

# URBAN LOGISTICS

## Best practices – examples in Europe

### First impressions about Budapest

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1.	OBJECTIVE OF THE DOCUMENT .....	3
2.	EXAMPLES OF BEST PRACTICES PROJECTS IN EUROPE .....	3
2.1.	BESTFACT.....	3
2.2	STRAIGHTSOL .....	4
2.3.	SMARTFUSION.....	5
2.3.	COOPERATIVE MOBILITY FOR URBAN FREIGHT ENERGY EFFICIENCY IN HELMOND (THE NETHERLANDS).....	5
2.4.	PROMOTION OF SUSTAINBLE FREIGHT LOGISTICS IN LJUBLJANA .....	6
2.5.	REDUCING AIR POLLUTION BY ENGAGING WITH FLEET OPERATORS THROUGH ECOSTARS IN EDINBURGH.....	7
2.6.	CAMPAIGN TO DELIVER GOODS BY BIKE IN PAMIERS .....	8
2.7.	MICROCARRIER - AN INNOVATIVE, ELECTRIC, PARCEL-DELIVERY VEHICLE TESTED IN BERLIN .....	9
2.8.	DISTRIPOLIS: A NEW CITY LOGISTICS SOLUTION IN PARIS .....	10
2.9.	PADOVA CITYPORTO: A SUCCESS MODEL OF URBAN LOGISTICS .....	11
2.10.	SILENT INNER-CITY OVERNIGHT DELIVERIES IN BARCELONA.....	12
2.11.	ECOLOGISTICS PARMA: CONSOLIDATION AND LAST MILE DELIVERY OF GOODS LOGISTIC SCHEME .....	13
2.12.	THE FOOD DISTRIBUTION MODEL OF BORLÄNGE .....	14
2.13.	CARGO-TRAM AND E-TRAM, BULKY AND ELECTRIC WASTE COLLECTION BY TRAM IN ZURICH .....	14
2.14.	RECICLETA - CARGO-BICYCLES TO COLLECT WASTE PAPER IN BUCHAREST .....	15
2.15.	EMISSION-FREE LAST MILE DELIVERY SERVICE IN LONDON .....	15
3.	URBAN LOGISTICS IN BUDAPEST .....	16
3.1.	INITIATIVES IN BUDAPEST .....	16
3.1.1.	Tide tools: cost-benefit analysis workshop Budapest (www.tide-innovation.eu).....	16
3.1.2.	Budapest: The city's biggest bicycle courier service .....	17
3.2.	FIRST IMPRESIONS.....	17
3.3.	PROPOSAL OF STUDY .....	19

## 1. OBJECTIVE OF THE DOCUMENT

The objective of the document is to compile information about projects developed in Europe regarding to urban logistics best practices. Then a short explanation about urban logistics in Budapest will be made.

## 2. EXAMPLES OF BEST PRACTICES PROJECTS IN EUROPE

### 2.1. BESTFACT

The objective of BESTFACT is to develop, disseminate and enhance the utilisation of best practices and innovations in freight transport that contribute to meeting European transport policy objectives with regard to competitiveness and environmental impact.

This project was the first **portal of freight transport best practices and policies**, with a part devoted to urban logistics.

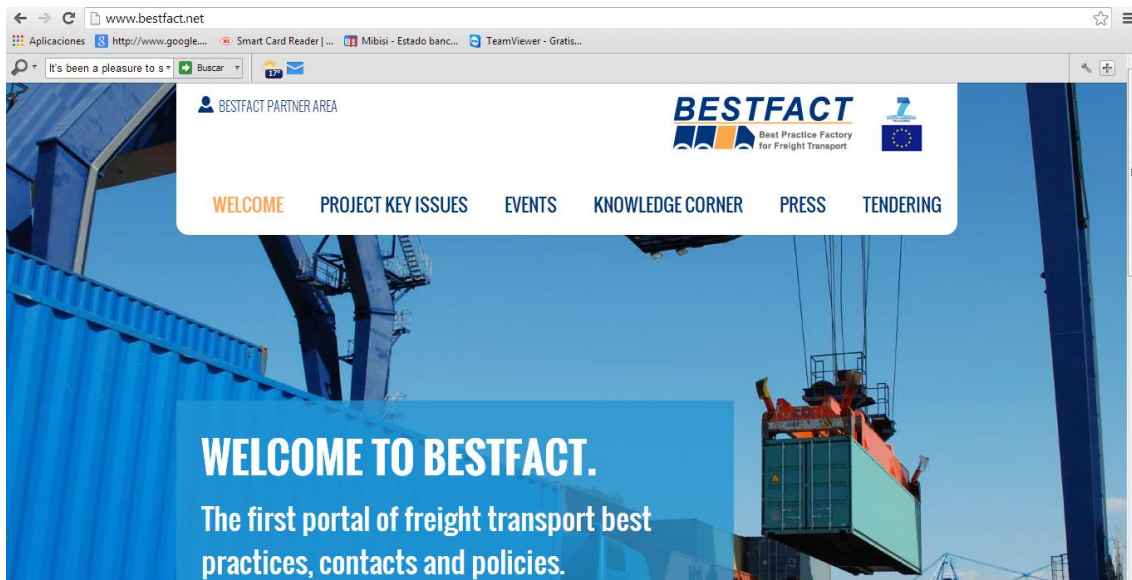


Image 1. BESTFACT web site. [www.bestfact.net](http://www.bestfact.net)

## 2.2 STRAIGHTSOL

The objectives of STRAIGHTSOL (Strategies and measures for smarter urban freight solutions) are threefold:

1. Develop a new impact assessment framework for measures applied to urban-interurban freight transport interfaces.
2. Support a set of innovative field demonstrations showcasing improved urban-interurban freight operations in Europe.
3. Apply the impact assessment framework to the live demonstrations and develop specific recommendations for future freight policies and measures.



Image 2. Straightsol webpage. [www.straightsol.eu](http://www.straightsol.eu)

The demonstrations represent cutting edge initiatives from leading stakeholders like DHL Supply Chain, Kuehne+Nagel and TNT, and cover Brussels, Barcelona, Thessaloniki, Utrecht, Lisbon, Oslo and the south of England. The demonstration projects are:

- DHL Supply Chain's Urban Consolidation Centre in L'Hospitalet de Llobregat - Barcelona (Spain).
- TNT Express in Brussels - City Logistics Mobile Depot (Belgium) Remote 'bring-site' monitoring for more reactive and sustainable logistics (United Kingdom).
- Kuehne-Nagel - rail tracking and warehouse management (Greece).
- GS1 - Smart Urban Transport Solution - Retail supply chain management and "last mile" distribution by use of standardized information (Norway).
- Colruyt and Delhaize - Night-time distribution in Brussels (Belgium).
- Loading / unloading operations management and regulations Lisbon (Portugal)

STRAIGHTSOL will contribute to the Commission's research agenda through:

- 1) an implementation of sustainable urban-interurban freight transport solutions
- 2) widely disseminating the experiences and effects from the demonstrations amongst the logistics community
- 3) demonstrating the added value of the evaluation tool framework for assessing last mile distribution and urban-interurban freight activities.

### 2.3. SMARTFUSION

Smartfusion: Smart Urban Freight Solutions is a public-private partnership (PPP) which will build upon the existing urban freight development strategies of three demonstration city-regions: Newcastle, Berlin and the Lombardy region. It will demonstrate smart urban freight solutions in urban-interurban supply chains.

The leading ideas are to introduce the concept of the European Green Car Initiative in last mile operations; to introduce innovative technology developments in the fields of urban freight planning, vehicles and urban-interurban transshipment; and to develop comprehensive and transferable impact assessment models for smart urban freight solutions.



Image 3. Smartfusion website. [www.smartfusion.eu](http://www.smartfusion.eu)

### 2.3. COOPERATIVE MOBILITY FOR URBAN FREIGHT ENERGY EFFICIENCY IN HELMOND (THE NETHERLANDS)

The city of Helmond's mobility policy has a strong emphasis on traffic solutions based on technology, supporting and showcasing smart mobility schemes. During the last ten years, the municipality has invested in an extensive adaptive urban control network which allowed the city to serve as a test-site for cooperative systems projects such CIVIS, SAFESPOT and FREILOT.

In the framework of the FREILOT pilot, the city of Helmond tested 4 out of the five basic functions developed within the project: Intersection control, speed limiter, acceleration limiter and eco-driving support (delivery space booking being the fifth application not included in the Helmond demonstration). Other cities involved were Lyon (France), Krakow (Poland) and Bilbao (Spain). Its main objective was to reduce up to 25% of fuel consumption of equipped trucks in urban areas.

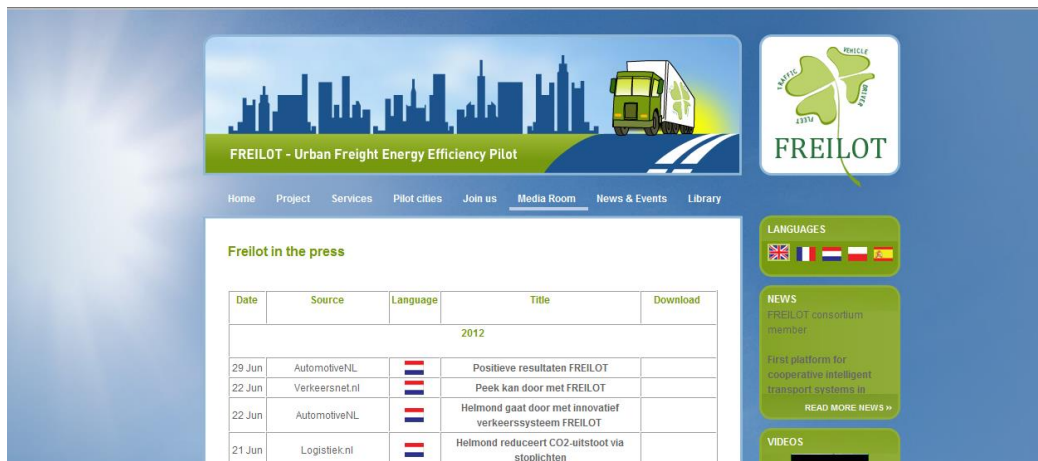


Image 4. Freilot website. [www.freilot.eu](http://www.freilot.eu)

## 2.4. PROMOTION OF SUSTAINABLE FREIGHT LOGISTICS IN LJUBLJANA

To counteract the problems associated with the negative impacts of freight transport, the City of Ljubljana has decided to promote sustainable city logistics. As a first step, a computer simulation model and a web portal for better freight transport in the city has been developed.

With pedestrian zones being overcrowded by delivery vehicles during delivery time in peak-hours, the City of Ljubljana has recognized the need to develop a long-term plan of measures aimed at reducing freight traffic in urban areas. In order to promote and increase the awareness of delivery companies, shop owners, citizens, local authorities and other stakeholders about sustainable freight logistics, different solutions have been introduced in Ljubljana within the CIVITAS ELAN project to achieve the following objectives:

- To carry out transport research on goods flows in the demonstration area and to determine appropriate transport policy measures for sustainable city logistics
- To develop a computer model simulating efficient goods distribution
- To establish a national internet web portal for the promotion and support of sustainable city logistics
- To develop an on-line routing tool



Image 5. Civitas website. <http://www.civitas.eu/content/sustainable-freight-logistics>

The measure was started in 2009 with extensive research on freight traffic within the city center to better define the specific problems associated with freight delivery in Ljubljana. As part of this research, traffic flows of freight vehicles on the main city roads were processed and analyzed on a daily and yearly basis. The analysis was based on data of electronic traffic counters. In addition, delivery vehicles in selected pedestrian zones were analyzed.

A notable fact determined through the survey was the weight consignment of the vehicles. Only about a third of the consignments are heavier than 100 kg and almost half of the consignments only weigh between 0 and 50 kg (13% between 50-100 kg). These findings can help to determine the type of vehicles needed for goods transport in the inner city area.

## 2.5. REDUCING AIR POLLUTION BY ENGAGING WITH FLEET OPERATORS THROUGH ECOSTARS IN EDINBURGH

Along with other councils in the UK and the EU, Edinburgh has tough air quality targets to meet. Seeing a significant proportion of pollution originating from diesel-engined road vehicles led the Council to set up the fleet recognition scheme ECOSTARS. It provides the city with a method of engagement with operators of freight and passenger fleets of HGVs, buses, coaches and vans.

Supported by the IEE co-funded project ECOSTARS Europe, Edinburgh has set up a local ECOSTARS fleet recognition scheme. ECOSTARS schemes promote more efficient and cleaner freight and passenger transport by providing recognition, guidance and advice to operators. ECOSTARS Edinburgh rates vehicles and operating practices using star rating criteria to recognize levels of environmental and energy savings performance. Operators then receive tailor-made support to ensure the fleet is running

as efficiently and economically as possible, and to help them progress to higher ratings within the scheme.

Edinburgh was the first Scottish local authority to introduce ECOSTARS. The scheme was launched in Edinburgh in January 2012 involving council officials and inaugural scheme members.

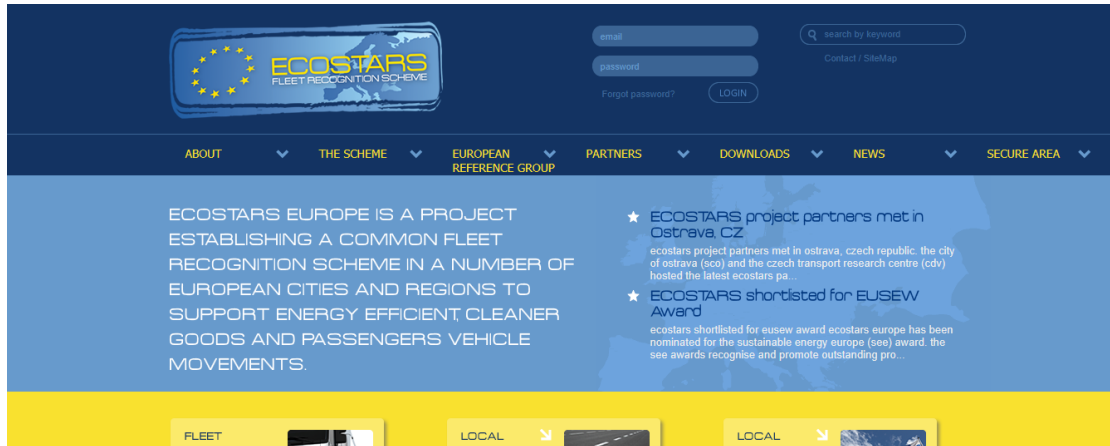


Image 6. Ecostars website. [www.ecostars-europe.eu](http://www.ecostars-europe.eu); [www.ecostars-edinburgh.org](http://www.ecostars-edinburgh.org)

ECOSTARS is allowing Edinburgh to engage more meaningfully with fleet operators on a voluntary basis. It has demonstrated its effectiveness in securing fleet improvements that will benefit air quality in Edinburgh.

Through the workshops with fleet operators the City of Edinburgh Council has gained an insight into the world of fleet operators, their needs and priorities. Feedback about the scheme and meeting outcomes are shared with the Council’s Transport and Environment Committee, so providing a way to improve cooperation between the local authority and operators.

## 2.6. CAMPAIGN TO DELIVER GOODS BY BIKE IN PAMIERS

The French City of Pamiers set up a pilot delivery service of goods using an E-tricycles. The approach was not successful due to insufficient communication of the campaign to the end users. The reasons for the failure were:

- the parking place of the electric bike was not well situated,
- the citizens didn’t see it easily,
- the delivery man was from another city (different accent) and arose suspicion.



Image 7. Flyer delivered during the campaign



Image 8. Epomm website. [www.epomm.eu](http://www.epomm.eu)

## 2.7. MICROCARRIER – AN INNOVATIVE, ELECTRIC, PARCEL-DELIVERY VEHICLE TESTED IN BERLIN

The vehicle was developed by the Fraunhofer Institute. The focus was developing a micro carrier that could be used as a multiple trailer vehicle as well as a separate hand guided transportation unit.

The first generation of the micro carrier consisted of three parts: the tractor, the platforms, the containers. The tractor can carry up to 300 kilos, with a maximum operating speed of 5 km/h.



*Image 9. Microcarrier first version.*

## **2.8. DISTRIPOLIS: A NEW CITY LOGISTICS SOLUTION IN PARIS**

To the two regular links in the supply chain – grouped shipments to warehouses and deliveries by truck or light vehicle to towns – Distripolis adds a third link: logistics bases located in cities, from which vehicles adapted to final-kilometer logistics make deliveries.

Geodis' Distripolis urban logistics program is made up of:

- Grouped shipments to a platform in the city (Bercy platform in Paris);
- "BLUE" Environmental Urban Bases, located in the city close to the main retail districts (eight in Paris), that are supplied several times a day by Euro 5-compliant trucks and, in the long-term, Euro 6-compliant or hybrid trucks with a gross vehicle weight of more than 12t;
- Deliveries from the BLUE bases for parcels and pallets weighing less than 200kg by ecological vehicles adapted to final-kilometer deliveries, namely electric light vehicles and power-assisted tricycles;
- Deliveries from the platform for goods of over 200 kg by Euro 5-compliant vehicles and, in the long-term, Euro 6-compliant or hybrid vehicles. Deliveries from the BLUE bases for parcels and pallets weighing less than 200 kg by ecological vehicles adapted to last mile, namely electric light vehicles and power-assisted tricycles.

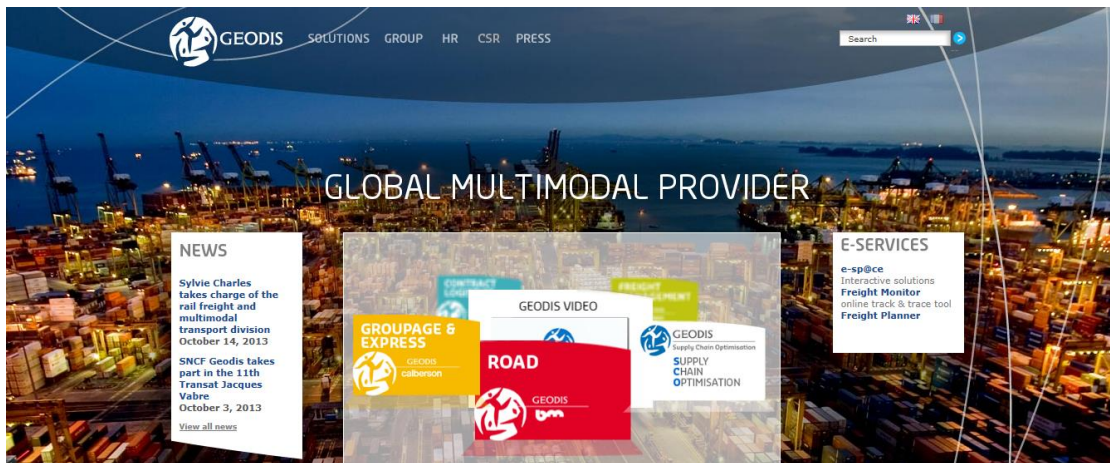


Image 10. Geodis webpage. [www.geodis.fr](http://www.geodis.fr)

## 2.9. PADOVA CITYPORTO: A SUCCESS MODEL OF URBAN LOGISTICS

The Cityporto logistics scheme for urban freight consolidation and distribution has been successfully operating in Padova since 2004. It consists of:

- an urban consolidation centre, located in the freight village Interporto Padova,
- an environmentally friendly fleet of hybrid and CNG vehicles (10 vehicles),
- a dedicated ITS system,
- a set of coordinated local rules for urban freight transport.

The Cityporto model is based on a voluntary subscription. Logistic operators who choose to join the initiative benefit from easier access to the city centre for freight delivery:

- enter the city 24hrs a day,
- use reserved public transport lanes,
- use dedicated loading bays for their load/unload operations.

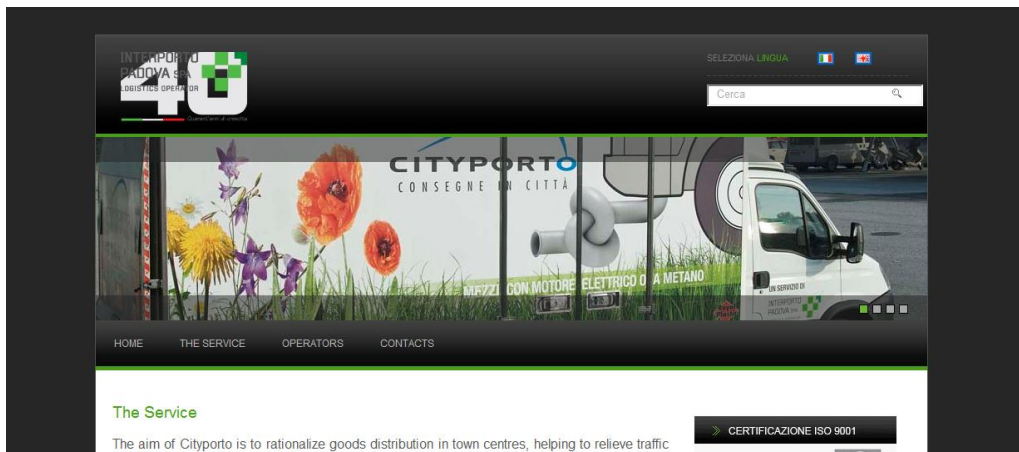


Image 11. Padova cityporto website. [www.cityporto.it](http://www.cityporto.it)

Starting from 2005 when the number of delivered items was about 190,000, the volume of activity has almost doubled in the intervening years with a peak of 397,000 items in 2008. Data on average items per delivery is constantly growing (up to 6.6 packs per delivery).

A great improvement in environmental conditions has been also achieved, as confirmed by a recent study carried out for Ministry of Environment on Cityporto activity over a two year period (2008-2010). The Cityporto fleet has reduced the total amount of kms covered by freight vehicles from a daily average of 1,052 km per day in the second part of 2008 to 1,216 km per day in the first part of 2010.

## 2.10. SILENT INNER-CITY OVERNIGHT DELIVERIES IN BARCELONA

In 2003 the Barcelona Municipality, through its Road and Traffic Department (SVP) and within the MIRACLES-CIVITAS project, carried out its first night-time delivery trial in collaboration with MERCADONA, a national chain of supermarkets.

The main objective was to demonstrate the feasibility of silent overnight deliveries both in terms of social impact (i.e: avoid noise nuisance to residents; reduce the number of daytime delivery vehicles) as well as from the operator's point of view (return on investments for vehicle adaptation and night shifts).

Results showed that noise levels differed very little from ambient conditions. The results were quantified in terms of noise measurements compared to ambient noise levels on nights when deliveries were not being made. The average minimum value, recorded during unloading, inside residences (23.5 bB(A)) was 0.3 dB(A) greater than those recorded before loading started. The average maximum value, inside residences (33.4 dB(A)), showed no difference. The average maximum value, recorded in the street (52.2 dB(A)), was only 0.1 dB(A) higher than ambient levels.

This trial has demonstrated that quiet delivery is possible with a 40 tonne truck serving supermarkets with a large capacity and with substantial refrigeration facilities. Up to 7 daytime and peak-hour deliveries with smaller vans can be substituted by 2 night-time deliveries using the larger, quiet vehicle.

### **2.11. ECOLOGISTICS PARMA: CONSOLIDATION AND LAST MILE DELIVERY OF GOODS LOGISTIC SCHEME**

ECOLOGISTICS Parma is an integrated and systemic urban delivery scheme where a consolidated last-mile delivery service promoted by local authorities (Ecocity) is combined with a system of permits and certifications of green vehicles and platforms of other freight transport operators. This allows free competition among all players in a multi-hub city logistics system. The scheme is complemented by a set of rules and regulations and includes the delivery of perishable fresh goods.

The basic idea of the overall ECOLOGISTICS scheme is to allow operators to choose between two options:

- “Credit” their vehicles. This is possible only if their vehicles meet some specific requirements regarding:
  - type of goods to be transported,
  - the use of eco-friendly fuels (CNG, bi-fuel or electric and/or Euro 3, 4, 5),
  - the use of vehicles not exceeding 3.5 t,
  - a threshold value loading factor of at least 70% and the use of a location system for vehicle traceability,
- In the second case, they simply unload their goods in the CAL platform: goods are then consolidated and delivered in the city centre by the ECO CITY service.

One of the key factors of success of the project lays in the participatory approach followed by the Municipality for designing and gradually implementing the scheme with the collaboration of trade associations and operators. The original Planning Board is now a Monitoring Committee that meets twice a month to discuss and solve problems related to the scheme.

ECOLOGISTICS makes use of ITS technologies for managing the platform and monitoring delivery vehicles. Recently, a revamp of all OBUs (on-board-unit) for traceability began in order to harmonise all data and send it to a central control traffic unit. The partners of ECO CITY are not only local SME's, but also multinational companies (Coca-Cola, Galbani, etc.) and large-scale retailers.

Currently, after a pilot stage lasting 2 years, the service is funded by the fares paid by those who take goods to the CAL for delivery.

## **2.12. THE FOOD DISTRIBUTION MODEL OF BORLÄNGE**

The municipality of Borlänge has developed a food distribution model where food procurement and food transportation have been separated. The model has been in place for 10 years and it is now a good example of best practice.

The deliveries take place during the night and very early in the morning. This is more convenient for people working in the kitchens as the food has already been delivered when they arrive at work.

- Levels of noise near schools have significantly decreased,
- Road safety has greatly improved,
- Food is at immediate disposal of kitchen staff when they start to work.

The split between procurement and transport has allowed small local food producers to access the market which was previously 'closed'. Earlier, some food suppliers were dominating the market, as, in most cases, local producers didn't have the possibility to deliver their goods on their own (because of scarce economic resources). Now 20% of all food supplies come from small regional producers, which means a reduced impact on the wider environment as more local food suppliers decreases the overall movement of food supplies from around the world.

Lessons learnt concern the importance of working with the model continuously, as non-stop efforts are essential to involve and attract small suppliers. The success of the initiative is mainly due to an innovative idea and the courage of staff and politicians in implementing a new sustainable model for urban food distribution. The distribution network has doubled in its dimension in the last years (3 to 6 municipalities) and the model of Borlänge is ready to be transferred to other cities. At the moment the model is in operation in 10 Swedish municipalities, and a further 30 more have begun their own studies to test the feasibility of a similar model in their cities.

## **2.13. CARGO-TRAM AND E-TRAM, BULKY AND ELECTRIC WASTE COLLECTION BY TRAM IN ZURICH**

Introduced in April 2003, the Cargo-Tram service offers a car-free alternative to Zurich residents who need to dispose of their bulky waste. In 2006 the E-Tram started a similar service for the removal of electrical and electronic waste. Today, cargo trams make about 18 round trips every month. The service is free of charge.

It's not surprising that Zurich introduced the Cargo-Tram and E-Tram for its residents: the city, with its 385,000 inhabitants, has 165 kms tram network and actually 43 per cent of household waste remain in the recycling process.

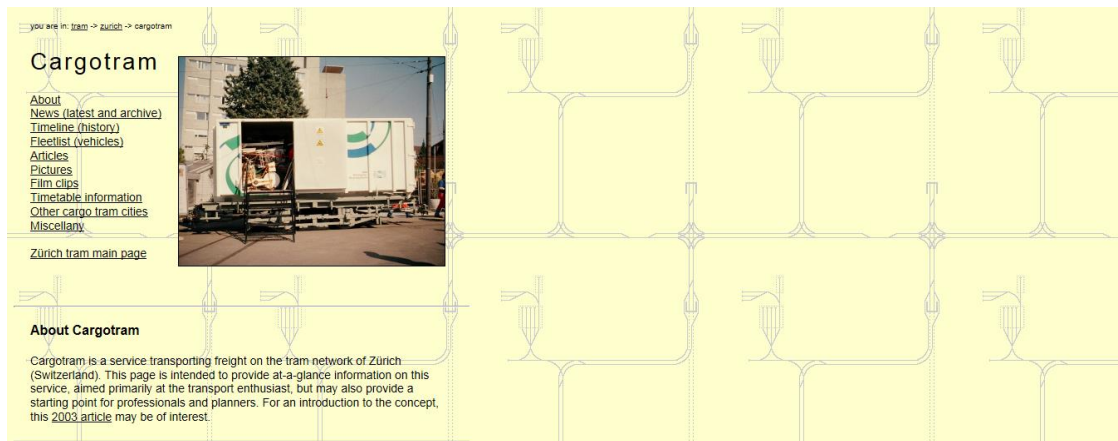


Image 12. Cargotram website. [http://www.proaktiva.ch/tram/zurich/cargotram\\_index.html](http://www.proaktiva.ch/tram/zurich/cargotram_index.html)

## 2.14. RECICLETA - CARGO-BICYCLES TO COLLECT WASTE PAPER IN BUCHAREST

Launched by ViitorPlus NGO as a pilot project in September 2009, RECICLETA is the first carbon neutral initiative in Romania. With the help of cargo-bicycles, disadvantaged individuals (with financial difficulties, from large families, unemployed) get ecological jobs: to collect waste paper from small companies in Bucharest and transport it to recycling agents.



Image 13. Recicleta.

## 2.15. EMISSION-FREE LAST MILE DELIVERY SERVICE IN LONDON

Within central London, an innovative emission-free last mile goods delivery service was set up. The system is based on micro consolidation centres in the inner city, which are used as starting points for cargo bikes and electric vans. These emission-free bikes and vans are used to deliver the cargo the last few miles to the customer.



*Image 14. London vehicles for emission-free delivery.*

## 3. URBAN LOGISTICS IN BUDAPEST

"Freight logistics has an urban dimension. In view of stakeholders, any urban mobility policy must cover both passenger and freight transport. Distribution in urban areas requires efficient interfaces between long-haul transport and short distance, distribution to the final destination. Smaller, efficient and clean vehicles could be used for local distribution. Negative impacts of long distance freight transport passing through urban areas should be reduced through planning and technical measures."

*GREEN PAPER. "Towards a new culture for urban mobility", Commission of the European Communities, 25/9/2007.*

### 3.1. INITIATIVES IN BUDAPEST

In this part of the document, some of the initiatives that are already on-going in Budapest have been collected.

#### ***3.1.1. Tide tools: cost-benefit analysis workshop Budapest ([www.tide-innovation.eu](http://www.tide-innovation.eu))***

To make informed transport policy and planning decisions, local authorities need clear guidance on the costs, benefits and overall effects of possible transport measures. Detailed information about the potential effects of a measure can accelerate the take-

up of urban transport innovations. TIDE is developing a handbook on assessing transport measures to assist cities in evaluating the potential costs, benefits and overall effects of a proposed project. As a starting point existing methodologies for cost-benefits analysis (CBA) and other decision support tools were reviewed and summarized in a working paper.

On April 25th 2013 the TIDE consortium, including the cluster support partners and the TIDE leading TIDE Tools cities, came together to discuss appropriate methods for the assessment of transport measures such as those included in TIDE. Five international experts on CBA and impact assessment supported the TIDE consortium. In cluster specific focus groups, the various effects, which should be included in such an assessment, were identified and the availability of data to describe these effects was evaluated. Based on this, the applicability of a cost-benefit-analysis to the various TIDE measures was discussed. It was found, that in most cases a CBA can hardly reflect all important impacts of the measure. A tool that allows assessing the variety of TIDE measures has to be simple but flexible and needs to include quantitative as well as qualitative effects. The results of this workshop have also fed into the Handbook for transferability analysis in urban transport and mobility.

### ***3.1.2. Budapest: The city's biggest bicycle courier service***

The Hajtás Pajtás bicycle courier company started 1993 as a three-person enterprise and became one of the market leaders for local parcel and mail delivery after 10 years of operations. With a staff of 160 people it frees the congested capital from 100 cars, saving an estimated 150 tons of CO2 emissions annually. The company takes a leading role in promoting biking in Budapest. (Source: [www.eltis.org](http://www.eltis.org))

## **3.2. FIRST IMPRESSIONS**

This section of the document collects my first personal impressions of urban logistics in Budapest. I'm not trying to perform an exhaustive analysis, impossible to carry out in the short time available for this work. This is only to give a point view of the urban logistics of the city.

As a civil engineering walking on a new city, I pay attention to transport organization. I find charming the old trolley bus on streets and contemplate the infrastructures to promote the use of bikes in the city.



*Image 15. Fővám tér.*



*Image 16. Metro line 1 station.  
Andrassy út.*



*Image 17. Bicycle path. Near Erzsébet hid.*

Regarding urban logistics in the city, I found difficult to find dedicated parking spaces for loading and unloading trucks. So, the operations of urban logistics in streets generate interference with traffic and security problems to pedestrians and cyclists.

Also, I didn't find any normalized traffic signal to locate dedicated parking spaces. Only in some streets, where parking is not allowed, there is a signal to indicate that only the trucks can park there to perform loading and unloading. I could not find any logistics platform, on-going or planned, either.

From my point of view, that means that **an effort has to be done in order to include these activities into the mobility policies**, principally in the policies regarding to the regulation of the parking spaces.

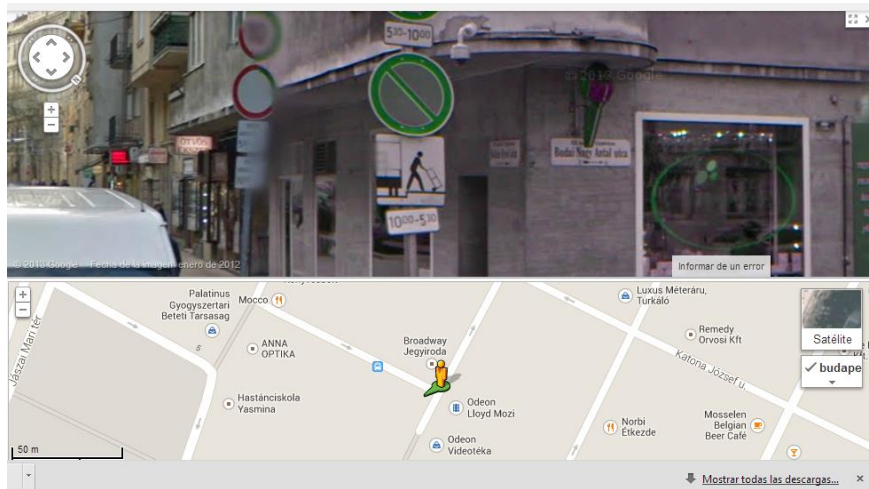


Image 18. Loading-Uploading spaces in Budapest.

### 3.3. PROPOSAL OF STUDY

To analyse the current situation it would be necessary to carry out a deep study on urban logistics. This part of the document is a summary of the concepts that should be taken into account.

First of all, it is important to identify all the **stakeholders** and try to involve them into the process of decision. Main stakeholders are:

- Carriers: Retailers, Logistics operators, Self-suppliers, etc.
- Shops and other activities: traditional shops, construction, food, delivery (homes), etc.
- The community: Public administrations, citizens, etc.

The **hypothesis** to start de study could be:

- a) The problems caused by UL are different in different areas → zoning
- b) The problems caused by UL are different depending on the time of the year → consider different periods.
- c) The UL affects seriously the parking zone → define routes to “spy walkers”
- d) The UL affects the traffic → measure speeds in different times, taking into account UL operation time tables.
- e) An important part of the problems are caused by the breach or lack of regulation by the actors involved.

The **results** will give information about:

- ✓ Analysis of the occupancy rates (also dotation and usage of the dedicated parking spaces)
  - Global results for each period.
  - Results for each area.
  - Results for each time.
  - Comparison.
- ✓ Analysis of the incidences caused by the vehicles of UL
  - Global results. Type of incidence.
  - Results for each area. Comparison between periods.
  - Analysis of the characteristics of the UL activities:
  - Global results. Detected infractions.
  - Operating times. Comparison between areas and periods.
  - Number of operations. Comparison between areas and periods.
  - Analysis of the influence on traffic
- ✓ Medium speeds and incidences. Comparison between areas

Once the current situation is characterized, particular proposal can be done, such as:

- ✓ New local regulations.
- ✓ To develop a plan of action with different types of measures and different time horizons.
- ✓ Establish a working group with the participation of agents.
- ✓ Encourage coordination among stakeholders
- ✓ Creation of common terminals to several carriers
- ✓ Use of private parking spaces in buildings for performing certain activities of UL
- ✓ Regulation of the access to pedestrian areas
- ✓ Allow double line parking for vehicles of UL, limiting the time.
- ✓ Foster the distribution on peak hours.
- ✓ Interaction with urban traffic systems
- ✓ Others.