load factors, fuel consumption, pollutant emissions, vehicle utilisation, driver training, routing and scheduling.
- Successful joint working between the public and private sector is likely to be an important determinant of the success of freight initiatives in European urban areas. Policy makers with responsibility for urban freight transport should seek to establish good working relationships with companies involved in freight transport and logistics located and working in their areas. This is likely to require the formation of joint public and private sector working groups.
- Close working relationships between the public and private sectors can take a lot of time to build. Policy makers need to be clear about the issues they want to engage the private sector in consultation and joint working on, and to decide how best to use the time and efforts of the private sector in these initiatives. Focusing on the key issues and outcomes will help to engage and retain the private sector's involvement in such initiatives. Given the wide range of stakeholders involved in freight transport considerations in urban areas (including retailers, wholesaler, carriers, warehousing, residents, shoppers and workers) it will undoubtedly prove difficult to both engage and please everyone. However, the focus should be placed on ensuring that the delivery and collection of goods in urban areas takes place in an efficient manner, while imposing as few social and environmental impacts as possible. In this way urban freight transport operations can be made more sustainable in economic as well as social and environmental terms.

4 BESTUFS project recommendations

4.1 Introduction

Around 80% of European citizens live in an urban environment. They share in their daily life the same space, and for their mobility the same infrastructure. Their mobility accounts for 40% of all CO₂ emissions of road transport and up to 70% of other pollutants from transport (European Commission, Background paper for the Technical Workshop for the Green Paper on urban transport, January 2007).

Urban freight transport and logistics involves the delivery and collection of goods and provision of services in towns and cities centres. It also includes activities such as handling and storage of goods, the management of inventory, waste handling and removal and home delivery services.

Due to their large populations and extensive commercial establishments, urban areas require large quantities of goods and services for commercial and domestic use. The growing importance of urban freight transport is related to increases in urban populations and continued economic growth in urban areas. This results in increasing levels of demand for freight transport services.

This tension between demand for transport and space limitations in urban areas has resulted in major problems in providing urban freight transport services. This can reduce the efficiency of urban freight transport operations and also impact on the well-being of urban dwellers and workers. Freight transport is a major contributor to environmental impacts, particularly to local air emissions and noise and, as a result, has an important impact on the health of the most vulnerable residents of urban areas. Moving towards sustainability – a better socially and environmentally performing but still affordable freight transport system - would require the development of a modern and innovative freight sector. This would mean quite a major change to the urban freight paradigm, which can still be characterized, in many European towns and cities, as “low cost, low standards”.

4.2 Policy-making for urban freight

It would be expected that, because of its importance to the urban economy and urban lifestyles, that the topic of urban freight transport would have received much attention from local, regional, and national governments as well as at an EU-level. However, despite its importance relatively little attention has been paid to urban freight by researchers and policy makers until relatively recently.

Most policy making decisions concerning urban freight transport in European towns and cities has been taken by urban or regional authorities over the last few decades. Some of these authorities have been relatively active in terms of freight policy making but, until recently, did relatively little in terms of developing strategies and taking policy action. Instead, most of the transport efforts of urban and regional authorities have been focussed on passenger transport rather than freight. Where freight-related action has been taken by urban and regional authorities, most of it has been concerned with limiting the negative impacts of urban freight operations, rather than considering the economic and social importance of these activities and identifying methods by which to improve its efficiency.

Despite the importance of urban freight transport in supporting businesses through the provision of goods and services, and the role it plays in providing for the needs of urban inhabitants and workers, the topic has tended not to be addressed by governments at a national or EU-level.

There are few examples of efforts to develop urban freight strategy and transport policies at a national level in European countries. National governments have mainly had an indirect impact on urban freight transport through actions including transport infrastructure expenditure, guidance concerning transport and land use policies, promotion of environmentally-friendly transport modes, and support for research activities.

Similarly, the EU White Paper on Transport published in 2001 made little reference to urban freight transport. The document noted the rapid increase in traffic in urban areas, and the impact this is having on urban congestion together with worsening air and noise pollution and accident rates. This

document went on to note that although “the subsidiarity principle dictates that responsibility for urban transport lies mainly with the national and local authorities, the ills besetting transport in urban areas and spoiling the quality of life cannot be ignored”. The private car was singled out as particularly problematic in this rise in congestion, and the concepts of promoting clean vehicles and developing good quality public transport services were discussed. No specific reference was made in the 2001 White Paper to urban freight transport.

EU policies, such as environment, internal market and public procurement, regional policy or research have developed actions relevant to and which impinge on urban transport on the basis of their objectives. But this has resulted in the situation that there is no coherent urban transport policy at the European level. This is something that the EC now feels needs to be corrected, fully respecting the subsidiarity principle.

As part of the mid-term review of the Transport White Paper, the European Commission announced that it will produce a Green Paper on Urban Transport during the latter part of 2007. Matthias Ruete (Director General of DG TREN in the European Commission) has stated that, “the EU can add value to actions at local level. In partnership with you (the cities), we want to identify barriers to successful Urban Transport Policies and, for specific actions, propose joint solutions” (European Commission, Stakeholder Conference for the Preparation of a Green Paper on Urban Transport, January 2007). The Green Paper and its follow-up activities will form the basis for a European Policy on Urban Transport as part of the European transport policy. As well as covering private cars, walking and cycling in urban areas, the Green Paper will also cover urban freight transport and logistics. It will address issues including: better understanding the impact of technological and demographic changes on urban transport, how best to ensure attractive and effective future public transport systems, consideration of the need for a general framework and support measures to facilitate the introduction of traffic demand management systems in sensitive inner-urban locations, the integration of urban and inter-urban transport systems, and how to implement integrated policy approaches and remove barriers towards implementation.

A technical workshop (on integrated urban transport approaches for successful and attractive cities) held in May 2007 to help develop the Green Paper resulted in the following thoughts about its potential coverage of urban freight transport (European Commission, Stakeholder Conference for the Preparation of a Green Paper on Urban Transport, June 2007):

- Freight should be part of the urban agenda
- Urban freight: environmentally friendly, safe and efficient
- Commerce needs accessibility for goods and passengers
- Build long-lasting synergies with all stakeholders
- Support new technologies in a pragmatic way

Internet consultation carried out as part of these activities to develop the Green Paper showed that “only one of five respondents indicates that local authorities do enough to improve urban freight, logistics and deliveries” (European Commission, Stakeholder Conference for the Preparation of a Green Paper on Urban Transport, June 2007).

The annotated agenda for the Logistics Action Plan Conference held by the Commission in May 2007 noted that, “A holistic vision at the local level would be needed to consider all urban logistics together as a single logistics network that covers passenger and freight transport, and that pays attention to the aspects of land use planning, environmental considerations, traffic management and a number of other factors. The Commission services could function as a catalyst to change by bringing urban areas together towards a general framework consisting of a set of recommendations, indicators or standards for urban logistics, including freight deliveries and delivery vehicles, which could be adapted locally for different circumstances” (European Commission, Annotated Agenda for the Logistics Action Plan Discussions, May 2007).

However, there are concerns that urban freight has received insufficient attention in the Green Paper. This view was expressed by several participants during a panel debate at the conference “Towards a new culture for urban mobility” on 31 January 2008 (chaired by Ms. Mary Crass from the International Transport Forum).

An exception to the lack of European level consideration of urban freight is the voluntary standard produced by the European Committee for Standardisation (CEN) in 2005 entitled “Transport service – City logistics - Guideline for the definition of limited access to city centres” (EN14892:2005). This standard describes possible restrictions for goods vehicle access to city centres and shopping areas and provides guidance in terms of access restrictions based on: vehicle weight and dimensions, time, vehicle construction, vehicle performance and payment systems. It also advises that information about urban access restrictions for goods vehicles should be made publicly available through the internet, national media and the International Road Transport Union (IRU). However, the guidelines provided by the standard are rather brief.

This section aims to provide recommendations from the BESTUFS project as to how urban freight transport can be improved and enhanced by local, regional, and national governments as well as at an EU-level.

Freight transport in cities responds very effectively to the requirements of modern urban economies. However, it is a major contributor to environmental impacts, particularly to local air emissions and noise and, as a result, has an important impact on the health of the most vulnerable residents of cities. Urban freight activities, therefore, reflect a global approach to sustainability. They involve economic, social as well as environmental issues simultaneously, and can result in conflicts. Under the current conditions of the urban freight industry, the economic viability of cities might actually be benefiting from socially and environmentally damaging transport operations. Moving towards sustainability – a better socially and environmentally performing but still affordable transport system - would require the development of a modern and innovative sector. This would mean quite a major change to the urban freight paradigm, which can still be characterized, in many European cities, as “low cost, low standards”.

4.3 Recommendations

Achieving free-flowing towns and cities

Congestion is severely affecting the quality of urban freight transport operations for both goods and service movements. It is increasing the transport related costs of the urban economy. Measures taken against congestion are well appreciated by commercial actors as far as their own access is not more hindered by these measures compared to the advantage received.

BESTUFS recommends that any measures controlling access and tackling congestion should therefore be thoroughly analysed beforehand regarding their implications for urban freight transport.

Commercial transport operations are certainly also contributing to congestion, and attention can be given to freight transport-oriented measures which have also a positive impact on the general urban transport flows. Measures to enhance urban freight transport efficiency are one major area to achieve improvements. This includes tools to improve the trip and route planning and measures to increase the load factors or to support consolidation or city logistics solutions. The other important area is the shift of freight transport to non-peak hours. This can be addressed for example by supporting night deliveries, by introducing daytime dependent urban pricing schemes or by offering forecasted traffic information to be used by trip planning tools.

BESTUFS recommends that further efforts are made by policy makers and operators to pilot, promote and adopt measures that help to improve the efficiency of urban freight transport operations.

Air pollution, CO₂ emissions and noise

Vehicle technology is improving rapidly. However, one of the main issues is the poor state of some of the current goods vehicle fleets in urban areas, mostly operated by small operators, often acting as subcontractors to large freight transport companies. It is therefore important that urban authorities encourage modernisation of these vehicles. Some cities have implemented regulations favouring low-emission goods vehicles (in Environmental Zones or elsewhere).

BESTUFS recommends that initiatives to favour a switch to less polluting goods vehicles (including Environmental Zones) should be promoted and encouraged. Urban authorities should be encouraged to provide subsidies to small operators converting to cleaner goods vehicles.

Regarding CO₂ emissions, hybrid vehicles look promising because of the “stop and go” character of urban deliveries (energy consumption by a vehicle is exponentially increased during stop and go operations). Alternative fuels can be introduced more easily with large initial user groups and here common approaches of commercial fleets, public vehicles and buses sharing the same fuelling stations can be considered.

BESTUFS recommends that policy makers consider the role that could be played by hybrid vehicles in urban freight operations in order to reduce CO₂ emissions, and in shared fuelling stations for alternative fuels and methods by which to encourage and promote these outcomes.

The next step to achieve with respect to clean and efficient goods vehicles is the efficient operation of these vehicles in fulfilling transport tasks. As discussed above, urban freight transport efficiency is a key area in which to achieve environmental and energy consumption improvements. Tools to improve the trip and route planning and measures to increase the load factors or to support consolidation or city logistics solutions have already been mentioned. Although most cities use Euro engine standards when regulating truck access to Environmental Zones, other local truck ordinances can vary considerably from one urban area to another (vehicle length, width, area, weight, age, time, etc.). There is not always an obvious technical rationale behind such local decisions. Access restrictions based on vehicle length, area or weight and also time-based vehicle restrictions can have very negative effects on the efficiency of the overall urban freight transport task. Although these types of access restrictions can be necessary, it is important that policy-makers consider all the options and their potential outcomes before imposing such restrictions.

BESTUFS recommends that urban authorities review their existing access restrictions for goods vehicles based on vehicle length, area, weight and time to ensure that there is a good technical rationale behind such decisions.

BESTUFS recommends that guidance and proposed harmonised rules for goods vehicle access in urban areas could be produced at a European level.

BESTUFS recommends that the EU should encourage benchmarking of technological solutions for Environmental Zone and road user/congestion charging registration, administration and enforcement systems, especially regarding commercial fleets (which have specific needs such as fleet registration schemes and automatic billing systems).

Noise reductions in urban delivery operations could lead to a very substantial benefit for cities because, contrary to people’s mobility, freight mobility can be transferred from peak hours to off-peak (including night) hours, leading to a potentially important reduction in day-time congestion. The allowance of out-of-hours operations also allows freight activities to be performed more efficiently in urban areas. Current good practice is being developed on this topic through various research efforts (including the Piek program in the Netherlands, and experimental schemes in London, Barcelona, Dublin etc.)

BESTUFS recommends that good practice in out-of-hours urban freight operations should be promoted at a higher – European – level in order to accelerate the development and adoption of such approaches elsewhere in Europe. Action should be taken at a European level in the standardisation of noise limits for urban delivery operations, addressing the loading/unloading activities as well as the different equipment types in use.

Smart urban freight operations

Relatively few goods vehicles circulating in urban areas are equipped with up to date technology such as GPS or delivery tour optimisation tools. ITS (Intelligent Transport Systems) products are generally not targeted towards urban freight operations. Although many urban operators are too small to benefit from sophisticated optimisation tools, they could benefit from receiving specific information about traffic conditions and regulations in the cities they operate in. Local rules (about access, parking, delivery windows), should be better integrated into mainstream on-board digital mapping systems or made available through variable message signs and internet web sites operated by municipalities.

Forecasted traffic information in the form of daytime related travel time patterns per network link can be used for trip planning. Commercial fleets will especially benefit from this information as pick-up and delivery round trips are often planned on the day before and could thus avoid expected congested situations.

BESTUFS recommends that standardisation of formats and interfaces at the European level is needed. Strong promotion of awareness among ITS developers and stakeholders (transport operators, shippers, local authorities) may bring additional benefits.

Training programs and expert staff in urban freight

Few European towns and cities currently have trained staff dedicated to freight transport issues. Training and hiring specialized staff could lead to a substantial increase in the effectiveness of local freight policies, improved working relationships between the public and private sectors, as well as best practice exchanges among European cities.

BESTUFS recommends that consideration is given as to how to increase the proportion of knowledgeable and highly qualified staff with specialist expertise in urban freight transport. Potential approaches to achieving this include training programmes and secondments between urban authorities.

Land use and freight flows

Freight infrastructure planning is generally inadequate in many European metropolitan areas. The location of freight terminals and large infrastructures (including intermodal facilities) is often regulated at a local level (municipalities), whereas metropolitan and regional governments do not have jurisdiction over land use decisions and building permits.

BESTUFS recommends that the EU encourage the creation of integrated logistics planning authorities with full jurisdiction over land uses and warehouse and logistics facilities building permits at a metropolitan or regional level.

It has been demonstrated by the French Mobility Plans that even when good strategic freight planning takes place, it is poorly enforced if only local (municipal) governments have legal jurisdiction to apply measures (such as planning permission or traffic ordinances). Municipal decisions over building permits for large warehouses and freight facilities can lead to the development of “logistics sprawl” and logistic facilities with poor accessibility. These zones can generate important vehicle-kilometres (for both trucks and cars) within the area.

The French policy, to force medium and large size cities to provide an urban transport plan (PDU) in which freight transport must be an integral part, led to a very positive stimulation of innovation and a much more active reflection on commercial transport in French cities.

BESTUFS recommends that the intention of the EC to initiate and to support the introduction of SUTPs would be the right opportunity to strengthen the urban freight dimension within urban

transport planning. Commercial transport must become an integral part side by side to passenger transport within the SUTP approach.

Data collection on urban freight activity

Urban areas should be encouraged to finance regular freight surveys, as most already do for personal travel surveys. There are major gaps in urban mobility statistics at the EU level, but also at the local level where freight flows are concerned. The work in BESTUFS has clearly showed that regular freight surveys are rare, and often very difficult to compare because of the different methodologies used. In addition, monitoring of the effects of urban freight transport measures is also usually inadequate and results in difficulties in making comparisons.

Capturing the same basic survey data for cities at a national level (and perhaps at an EU level) provides many benefits since a common database of urban goods data then becomes available and issues of comparability can be addressed much more readily. Guidelines for this type of ‘bottom up’ approach would be valuable.

While full survey harmonisation for urban freight surveys is beyond the scope of activity for the Commission there is still a major benefit to be gained from a more common approach in terms of: (a) methodology and (b) terminology. This could extend the work already completed as part of BESTUFS.

BESTUFS has demonstrated the benefits of detailed exchanges between universities, administrations, experts of the different Member-States and at an EU level on urban freight data collection and modelling.

Further research effort should contribute to the comparison of city-wide urban logistics activities and structures. The establishment of suitable performance measures and benchmarking would help cities to determine the most relevant fields of action and would deepen the understanding and monitoring of urban freight related measures.

There is a need for greater awareness and training for policy-makers to understand freight data issues and freight modelling and on the other hand for developers of models to better understand the needs of policy-makers. The EU could consider ways to encourage this awareness raising and training need.

It is important to recognise the role played in urban goods movement and services by vehicles below 3.5 tonnes GVW – this needs to be reflected in survey approaches and data capture and in the developments of models.

Data and modelling approaches identified and categorised in BESTUFS can also be very valuable in improving the robustness of evaluations relating to pilot initiatives in urban goods movement. It is essential to have robust and transparent evaluations so that future decisions can be based on evidence.

BESTUFS recommends that guidance on efficient and comparable freight data collection and monitoring could help policy makers in towns and cities. Data collection pilots in cities in different countries could provide interesting comparisons.

BESTUFS recommends that there is a need for further research activities at a European level into urban freight data collection, evaluation and modelling methods and results.

Urban Consolidation Centres

It has been shown that Urban Consolidation Centres (UCCs, also referred to as “City-Logistics schemes”) can lead to a decrease in the number of vehicle-kilometres, emissions and other negative social and environmental impacts generated by urban deliveries. These schemes generally have high set-up costs attached to them. Issues about how the costs and benefits of these schemes are shared between supply chain parties tend to prevent greater uptake.

BESTUFS recommends that the EU should encourage increased awareness especially among policy makers and small urban freight and logistics operators regarding the potential benefits of UCCs.

BESTUFS recommends that the EU should encourage the development of local public-private partnerships:

- *to establish local charters on urban deliveries*
- *to promote the development of private or public/private UCC schemes, including schemes targeted on specific locations (pedestrian streets, urban commercial centres, large building sites). These solutions could benefit from optimisation tools and ITS.*

When an Urban Consolidation Centre (UCC) is set up it takes time to establish the scheme and sign up users. The gradual build up of goods throughput affects the financial viability and the traffic and environmental impacts of the UCC. BESTUFS recommends that policy makers ensure that UCC trials have sufficient support and funding to run for a suitable period of time over which to measure and analyse the results.

BESTUFS recommends that public funding needs to be made available to pay for the research work and pilot studies for any form of UCC that is not related to a major new property / commercial development. Without this funding such UCC research and trials are unlikely to proceed.

Publicly-organised UCCs do not have a good track record in terms of implementation and operation. For UCCs to be attractive to companies and to be successful set-up BESTUFS recommends that they should be led and operated by one or several key commercial players that have identified the potential benefits of being involved.

Last mile solutions

Home shopping and home delivery continues to increase in European towns and cities, especially as a result of the growth in online shopping. Last mile delivery solutions are of great relevance for the competitiveness of the European retail industry. Cost reductions across the supply chain as well as providing a better service quality are key driving forces. However, even more importantly, there is a large potential for more as yet unexploited solutions representing a further driving force for developing innovative last mile solutions.

BESTUFS recommends the need to set up and support further initiatives on developing last mile solutions. Besides focussing on technological developments, there is a strong need for further innovative and operational logistical approaches.

Home delivery can potentially result in reductions in vehicles kilometres and its related impacts (i.e. multi-drop freight deliveries to homes can result in fewer vehicle kilometres than when many customers travel to and from shops). However this is dependent on parameters and variables including: the number of deliveries stops per tour, the distance between stops, distance between depot and first/last customer, the vehicle/propulsion used, the type of product delivered, the technical planning support, and the customer behaviour and preferences (especially whether the customer performs other trips as a result of time savings).

BESTUFS recommends that policy makers in towns and cities should monitor the developments of last mile solutions closely by taking into account the above mentioned parameters. Policy makers should play a more active role in the development and design of last mile solutions contributing to measures that can result in sustainable and innovative solutions (including locker banks and collection point systems)..

The main goal for the urban authority as well as for the operator is to achieve a high degree of consolidation of consignments and to minimise the time taken and distance travelled in making last

mile deliveries. Using trip planning software can help to optimise last mile delivery rounds taking into account any delivery time windows agreed with customers.

BESTUFS recommends that further innovations in the telematics field with specific reference to last mile solutions in urban areas are needed and should be supported by further research and funding activities. In addition, further efforts should be made to determine how IT and communication systems could be used to provide the customer with more information about the status of their delivery, and thereby reduce the risk of failed deliveries that occur when the customer is not at home to receive their goods.

On a European scale expertise concerning the effects of telematic applications on urban freight transport operations is still relatively limited. Some cities have implemented public private partnerships, some have started demonstration projects, however solid experiences on a European scale are still rare. Also the full potential of telematics applications in cities through the integration of traffic management systems with urban freight transport systems is presently little researched or used.

BESTUFS considers telematic applications as one of the major instrument for improving last mile processes and hence recommends that it is addressed by further research work in urban areas.

Freight in small and medium-sized urban areas

Much focus of economic growth, development and research work has taken place in relation to large cities in recent decades. The trend towards globalisation has resulted in the importance of these urban areas becoming ever-greater.

Meanwhile, over recent decades, the economic importance of many small and medium-sized urban areas has diminished, especially as the manufacturing and agricultural base and employment levels of many (especially western) European countries have declined as a result of international competition. This has resulted in some small and medium sized cities losing some of their economic roles and vitality over time, and the areas becoming subject to urban decline, and reductions in population.

However, as well as facing such economic difficulties, small and medium-sized urban areas also offer opportunities and alternatives to larger cities. They can be viewed as offering a better quality of life and environment than larger cities. Therefore, while small and medium-sized urban areas may seem relatively unimportant at a European or national level they are still of great importance in regional and local economics and society, and offer important opportunities for future sustainable development. They typically have relatively compact layouts and shorter journey distances than larger cities, and have a rich and diverse cultural and architectural heritage. This offers potential for future growth in commerce, leisure and tourism. Small and medium-sized urban areas also have an important role to play as intermediate points between larger cities and rural areas.

There are several specific issues faced by small and medium sized towns and cities in relation to freight transport. These include that relatively little urban freight research and policy consideration tends to have taken place in these urban areas; typically little resource is available in these urban areas for specific freight actions (often meaning that there is no contact point within these authorities for logistics operators and other stakeholders); there is often relatively little co-operation between these urban areas, and between such urban areas and the larger regional or national institutions concerning freight transport, and there is usually relatively little logistics infrastructure in these urban areas in terms of distribution centres, rail freight terminals, ports and airports.

BESTUFS recommends that the EU support research into the following freight transport issues related to small and medium-sized urban areas:

- ***Investigation of freight issues and problems in small and medium-sized urban areas to determine whether these issues are different to those faced in larger cities, or if the problems are broadly similar but differ in terms of magnitude and importance,***
- ***Comparison of the nature and scale of freight transport problems in different small and medium-sized urban areas,***

- *Compilation of case studies of freight transport solutions implemented in different small and medium-sized urban areas.*

BESTUFS recommends that policy makers in small and medium-sized urban areas need to incorporate freight transport planning more fully into urban planning considerations alongside passenger transport planning. This has been a weakness in many large cities as well, but some larger cities are now making progress. BESTUFS recommends that there should be greater scope for small and medium-sized urban areas to learn from the changes and developments taking places with respect to freight transport planning in larger cities.

Port cities and innovative urban freight solutions

For urban areas that are linked to a coastal port, inland port or freight village both positive and negative impacts can be observed. On one hand the port is an important economic factor in the region and guarantees employment for the inhabitants of the urban area and often for the whole region. Furthermore, the goods supply of the urban area is often partly carried out directly via the port (e.g. via an urban distribution centre, leading to an excellent good supply).

On the other hand the port's activities result in a whole range of problems and negative impacts such as: noise disturbance and air pollution due to port operations and the hinterland transports (rail and road) which often travel through the suburbs of the urban area, increased road traffic levels due to port-related activity, and safety risks if dangerous goods are transported within the urban area.

BESTUFS recommends that aspects related to the hinterland transport to and from ports and terminals are broadly considered within integrative transport and land-use planning at national, regional and city levels of government in order to avoid bottlenecks and reduce negative impacts within the urban areas.

BESTUFS recommends the collection of detailed information about the transport flows related to ports and terminals and the need to make a realistic estimation of the future port developments in order to have a good basis for transport planning related to the ports.

BESTUFS recommends that as part of transport and land use planning, new industrial areas should be better linked to ports and terminals. Existing infrastructure should be used as efficiently and effectively as possible.

BESTUFS recommends the following as suitable accompanying measures in the efficient management of transport in the city: the implementation of guidance and preference networks for heavy goods vehicles, incentives for higher load factors, Environmental Zones and other encouragements for the use of environmental friendly equipment and vehicles, development of rail centres, urban distribution centres and new infrastructure.

Managing urban freight transport

Urban freight transport operations are responsible for a range of negative social and environmental impacts. These are relatively well understood and include fossil fuel consumption, greenhouse gas emissions, air pollution, noise, visual intrusion, physical intimidation (of pedestrians and cyclists), road safety and accidents, and road traffic congestion/disruption.

The problems experienced by those performing freight transport and logistics operations in urban areas are far less well understood. These include traffic flow/congestion issues, transport policy-related problems, parking and loading/unloading problems, and customer/receiver-related problems.

Inefficiencies in urban freight transport can occur as a result of existing road layouts or traffic levels. They can also come about due to non-freight urban transport policies of policy makers that have unintended consequences on freight transport operations (e.g. the introduction of bus lanes). Another cause of inefficiency in urban freight transport can result from variations in urban freight transport policy measures in different urban areas or different parts of a single urban area. Such inefficiencies

can have both financial and environmental impacts (as they can result in increases in goods vehicle trips, the total distance travelled, greater fuel consumption, lost time etc.) and are therefore best avoided from both the perspective of companies and the wider society. This suggests the need for collaboration between public policy makers with responsibility for freight transport regulations in urban areas as well as consideration of the benefits of harmonizing such regulations in order to avoid causing operational inefficiency.

BESTUFS recommends that consideration is given to how best the different tiers of government (urban, regional, national and EU) can work together to improve the efficiency and reduce the negative impacts of urban freight transport.

BESTUFS recommends that, in thinking about urban freight transport problems and possible solutions, public policy makers in all tiers of government should be aware of the importance of freight transport in the functioning of the urban economy and society. By doing this it is then possible to determine the importance of urban freight in relation to other transport needs in terms of funding priorities and initiatives. They should also review whether urban freight transport considerations are prioritised sufficiently highly at present.

BESTUFS recommends that public policy makers at all tiers of government need to ensure that freight transport planning is incorporated more fully into urban planning considerations. Sharing of information between policy makers about the outcomes of urban freight policy and planning initiatives should be encouraged at an EU and national level to ensure that there is scope to learn from work already taking place.

BESTUFS recommends that urban policy makers with responsibility for freight transport should ensure that the goods vehicles operated by and on behalf of their own organisations provide a good example to other operators in terms of issues including fuel consumption, pollutant emissions, vehicle utilisation, driver training, routing and scheduling.

Successful joint working between the public and private sector is likely to be an important determinant of the success of freight initiatives in European urban areas. BESTUFS recommends that policy makers with responsibility for urban freight transport should seek to establish good working relationships with companies involved in freight transport and logistics located and working in their areas. This is likely to require the formation of joint public and private sector working groups, some examples of which have been discussed in this document.

Best practice, harmonisation and research

Innovation in urban freight transport must be supported by public national or European funds as the pressure and financial abilities to initiate local projects are usually insufficient and as interesting questions and harmonisation topics need to take many city examples into account. Looking at the European policy objectives regarding energy, environment, economy and the important role of urban freight transport within these objectives there is a clear mandate for the EC to invest in the improvement of city logistics without getting into conflict with the subsidiarity principle. There are many underdeveloped fields where better knowledge or recommended harmonised approaches would be of direct value for many cities. The earlier sections of this document highlight many of these fields, e.g. the access regulations, the data capturing or the evaluation framework. Furthermore, It would be of value to directly support urban freight transport innovation in European cities and then to install a continuous best practice information platform for urban freight.

BESTUFS recommends the initiation of a European CIVITAS-FREIGHT R&D programme which focuses on urban freight transport innovation demonstration and which is similar in structure to the existing CIVITAS programme.

BESTUFS recommends the establishment of a European urban freight transport best practice platform, perhaps in combination with a European Observatory on Urban Mobility. Such a platform could inherit the available BESTUFS material and could be linked to further

Coordination Actions or research activities in this field. This platform should promote “harmonization” in all respects.

BESTUFS recommends practice-oriented research activities especially to increase knowledge on urban freight measures and their effects and to provide harmonization suggestions. These research activities could be related to CIVITAS-FREIGHT or to an urban freight transport best practice platform.