niches

Innovative Approaches in City Logitics

Space Management for Urban Delivery

Policy notes

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SIXTH FRAMEWORK PROGRAMME

What is it about?

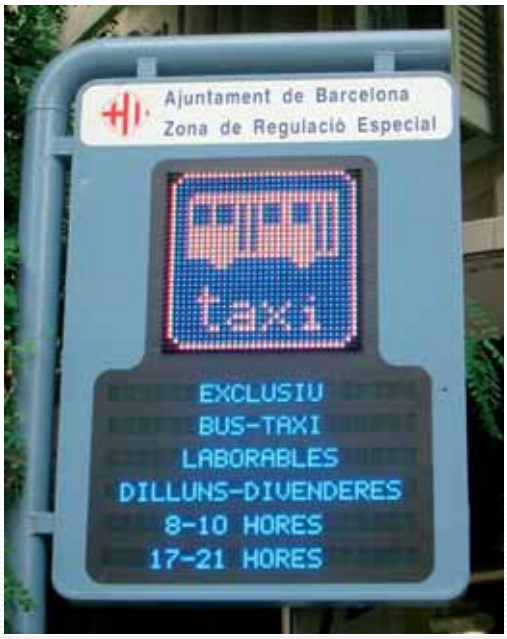
Characteristics

Space Management for Urban Delivery is an Innovative Concept that deals with the efficient usage of infrastructure in urban areas taking into account the specific needs of urban goods delivery.

The management of infrastructure usage in terms of time and space is a fundamental issue for city transport planners. Information and communication technologies, together with mechanical access gates or variable message signs, become less expensive and offer a variety of complex new access schemes tailored to individual infrastructures of delivery areas.

One space management solution can be the installation of one or more 'multi-use lanes' which can be used for different purposes over the course of the day (e.g. parking, loading and unloading, bus lane). Another possibility is the installation of certain areas/places which are dedicated to loading and unloading.

Several examples of space management solutions are given on page 8 to 10.



Variable message sign for the multi-use lane in Barcelona

Photo: Barcelona Municipalità

Key benefits

The implementation of Space Management for Urban Delivery Concept…

- can bring a reduction in travel time;
- reduces congestion and delays because of a better management of the available road space;
- can reduce energy consumption (more fluent traffic, reduced search for parking space for deliveries);
- causes a fairer sharing of valuable space/resources.

Example: Multi use lane, Barcelona (Spain)

In order to develop measures against the uncontrolled growth of private vehicles operating in the City of Barcelona – making goods deliveries more and more difficult – the municipality initiated a project.

Within Barcelona three lanes are used as 'multi-use lanes' installed with VMS technology (variable message signs) which clarifies who is allowed to use the street (residents, clear-way, deliveries) according to the time of the day.

The transport operators are allowed to use the lane for loading and unloading for maximum 30 minutes.
The measure is accepted by the users and can also raise the innovative image of the city.

> "The acceptance of urban space management may depend on the specific mentality of the users and residents and makes e.g. intensive enforcement more or less necessary."
>
> *Julio García Ramón, Mobility Services, Barcelona Municipality*

Urban delivery in Lyon
Photo: PTV Planung Transport Verkehr AG

Is this something for us?

Space Management for Urban Delivery concepts include a wide range of solutions from very simple approaches to complex systems.

Key conditions for implementation are:

- A **key stakeholder** (a city administration) with strong interest in implementation;
- Availability of **infrastructure** resources;
- That the **legal basis** for the implementation exists or can be adopted.

Check list

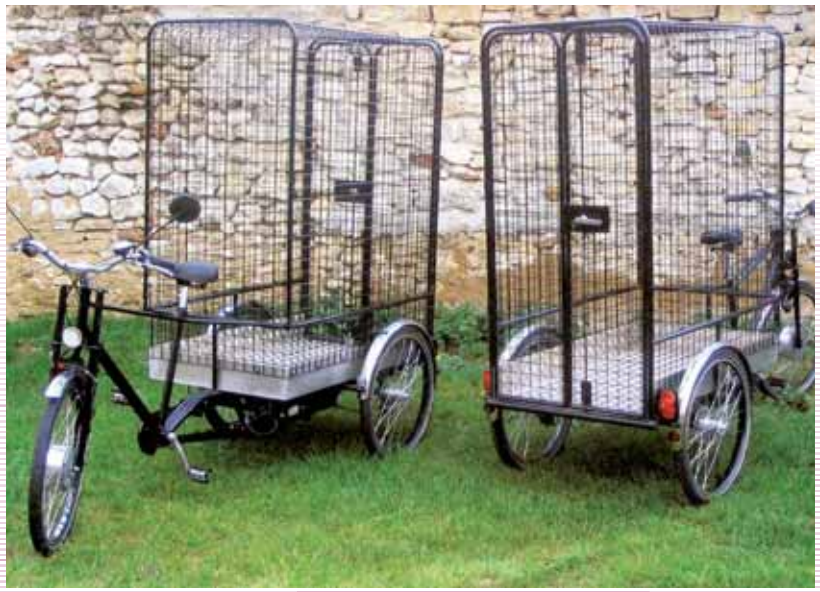
City size	Not relevant.
Costs	• The implementation of all equipment for the multi-use lane is quite expensive adding up to approximately 0.5 million € per route; • The installation of delivery areas is less expensive but additional services offered may cause considerable costs (e.g. for staff).
Implementation time	*Short term (< 3 years).*
Stakeholders involved	• Public authority (city); • Transport operators; • City planners; • Shops/companies to be delivered; • Chamber of commerce; • Vehicle drivers; • Public transport operators; • Associations of retailer/shop keepers.
Undesirable secondary effects	Interference with public transport may occur (e.g. inhabitants have to leave the parking space in the morning, i.e. they may not use public transport any more).

Benefits & Costs

Benefits

Space Management for Urban Delivery:

- Reduces the overall illegal parking activity (both cars and goods vehicles);
- Reduces the possibility of the second lane becoming blocked due to double parking, and this leads to improved circulation for all vehicles;
- Reduces the travel times and the search for a parking space, which leads to an optimisation of the traffic and to a reduction of the unnecessary transports in the city centre. The result is less pollution and energy consumption.



Equipment for Espace de Livraison de Proximité (ELP), Bordeaux
Photo: Bernard Gérardin Conseil

Example Multi-use lane, Barcelona (Spain)

Costs

The implementation of all equipment for the 'multi-use lane' in Barcelona is quite expensive adding up to approximately 0.5 million € per route. Additional costs incur for enforcement by the police.

Benefits

The main result is a reduction in travel time along the section of (generally) between 12 to 15%.

Costs

The costs for the installation of the solutions differ heavily and the actual cost for the city depends on the business case and the technical solution chosen.

Cost for the city can incur in form of the provision of space, investment for equipment, cost for enforcement measures and in some cases for staff.

"There is a large and expensive effort needed from the police to enforce the new measures (Multi-use lanes). For this reason automated enforcement is an important task for the future. Only step by step further lanes (applicable only for primary routes of the grid road system) or zones can be equipped. The multi-use lane as such is, however, a successful measure to regulate urban traffic flows. This measure is accepted by the users and can also raise the innovative image of the city."

Julio García Ramón, Mobility Services, Barcelona Municipality

Users & Stakeholders

Key stakeholders for implementation

In general public space management solutions for urban delivery should be planned and implemented in close cooperation with the city administration, the chamber of commerce, the shopkeepers and the transport operators. The interests and benefits of the key stakeholders for implementation are as follows:

- **City administrations**: To improve the overall transport system in making it more fluent, reducing congestion, noise and emissions.
- **Chambers of commerce**: To moderate interests between city and industry to be helpful in developing a common business model and synergies.
- **Shopkeepers**: To benefit from an improved delivery and more parking slots for the customers.
- **Transport operators**: To benefit from improved logistics leading to cost savings.

Users and target groups

The main users of multi-use lanes are both the delivery services and other road users like private cars and bicycles.

For the nearby delivery area (example ELP = Espace de Livraison de Proximité in Bordeaux) the main users are the delivery services.

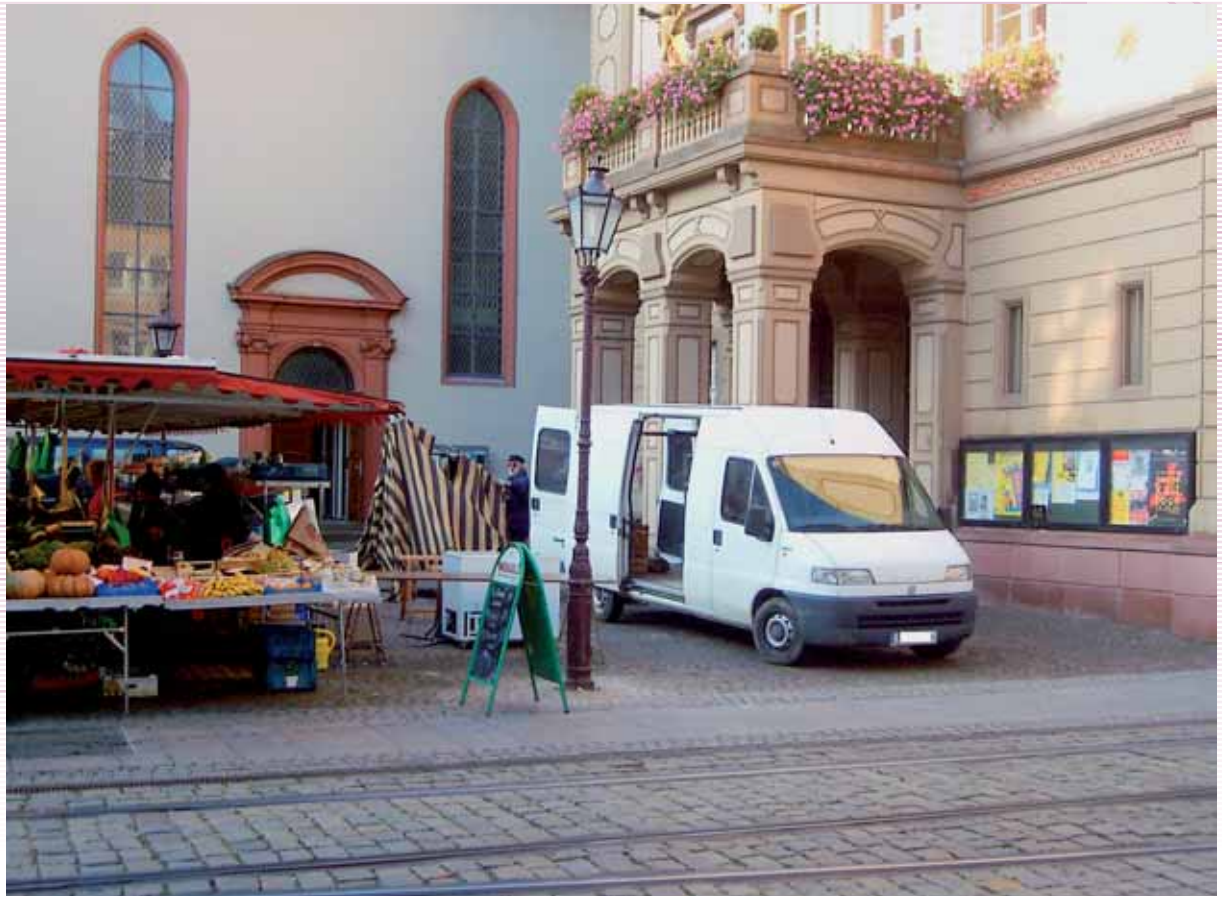


Photo: PTV Planung Transport Verkehr AG

From concept to reality

Preparation

Preparation → **Implementation** → **Operation**

Key aspects at this stage

Before implementing a space management concept for urban delivery make sure that:

- A socio-economic payback is ensured;
- A bottom up consensus (stakeholders, users, residents) is established;
- An enforcement concept (as e.g. technical part of the implemented measure) is ensured;
- The capacity management concept meets the demand of the different users;
- Clear signs and icons give guidance to the users;
- Education measures are included to raise awareness on the limited urban space;
- The design will be compatible with the requirements of the city architecture (e.g. historical buildings or promenades);
- The legal basis for the implementation is given. E.g. is it possible to dedicate urban space to a specific use? Are the existing signs sufficient or is the development of new signs necessary? Which adaptations might be necessary to switch from testing to normal operation?

The solution is preferably part of a bundle of measures. Such measures can/should be e.g. zone access control scheme, night delivery, bus lane, city logistics system with different elements. The integration of different measures leads to better results.

Photo: PTV Planung Transport Verkehr AG

Implementation

Key aspects at this stage

Several aspects have to be considered for the implementation of a Space Management for Urban Delivery Concept:

- The city or region being owner of the infrastructure resources implements the Concept on particular infrastructure and carries out the necessary construction work;
- The responsibilities for the operation of the Concept should be clearly defined;
- A long term financing concept including the sharing of costs should be given. Incentives (e.g. payment for personnel cost or enforcement) from the city side should be considered.

Some **barriers** in the implementation are:

- Poor cooperation and dialogue between planning and executive parties on urban, suburban and regional level;
- Lack of acceptance of the space management by the residents and retailers/shop keepers;
- Lack of (public) space at a perfect location;
- Extra enforcement needed (especially by the police).

Operation

Key aspects at this stage

Hidden incentives (e.g. payment for personnel cost or enforcement) on the city side can be considered for the very beginning of operation but should not be permanent. Monitoring of the actual cost within the first operation phase shows if adaptations have to be done in order to reduce costs.

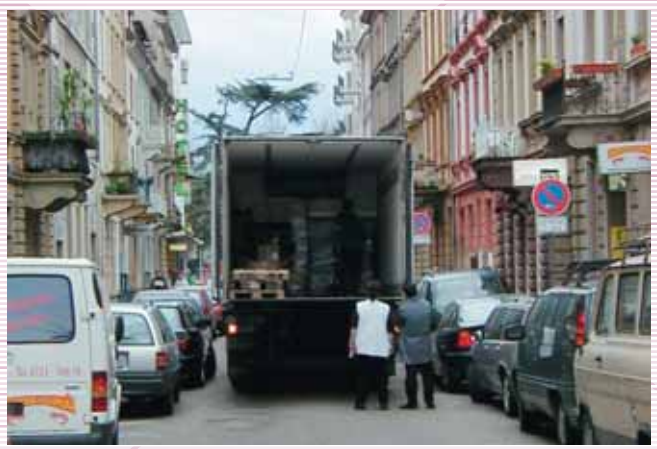


Photo: PTV Planung Transport Verkehr AG

At the beginning very often rather strong enforcement efforts will be necessary. If the police is responsible for the enforcement the efforts can be reduced as soon as the users get used to the new scheme. It is recommendable to reactivate the enforcement after a while in order to keep users on track.

The distribution of information about the positive effects of the scheme can increase acceptance.

An adaptation of the solution to the actual demand and the user needs (both transport operators, receivers and inhabitants) is important for the acceptance of the solutions.

Ongoing monitoring of the implemented solution guarantees that the offered supply meets the actual demand.

Other examples

‘Espace de Livraison de Proximité - ELP’ (= nearby delivery area), Bordeaux (France)

- The ELP is an area which is dedicated to loading and unloading of goods;
- The ELP idea comprises the installation of an urban transhipment platform (public area) on which dedicated personnel (‘voltigeur’) provides assistance for the dispatching of consignments for the last mile (inner city);
- From incoming trucks, goods are unloaded onto carts, bicycles, and boxes for the final distribution leg. For carrying out the final leg different transport modes (electric vehicles, tram, bicycles, by foot) are used;
- One ELP allows to deal with 3 to 5 cars (around 30 meters wide);
- The space is open during the whole day (24h) but the ‘voltigeurs’ only support the processes from Monday to Friday between 9 a.m. and 5 p.m. and on Saturday between 9 a.m. and 11 a.m.;
- A storage area is linked to the transhipment point for short term storage;
- The costs for the 2 permanent employees are rather high. During the second year of test, 1/3 of the financing was guaranteed by the operators (TNT), 1/3 by the chamber of commerce and 1/3 by the city of Bordeaux.

ELP, Bordeaux (France)
Photo: Bernard Gérardin Conseil

Bremen (Germany)

In Bremen the set up of so called “Umweltladepunkt” (= environmental loading zone) is planned at the moment and will be installed in 2007. Delivery vehicles following the Euro 5 emission standard will be allowed to make use of the loading zone. The loading zone will be open to all transport operators, which sign an according private law contract with the City of Bremen. The installation of such a loading zone has become possible due to the opening of a new parking house which provides enough space for private cars.

Photo: liftshare.com

Multi-use lane, Cologne (Germany)

The multi-use lane intends to adapt the capacity of the street better to the needs of the different user groups along the different daytimes - also with regard to the restaurants and bars which are located in the related street.

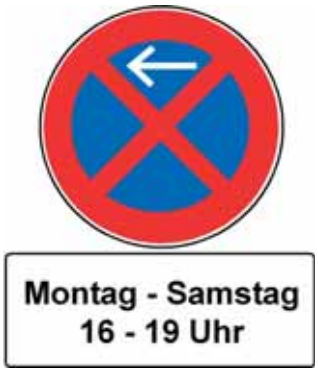
An experiment with one multi-use lane was implemented in August 2004 at the inner city ring road of Cologne. The following layout was implemented:

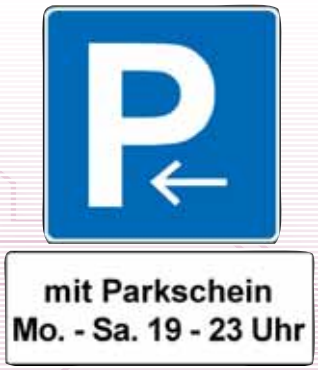
- The bicycle-lane was shifted to the existing parking lane and the promenade was extended in order to allow the restaurants to install tables and chairs on the promenade;
- The right one of the two lanes per direction is now a multi-use lane which is used as conventional lane for driving during peak-hours and during off peak hours for parking, loading and unloading;
- The left one of the two lanes per direction is only used for driving;
- The indication is given by a combination of conventional traffic signs (no variable message sings).

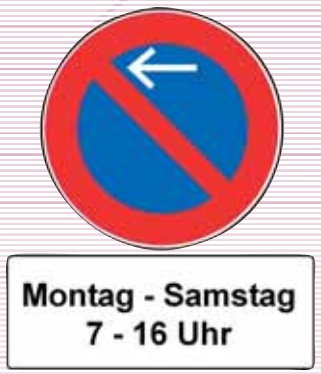
Weekday	Daytime	Kind of use
Monday – Saturday	7 a.m. to 4 p.m.	loading and unloading, entering or leaving a vehicle
Monday – Saturday	4 p.m. to 7 p.m.	driving
Monday – Saturday	7 p.m. to 11 p.m.	parking (parking ticket)
Monday – Saturday	11 p.m. to 7 a.m.	parking (free of charge)
Sunday – Monday	Sunday 7 a.m. to Monday 7 a.m.	parking (free of charge)

Results:

No major changes in the general traffic could be registered but a decrease of the number of traffic accidents could be measured.







From top to down: Ultimate stopping restriction; Parking with parking ticket; Qualified stopping restriction (free for loading and unloading and for entering/leaving a vehicle; maximum duration: 3 minutes).

Source: Köln, PTV Planung Transport Verkehr AG

ELCIDIS, La Rochelle (France)

In the narrow streets of the historic city center of La Rochelle, distribution activities cause environmental as well as congestion problems.

To decrease the problems with goods deliveries, the city has introduced access restrictions for entering the historic city:

- Trucks are only allowed to enter the city centre before 7.30 a.m. and they may not exceed a total weight of 7.5 tons;
- At 7.30 a.m. only electric vehicles starting for the ELCIDIS distribution centre and less than 3.5 tons vehicles are allowed to enter the city centre.

The successful deployment of electric vehicles has led to a plan for introducing an electric vehicle based logistic system for goods deliveries in the city.

The use of a central distribution centre will lead to a more efficient organisation of goods deliveries and to a reduction in vehicle kilometres covered by trucks and vans in the city centre. The electric urban distribution vehicles will have longer access to the city centre, which is an important incentive for shops and businesses to join the service.

The platform is managed by a regional transport operator which was chosen through the results of a European call. The initial investments have been done by use of funding from the ELCIDIS project (Electric City Distribution System) and the percentage of the subventions has been reduced step by step.

ELCIDIS Electric City Distribution System
Photo: ELCIDIS

Dublin (Ireland)

In Dublin DHL installed a bus with a dispatcher in the city centre. The bus is placed in the morning and the distribution of the parcels is done during the day by foot. Due to complaints of the residents about the vehicle parking DHL bought a whole building. In this case 20 walking people replace 12 distribution vehicles.

Plate-forme de distribution de Monaco et parc d'activités logistiques (PAL), Monaco / Nice (France)

The platform is active since 1989 in the Fontvieille quarter. Since 1999 a cooperation between the platform and the "parc d'activités logistiques (PAL) de Nice" (= logistic park Nice, where the government of Monaco has dedicated an area of 20.000 m^2 for storage).

Berlin (Germany)

In Berlin, a comprehensive goods transport strategy was developed of which loading zones are an important part. Within several city districts loading zones are now installed. However, to assign the loading space exclusively to commercial transport remains still a problem as the German law does not provide specific instruments. In Berlin a specific sign for loading zones was developed and installed at specific streets, allowing to reserve space for commercial transport as well as to implement enforcement measures.

Rouen (France)

Due to a planned construction site as part of an important project for public transport 2 ELPs have been installed in the city of Rouen for the duration of 1 year. In order to decide about the ELP solution a feasibility study was carried out and the positive results lead to the installation of the 2 ELPs. They are in operation since September 2005.

Further information & contacts

Further information

ELCIDIS (Electric City Distribution System)
La Rochelle.
www.elcidis.org (English)

Barcelona mobility pact
Publications
www.bcn.es/infotransit (English and Spanish)

Köln multi-use lane
www.stadt-koeln.de/verkehr/ringe/index.html
(German)

Urban delivery areas in France
(Espaces logistiques urbains)
www.tmv.transports.equipement.gouv.fr
(French)

BESTUFS workshops
BESTUFS is a thematic network on urban freight transport funded by the European Commission.
www.bestufs.net (English)

NICHES - further documents with more details
Reports on the state of the art, analysis of success factors and barriers for implementation, transferability potential and integrated strategies are available on the NICHES websites (English):
www.niches-transport.org
www.osmose-os.org

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