LIFE+ PERHT Project
Parking green services for better environment in Small/Medium Historic Towns
LIFE11 ENV/IT/000015

FINAL CONFERENCE
La Mobilità Smart nelle Città Storiche di Piccole e Medie Dimensioni
Treviso, 17 Marzo 2016

Piano della Logistica Urbana Sostenibile:
i risultati del Progetto Europeo IEE ENCLOSE

Antonio Liberato - MemEx Srl
Giorgio Ambrosino - GA Consultancy
City Logistics in Urban Areas

- Responsible of quarter of overall urban transport CO2 emissions (and 30-50% PM and NOx)
- Impacts on urban environment, noise and living/business conditions
- Relevant traffic component in the city (15% of circulating vehicles)
- Very low load factors for delivery vehicles (i.e. 38% in London)
- Regulated/influenced by public authorities
- Operated by private companies, in general of very small dimension (85% with less of 5 employers, subcontracted for urban trucks)
- Changing urban patterns due growth e-commerce, ageing population
EU Policy and City Logistics

“Achieve essentially CO2-free city logistics by 2030”

- optimizing urban logistics efficiency (economic, environment, …)
- improving the **links between long-distance** and urban freight transport distribution…
- **incorporating freight transport** in local mobility policy by the development of “**Sustainable Urban Mobility Plans**”

**Actions:** Best Practice exchange, R&D, Funding, Guidelines

… in any case solutions based on the experience of big towns and refer to one model!
Freight Distribution in Small / Medium (Historic) Towns

More complex due to:

• City environment
  *old road infrastructure, narrow streets, etc.*
• more strict access regulations
• presence of heritage and historic assets
• higher risks for pedestrian safety

21 cities with more than 1 million inhabitants
180 cities with more than 200.000 inhabitants and less 1 MI
1364 cities between 40.000 and 200.000 inhabitants
IEE-ENCLOSE Project

ENergy efficiency in City LOgistics Services for Small and Mid-sized European Historic Towns

- Intelligent Europe Energy Programme
- Starting date: May 2012
- Project End: February 2015
- Project Coordinator: MemEx (Italy)
- 16 partners, 13 EU Countries, 9 Towns

Lucca, Trondheim, s’Hertogenbosch, Burgos, Almada, Dundee, AlbaIulia, Serres, Balchik
ENCLOSE Main Results

Implementation and operation of

- Pilot Services in Lucca, Trondheim and s’Hertogenbosch;
- Soft measures Burgos, Almada, Dundee, Albalulia, Serres, Balchik

Development of

- Feasibility Study in 6 ENCLOSE Follower Towns
- FEV requirements for Urban Logistics services
- Common SULP methodology/guidelines
- Sustainable Urban Logistic Plans in 9 ENCLOSE towns
- SULP Portfolio
- Knowledge and experiences exchange and training courses
- Promotion and Communication ENCLOSE approach

Point of view of City and Public Authorities
Key role of City Administration

Policy and Rules
• Specific objectives (reduction of freight vehicle trips and environmental impact, increase load factors, etc.)
• Quality certificates / permits schemes
• Incentives for “green vehicles” (e.g. FEVs, PHEVs, etc.)
• Access in relation to goods/time/activities, Low Emission Zones, Limited Traffic Zones, etc.

Measures
• Enforcement scheme and control activities (L/U areas)
• Access Control System
• On road parking control
• Realization of infrastructure (UCC, sharing platform, etc.)

Towards Sustainable Urban Logistics Plan
SULP concept

A specific Plan for designing solutions within mid-term horizon and managing city logistics

SULP as key part of SUMP devoted to freight distribution processes

All the 9 ENCLOSE towns developed the SULP as part of their SUMP or as starting point for SUMP development

SULP methodology is based on the SUMP approach
ENCLOSE provide a practical methodology supporting City stakeholders in the development of SULP

**Working on:**
- Institutional and Political level
- Stakeholders, associations and citizens involvement
- Operation/Organization level
- Infrastructures/ITS level
- Economic/Business level

*with a bottom-up and participatory approach*

SULP is based on an effective Feasibility Study
SULP methodology structure

Main objectives and strategic lines
- Reference to Sustainable Urban Mobility Plan
- General city logistics context
- City logistics context, needs, opportunities and critical points
- Baseline

Identification of suitable services, measures, infrastructures

- Organisation dimension
- Business model
- Costs and energy assessment
- Responsibility and role

Planning and regulations

Consensus Process
- Local stakeholders discussions and assessment table

Promotion Plan

Road Map for SULP adoption by local Administrations
## The ENCLOSE forerunner towns for Logistics

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
<th>Area</th>
<th>Inhabitants per km²</th>
<th>Shops in Study Area</th>
<th>Pedestrian Area</th>
<th>Tourist Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucca, Italy</td>
<td>80,000</td>
<td>185</td>
<td>430</td>
<td>1,400 shops</td>
<td>Pedestrian</td>
<td>~1 Ml/year</td>
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<td>in study area</td>
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<td>inner centre</td>
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<tr>
<td>Trondheim, Norway</td>
<td>168,000</td>
<td>341</td>
<td>493</td>
<td>950 shops + Shopping</td>
<td>Pedestrian</td>
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<td>Center</td>
<td>area in the</td>
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<td>inner centre</td>
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</tr>
<tr>
<td>s’Hertogenbosch, Nederland</td>
<td>140,000</td>
<td>91</td>
<td>1531</td>
<td>500 shops</td>
<td>Pedestrian</td>
<td>(5 Ml/year)</td>
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<td>in study area</td>
<td>area in the</td>
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</tbody>
</table>
Urban Consolidation Center in ENCLOSE

Municipality Initiative: Top-Down approach

Last Mile and Cross Docking Services

UCC Final destination of transport operators and/or of shops …

City Access Rules push the transshipment, consolidation, cooperation, …

UCC productivity

At the beginning: 6 Follower Towns “fashioned” by UCC
Lucca study area for freight distribution

- 1400 shops in the historic center + S. Anna close district
- 2019 total deliveries/day (559 express, 1460 by operators)
- 746 vans/day circulating in the reference area
- each non optimized van → 2,7 deliv./trip (from 1 to 5 deliv./trip)
LUCCAPORT: the UCC of Lucca

950 m² depot, 150 m² offices, 1500 m² external area. Possibility to realize 2 floors.

Easy access: from highway and to the city center max 1 km.

There is a long history behind this choice!
- A fleet of 7 Full Electric Vans (different loading capacity and dimension)
- An average of 4 optimized trips/vehicle/day, 13 deliv./trips., 360 deliv/day
- 18% of the current total deliv./day (25% excluding express courier)

2020 target:
- a fleet of 15 Full Electric Vans, 810 deliv./day,
A “Governance” approach

- Initially managed by Metro Srl (a company which is 100% owned by the municipality), as start-up and pilot phase.
- A detailed “Management Performance Chart” has been also defined.
- Procurement for UCC management, on the basis of a specific tender. The procurement process was completed in 2015 ...
- The “service contract” regulate the relationship between Public Administration and operator contracted for UCC.

The productivity of UCC is directly related to the effectiveness access rules and enforcement measures
ENCLOSE Pilot in s-Hertogenbosch

- UCC not managed by the Municipality (UCC-ECO2CITY service)
- UCC/Operators cooperation agreement
- UCC/Shopkeepers cooperation agreement
- Coordination of the supply demand, in particular for fresh food for restaurants, bar
- Delivery by clean vehicles

Low Emission Zone
ENCLOSE Pilots in Trondheim

- Parcel distribution by different electric vans (trucks, vans, trolleys, etc.)
- Pallets distribution
- Urban Consolidation Center

Towards Zero Emission Postal Distribution
How UCC can survive?

Not only “last mile” delivery services

**Added Value Services, i.e.:**

- Third party warehousing with on-demand delivery
- Direct delivery to the retail from Suppliers/Transport Operator
- Park&buy service
- Packaging collection (reverse logistics)
- Hotel baggage collection from tourist bus
- Specific solution for “own account” transport (van sharing, burgos approach, etc.)
- Special urban quick deliveries
- Pick-up Points / Parcel lockers

... Delivery service extension to the urban surroundings
Example of Addedd value services: 7/7 h24 collection solutions for e-commerce

Pick-up Points / Parcel lockers

Some example:

- PuP managed by the operators. Not directly related to the shipper
  - DHL Packstation (started as a pilot project in 2001, n. 2,650 stations in 1,600 cities in Germany + expansion in Nederland and Italy).

- Parcel lockers selected by the e-commerce purchaser
  - InPost Parcel Lockers (n. 4,000 lockers in 820 cities)
Common problems in urban logistics
“Soft” Measures in Almada

- New Loading & unloading regulation and access time windows
- Enhance enforcement control of the vans parking
- Extension of new parking rules/regulations for commercial vehicles to all the town (new regulations only for Cacilhas district)
“Soft” Measures in Burgos

- **New regulation** (space and timing) for the historical centre access
- **Card Sharing System** for “own account” delivery/transport of shopkeepers and hostelry owners
- Towards van sharing service
### “Soft” Measures in the other ENCLOSE follower towns

<table>
<thead>
<tr>
<th>Town</th>
<th>Soft measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alba Iulia</td>
<td>Regulation by time windows, restrictions, penalties, etc.</td>
</tr>
<tr>
<td></td>
<td>Awareness Raising Campaign towards shops and transport operators</td>
</tr>
<tr>
<td>Serres</td>
<td>Awareness campaigns to the shops, operators and general users</td>
</tr>
<tr>
<td></td>
<td>Improving the visibility of (un) loading areas.</td>
</tr>
<tr>
<td>Dundee</td>
<td>Increase the enforcement levels on loading bays</td>
</tr>
<tr>
<td></td>
<td>Electric Vehicles as replacements for existing Municipality fleets</td>
</tr>
<tr>
<td>Balchik</td>
<td>Restriction of the van access during the summer season</td>
</tr>
<tr>
<td></td>
<td>Regulation by time window and space</td>
</tr>
</tbody>
</table>
SULPs developed in the 9 ENCLOSE towns

PORTFOLIO of SULP
SUSTAINABLE URBAN LOGISTICS PLAN
DEVELOPED BY 9 EUROPEAN TOWNS
FOR ENHANCING SUSTAINABLE URBAN MOBILITY

ALBA IULIA (RO)
ALMADA (PT)
BALCHIK (BG)
BURGOS (ES)
DUNDEE (UK)
’s-HERTOGENBOSCH (NL)
LUCCA (IT)
SERRES (GR)
TRONDHEIM (NO)

download: www.memexititaly.it or www.enclose.eu
An example: the City of Almada (Portugal)

- 100,000 inh.
- 2,300 shops in the reference area
- 60 tons/day of delivered freight
- Specific normative for commercial vehicles (i.e. time windows, L/U areas, etc.)
- CO2eq emission from city logistics processes = 1289 tons/y
- Energy consumption = 361 TOE/year
Urban Logistics in Almada (PT): focus on SULP measures

- Pick-up point utilizing existing structure (FLEXIBUS depot)
- Reorganization of Almada’s market area with parking the market shopkeeper vans into a nearby garage during market opening time: Micro Consolidation Centre for market
- Urban Consolidation Center (long term)
Urban Logistics in Dundee (UK): focus on SULP measures

- Fourth largest city in Scotland
- 148,000 inh.
- 67 km²
- 2,200 inh/km²
- 2 shopping center, 400 shops in the reference area
- 2000 light commercial vehicles/day
- Pedestrian streets in the inner centre

Local policies framework:
- Dundee Air Quality Action Plan (AQAP)
- Sustainability Policy for Dundee City Council
- Climate Change Framework 2008-2015
- Local Transport Strategy
Urban Logistics in Dundee: focus on SULP measures

Dundee SULP objectives:
• more energy efficient logistics;
• reductions in the adverse environmental impact of freight operations;
• the City Council showing leadership in reducing the environmental impact of the Council’s fleet

SULP Measures
SHORT TERM (2015-2017)
• introduction of ECOStars environmental fleet recognition scheme for vans, lorries, buses, etc.
• development of web-based information on lorry routing
• use of electric powered Dundee City Council vehicles.

MEDIUM TERM (2018-2023)
• Carriage of Customer Purchases on Park & Ride Buses
• Further development of web / app / Sat Nav based information for freight/logistics operators in Dundee
• Urban Consolidation Centre
Urban Logistics in Alba Iulia (RO): focus on SULP measures

• 68.000 inh.
• 103 km²
• 655 inh/km²
• 100 shops in the study area (Transilvaniei Blvd.)
• 50 commercial vehicles/day
• Pedestrian streets

Local policies framework:
• Sustainable Energy Action Plan (SEAP)
• Plan for "Re-functionalisation of the area around the blocks of flats on the Romans’ Plateau in Alba Iulia"
Urban Logistics in Alba Iulia (RO): focus on SULP measures

SULP Measures

SHORT TERM
• PPP for the implementation of small proximity delivery centres (Micro-UCC for Transilvanya Blvd)
• Rules to incentive the adoption of cargo bikes and electric vans
• Night deliveries

MEDIUM / LONG TERM
• Road Tax implementation system
• Urban Consolidation Centre, adapting already existing old infrastructures
Some general considerations

- EU pushes CO2 free logistics by 2030 … without considering real situation of the Cities especially in SMHT.
- City Logistics is an ongoing process with good practices and some failures …
- Existing many catalogs/portfolio of solutions and experiences…
- Many different models, schemes and services pushed also by a second generation of ICT and mobile tools (sharing schemes)
- It needs to understand the **key factors** which can **block or enable** the success of the measure realization
- Simple and soft measures are to be considered in any case

**SULP at City Level is necessary**
SULP in practice: some common sense considerations

SULP implementation can be a gradual process depending on the needs and characteristics of the town.

SULP can’t require advanced systems or heavy infrastructures or making great investments but use the existing infrastructure, technologies …

SULP can work firstly on city regulations in terms of parking and access policy.

SULP shall act incentives for the adoption of clean vehicles, sharing/pooling schemes …not forgetting the “own account”

SULP should create a permanent forum among the different social/economic actors and with the other Authority level.

KEEP IT SIMPLE !!!
download from

www.memexitaly.it

Thanks for your attention
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