



CiViTAS

Cleaner and better transport in cities



05

POLICY ADVICE NOTES

Logistics and freight distribution



The CIVITAS Initiative is a European action that supports cities in the implementation of an integrated sustainable, clean and energy efficient transport policy. Lessons learned during the planning, implementation and operation phases of the activities are summarised in twelve Policy Advice Notes and give an idea on how to cope with urban transport problems which cities of the European Union have to face in the future.



Logistics and freight distribution

Environmentally friendly goods distribution in cities

Each city administration can implement measures to improve freight delivery in the centre or in specific locations (shopping malls, construction zones, etc.). Within CIVITAS II (2005–2009) several measures were implemented aimed at increasing the efficiency of vehicles, reducing traffic congestion and the reduction of environmental impacts due to freight delivery in cities. The most important information about the implementation of the measures and experiences made by the CIVITAS II cities is summarised in this Policy Advice Note in order to support and inform local politicians interested in these actions.

Overview

DESCRIPTION OF THE MEASURES

Although vehicle kilometres of trucks account for no more than 10% of road traffic in Europe, they can easily cause half of all nitrogen dioxide emissions, about 1/3 of particulate matter and more than 20% of green house gas emissions¹. Harbour and industrial cities especially are strongly affected by the freight and logistics sector. Also areas with intense construction works are seriously congested with heavy cargo traffic. Therefore, managing freight traffic should be part of an overall transport masterplan and ought to be included in the overall policy of each city. Optimising goods delivery can be achieved through several types of measures:

1. Initiating a strong partnership between all stakeholders and at least some of the operators, e.g. by creating a voluntary charter to agree on concerted and harmonised activities for goods delivery in the city. For example, a freight partnership could comprise food retailers working together on local deliveries and distribution with ITS communication to minimise the number of delivery trips to shops and customers by sharing loads and thereby maximising vehicle capacities.

¹ <http://www.tremove.org>





2. Creating logistics platforms, which integrate trade, commerce and industry, logistics, services, and freight companies, such as within urban distribution centres, offering logistic terminals, room for storage and / or loading bays
3. Creating legal frameworks and regulations to oblige carriers and operators to cooperate
4. Defining coherent regulations for access to urban areas for commercial vehicles delivering freight (e.g. only during fixed times or permitting access only to vehicles meeting specific emissions standards)
5. Raising public awareness as it can influence how merchants and retailers manage their freight delivery patterns. Merchants and retailers in turn can put pressure on the freight hauliers and distributors.
6. Creating freight maps and signage to show the most suitable freight routes to key areas in a city and highlighting obstacles as well as areas that should be avoided, such as low bridges, tight turns, narrow streets, residential areas, pedestrian areas, etc.
7. Managing the parking spaces for loading and unloading goods in an area
8. Introducing Intelligent Transport Systems (ITS) technologies and / or web-based logistics coordination systems enabling more efficient transport planning and an increased load factor

Furthermore, measures can be implemented to enhance safety and security and to protect citizens from accidents with well designed and well regulated transport systems (e.g. by introducing speed limits for heavy vehicles in different areas). The risk of incidents involving transport of dangerous goods and the negative consequences on the inhabitants and the environment should be minimised especially (e.g. by fixing routes for transport of dangerous goods). Also, the use of clean vehicles and alternative fuels for the transport of goods should be encouraged.

All possibilities require a long period of co-operation, coordination and negotiation. Therefore, the measures are mostly cost intensive.

TARGET GROUPS

Measures concerning freight delivery and logistics address the following target groups:

- Freight delivery services / carriers
- Shopkeepers and local businesses in the areas concerned
- New developments and construction zones

IMPACTS AND BENEFITS

For the public

- Reduction of the number of heavy transport vehicles in the city centre and therefore improved accessibility due to less congestion
- Less emissions, noise, and fewer accidents
- Less vibration caused by lorries that can damage old buildings
- Increased accessibility of shopping areas

For companies

- Cost savings due to more efficient transport trips (reduced mileage), better loading rates and the optimisation of the collection and delivery processes (e.g. in the case of freight distribution centres)
- Time savings due to less congested roads, a higher average vehicle speed and reliable operations for operators and end-users
- Less need for personnel, leading to the possibility of reduced prices for their services
- Increased productivity as drivers' rounds are better optimised



For consignees

(merchants, shopkeepers, companies, etc.)

- Security of goods is ensured at consolidation centres
- Improved reliability of deliveries means consignees can reduce stock levels and inventories
- Optimisation of deliveries leads to better use of labour resources
- Lower inconvenience for residents due to reduced noise caused by loading and unloading freight results in a better image
- More accessible shops, e.g. for pedestrians if measures are linked with access restrictions

For individuals

- Better living conditions due to less heavy vehicle traffic in residential areas

FRAMEWORK CONDITIONS FOR SUCCESS

The success of freight transport regulations and logistic measures will be enhanced if the following problems persist:

- Infrastructure is incapable of handling increased freight transport volumes (accelerating degradation of infrastructure originally designed for less intense freight traffic)
- Historic city centres which are suffering from high freight transport volumes
- Insufficient infrastructure for loading and unloading

- Need for temporary solutions where reconstruction or development of housing generates an increase of heavy traffic
- New projects in the retail sector (e.g. a large shopping centre) or in other economic sectors (e.g. industrial facility, major construction site, harbour or logistics sector), where a huge amount of incoming and outgoing goods is expected
- Business parks or industrial zones which are not connected to national or regional supply chains
- Numerous small- and medium-sized enterprises which have difficulties in providing integrated logistic solutions

Implementation steps and timeline

When implementing logistics and freight distribution measures, the following considerations need to be taken into account, as well as supportive measures and possibly regulatory measures. Planning and scheduling should allow for a reasonable timeline for implementation.

WORKING STEPS

1. Establishing the baseline

- Collecting information on the technical state of the art (e.g. concerning ITS, GPS or web-based applications)
- Collecting information on the (national) legal frameworks, e.g. environmental law, land use regulations etc. and possible methods of enforcement



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- Study of the current movements of goods, the number and average tonnage of commercial vehicles entering the target area, the number of deliveries per trip as well as freight consequences of growing e-commerce (increased number of direct small deliveries)
- Analysis of the needs and habits of businesses, shops and goods carriers, especially of small- and medium-sized enterprises (SME)
- Launching a study on the economic and social impacts of the proposed measure and the potential effects on the local economy

2. Designing the concept and the scheme

- Identifying all relevant decision-makers and stakeholders to be included in the discussions at an early stage
- Creating a steering committee to decide basic components of the scheme on a broader basis (including representatives of key stakeholder groups such as the harbour authorities, logistics centre, biggest transport companies, etc.)
- Selection of the target area, the location of the urban distribution centre, the layout and operations of a logistics centre as well as the legal basis of the centre (private or public private partnership, single company or multi-company platform)
- Concerning the regulations, selection of the routes/area, schedules, signage, agreement on the classification of the vehicles, etc.

3. Formal decisions

- Approval of the overall strategy for the management of freight transport by local politicians and administrations
- Political adoption of the new set of regulations on freight vehicles access to specific areas of the city

4. Implementing the new concepts and scheme

5. Training and information activities

- Publishing information about the new regulations and their intended impacts in order to achieve a higher degree of acceptance
- Personnel training for the operators and distributors to explain the new scheme and techniques
- Training of police or other staff to ensure an efficient enforcement of the new regulations

6. Evaluation and monitoring of the activities

- Continual programme of data collection and analysis to establish if impact targets are being met. If not, consider what improvements / revisions may be needed
- Survey among companies affected collecting information on user satisfaction and requests for adaption
- Surveys among the residents affected collecting information on the improvement of the living conditions
- Counting vehicles and measuring the average tonnage of heavy goods vehicles
- Initiating an ex-post analysis focusing on cost-benefit effects of the measure implemented





ACCOMPANYING MEASURES TO AMPLIFY POSITIVE EFFECTS

Several supportive measures can enhance the acceptance and effectiveness of the freight distribution and logistics measures, including:

- Additional services like storing goods, packing or unpacking goods or marking the price of goods can be offered by the distribution centre
- Furthermore, the centres can provide maintenance and repair services for vehicles
- The introduction or expansion of clean vehicles for the distribution of goods in defined zones
- Positive incentives can be offered to carriers involved in the distribution centres, e.g. better loading zones, access to bus lanes or extended delivery hours

TIMEFRAME

Studies on the technical state of the art as well as surveying the supply and delivery needs can take up to 12 months. Experience shows that designing the scheme for regulations, distribution centres, etc. takes approximately an additional 8 to 12 months and the implementation around a further 10 months.

What are the investments involved?

The sums indicated here are examples from measures implemented within CIVITAS II, but it has to be taken into account that the costs can vary considerably in different cities and countries.

- The development of a goods distribution concept in the historical centre of the CIVITAS II city Burgos cost about EUR 40,000 (including analysis of the current situation)
- In the CIVITAS II city Krakow EUR 42,000 were invested in the hard and software of the goods distribution system
- EUR 20,000 were spent for an intensive information and promotion campaign in Krakow
- In an economic assessment of a logistics centre for parts of the CIVITAS II city Toulouse EUR 100,000 annual costs were calculated for a loading bay of about 2,000 m² for an estimated 9,000 parcels per week
- Full service renting (including maintenance, license etc.) of a 6.5 tonne natural gas truck was estimated at EUR 1,755 (ex. VAT) per month (Toulouse)

Further cost elements need to be taken into account (depending on the size and the type of the measure implemented):

- Staff operation costs for the centre
- Costs for the procurement and installation of route signs and panels for alternative routes for heavy transport

Additionally costs for communications, logistics equipment, energy consumption, operational costs of vehicles and taxes have to be taken into account.



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Main drivers that serve as precursors to success

The following factors are the main drivers for the initiation as well as for an efficient and successful implementation of the measures described before:

- For the development of logistics schemes, it is crucial to involve all economic operators (goods providers, carriers, customers) to consider all deliveries. The operator of the centre has to be able to control all carriers involved. This can be linked to an incentive and disincentive scheme, e.g. by regulations in favour of clean vehicles or vehicles of a common logistics centre.
- Establishing an “Urban Freight Charter” to encourage shop-owners to allow their freight to be delivered by carriers that use clean vehicles and respect the freight delivery regulations
- A good communication strategy: Creating a positive atmosphere in the discussion between the carriers, shop-owners and authorities by organising workshops. Since the competition is high it is important to build trust.
- The regulations for the carriage of goods have to be sufficiently constraining and they have to be enforced strictly, otherwise they will not be respected (e.g. the regulation of the schedule, tonnage, environmental aspects, type of vehicles specified for the zones)
- Initial funding for establishing a distribution centre is needed. However, the goal is a self financing centre after two or three years. Public private partnership is recommended as a useful financial scheme.

- It is possible to start a distribution centre with just some (e.g. two) partners. If the service proves efficient and successful, other potential participants may also show interest in the concept.
- The carriers must be convinced of the business efficiency of the measures, which means that they can accomplish more efficient freight operations with lower costs and quicker deliveries
- Positive effects on the environment in the city as well as economic benefits for the carriers should be promoted, in order to raise the public awareness and to achieve a positive perception among residents, retailers and carriers
- Temporary schemes needed for managing deliveries to large construction sites

Strategies for a successful implementation

Experience within CIVITAS II has shown that several elements need to be in place in order to maximise the likelihood of successful implementation.

Experience shows that, in relation to the management of urban freight, it is important to create a long-term coordination with the different stakeholders, especially the shop owners and the local freight deliverers. Important changes, such as the founding of an integrated urban freight distribution centre are more difficult to implement, if there is not already a history of cooperation and trust. It might be advisable to start building such relationships with the de-



sign of simpler measures, for example, an environmental freight delivery charter. Several of the important elements crucial to the success of urban freight measures are discussed below.

Political support

A strong political commitment is required to successfully implement measures concerning the distribution of goods across all relevant parties. Contact and communications with key politicians are very important in order to achieve a high level of compliance of any regulations needed.

Acceptance

Organising negotiation and coordination meetings in order to define the regulations through a cooperative process is essential in order to assure acceptance among carriers. The carriers, especially, often oppose measures like this because they are afraid of losing direct contact with their customers. Funding of the initial investments may be used to overcome negative attitudes of the carriers towards the coordination measure. The cooperation with producers of goods as well as shop-owners will increase the demand for collective freight deliveries and encourage the carriers to cooperate. Information campaigns and education activities have to be implemented when introducing technical and IT-based concepts.

It is of utmost importance to inform the general public and customers about the present problems and the envisaged initiatives, solutions and expected costs and benefits. This will create a balanced view between the public and the carriers on the application of innovative and clean logistics tools, encouraging carriers to join a distribution centre. Appropriate campaigns and partnerships can be built around this topic.

Financial management

Particularly in the beginning, new logistics measures need to be funded by external sources e.g. by national environmental funds or by subsidies from the chamber of commerce. This will only be available if the long-run financial viability and legal feasibility is proven. A properly structured and detailed business plan is needed to demonstrate future viability. If the costs for a citywide logistics solution (investment, operation) are too high, it is advisable to start with simpler solutions at the first stage, which are easy to implement (e.g. with just a few users and simple technical tools). Support from public funding in the beginning of a measure's implementation reduces the economic risk of private stakeholders making them more open to cooperation. Once the scheme has been established, the logistics concept implemented should finally become self-financing after 2 to 3 years.

Legal framework condition

Measures can normally be implemented within the given legal framework conditions by using different legal premises such as ordinary traffic regulations concerning parking and loading/unloading as well as specific transport regulations such as weight limits on specific routes. However, in the case of fundamental changes like the use of environmental zones within a city, new traffic regulation orders may be needed which should be based on the limit values on air quality set by the European directives (Directive 1999/30/EC).

Institution & Organisation

The implementation of the measure often requires many administrative authorisations, involving different offices and institutions. The slowness of some bureaucratic practices sometimes makes it difficult to collaborate with private stakeholders. Therefore, communica-



tion and cooperation with all partners and authorities is essential. For all kinds of measures dealing with freight logistics, a strong stakeholder commitment is essential for a successful measure implementation.

KEY ELEMENTS TO BE CONSIDERED

- Freight transport in cities can be influenced by building a strong partnership between the involved stakeholders in this sector and / or by creating legal frameworks and regulations
- The measures are only successful if introduced in a specific distribution area with defined boundaries and if strict access restrictions are established
- Because of the high competitiveness in the sector it is necessary that the public authorities provide initial funding and assistance to potential participants of freight schemes. However financial planning should demonstrate financial viability within a reasonable timeframe.
- Organising negotiation and coordination meetings in order to define the regulations through a cooperative process is essential in order to assure acceptance among carriers and other stakeholders. A long period of coordination, cooperation and negotiating has to be scheduled therefore.
- As with all measures a proper impact and process evaluation should be planned from the beginning to monitor progress and inform policy

Who are the key people to be involved?

STAKEHOLDERS

To try to secure the success of the measures it is crucial to involve the different stakeholders, including:

- Consultations and workshops have to be organised to get carriers and hauliers involved in local governance – mainly on a voluntary basis. Since low acceptance of this stakeholder group constitutes the highest risk for the failure of the measure, their needs and expectations have to be carefully considered. It is advisable to integrate them in a steering committee together with the municipality and to implement mediation processes. In the case of harbour cities it is important to cooperate with the harbour management which administers distribution and storage capacity that might be used without any capital investments.
- Local business associations which bring together shopkeepers, traders, restaurant-owners and others should be integrated. Usually, they will not intervene in the choice of the supply chain if there are no effects on the prices charged.





- Local and regional politicians and administrations, environmental associations and visitors of the areas should be involved
- Private companies (e.g. small- and medium-sized enterprises of the food sector of the surrounding region) can be integrated in the development of logistics systems, since they can profit from new tools
- The residents should be considered as well as stakeholders. It is a good strategy to communicate an “image of innovation and responsibility” to the inhabitants to enhance their acceptance for the measure and build up public support. For example, a charter for deliveries and a badge for firms which belong to the initiative can be introduced. Furthermore, media and promotion material can be used to inform residents.

MAIN PROJECT PARTNERS

Several key partners are critical to the success and need to be involved in the implementation process of freight distribution and logistics:

Decision makers and operators

Often it is necessary to define what decisions are needed to be taken and where the power lies to push the measure implementation. Local administrations, such as the city councils or the transport or environmental departments, usually initiate measures dealing with freight logistics. It is possible that a city may organise the carriage of goods in the city centre by establishing an urban distribution centre. But for the actual management of such a centre, it is advisable to select a private transport operator (e.g. a distribution centre).

Important partners are the main freight distributors and local shop owners, often represented by the chamber of commerce. Their participation and adherence to the new measure will foster a successful implementation.

Financers

Experiences showed that the measures initially need funding by the local administrations. However, it should be the goal that these measures are self-financing after the initial phase.

Other participants

To undertake feasibility studies, collect local data and evaluate the results of the measures it is helpful if the measure leader gets support from universities or other research institutions.



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Enumeration of practical examples from CIVITAS II

Within CIVITAS II 6 cities implemented measures dealing with sustainable logistics and goods distribution:

Burgos (Spain): New goods distribution

La Rochelle (France): City logistics strategic extension; customers' services associated to goods distribution; development of partnership with logistics operators

Malmö (Sweden): Freight driver support

Norwich (United Kingdom): Customised traffic & travel information service for freight operators; goods delivery to P&R sites; and urban transshipment centre

Preston (United Kingdom): City logistics partnerships and strategic planning and freight routing, signing, etc.

Venice (Italy): Clean urban logistics



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The CIVITAS website contains information about CIVITAS-related **news and events**. It provides an overview of all **CIVITAS projects, CIVITAS cities** and maintains **contact details** of over 600 people working within CIVITAS.

In addition, you get in-depth knowledge of **more than 650 innovative showcases** from the CIVITAS demonstration cities.

Visit the CIVITAS website and search for **prime examples of experiences** in sustainable urban transport currently being undertaken in cities. If any of the ideas suit your city, or you are just interested in learning more, you may then contact the relevant person responsible for this measure.



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