



City of
Ljubljana

CIVITAS FORUM 2015

CIVITAS ANNUAL CONFERENCE | 7-9 OCTOBER 2015 | LJUBLJANA



Sustainable Urban Logistics Plans (SULP) Guidelines

G.Ambrosino, A.Liberato, I.Pettinelli

Presented by: Antonio Liberato
MemEx

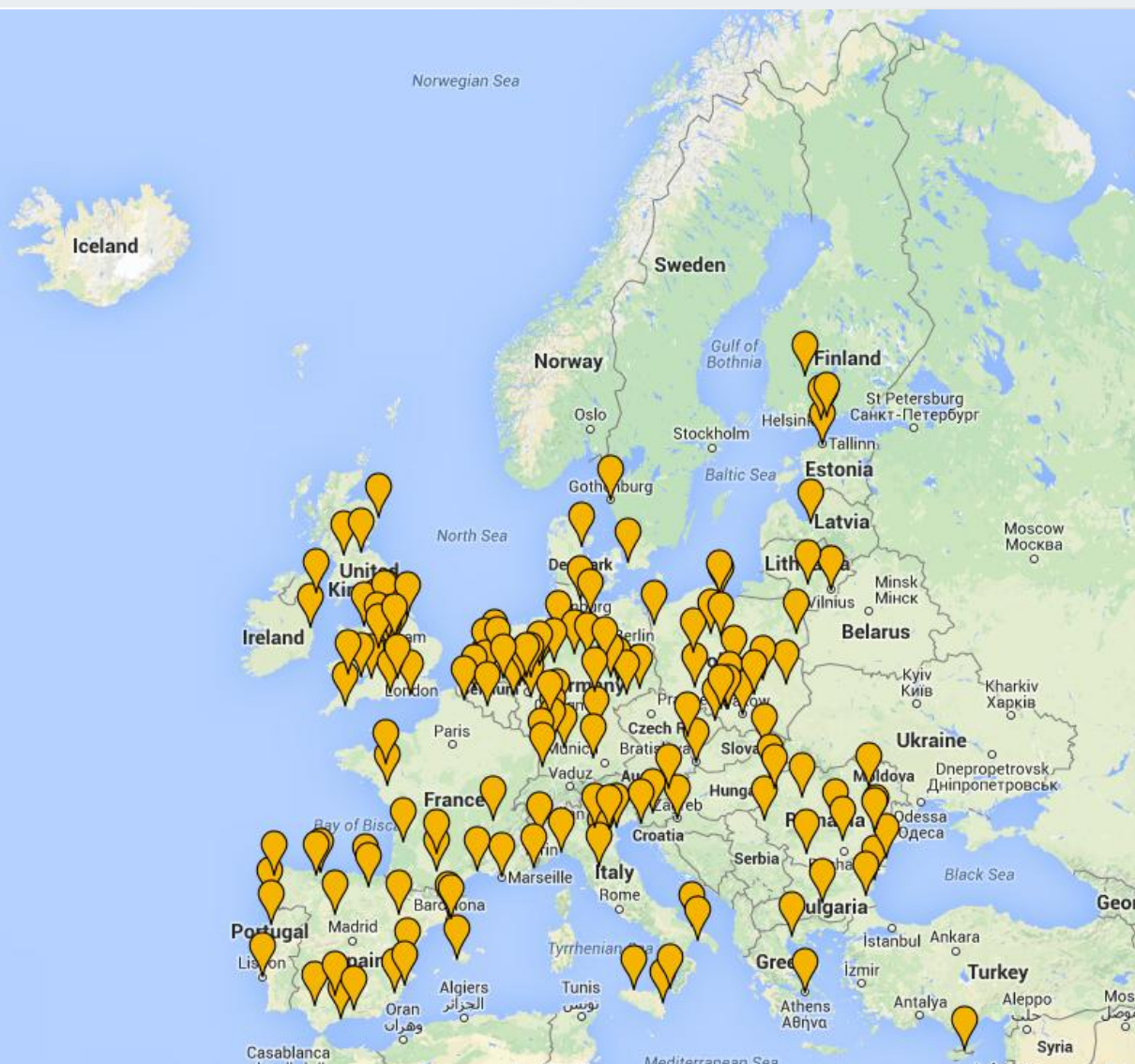
IEE ENCLOSE Project Coordinator
Member of Logical Town Association Board



THE CIVITAS INITIATIVE IS CO-FINANCED BY
THE EUROPEAN UNION

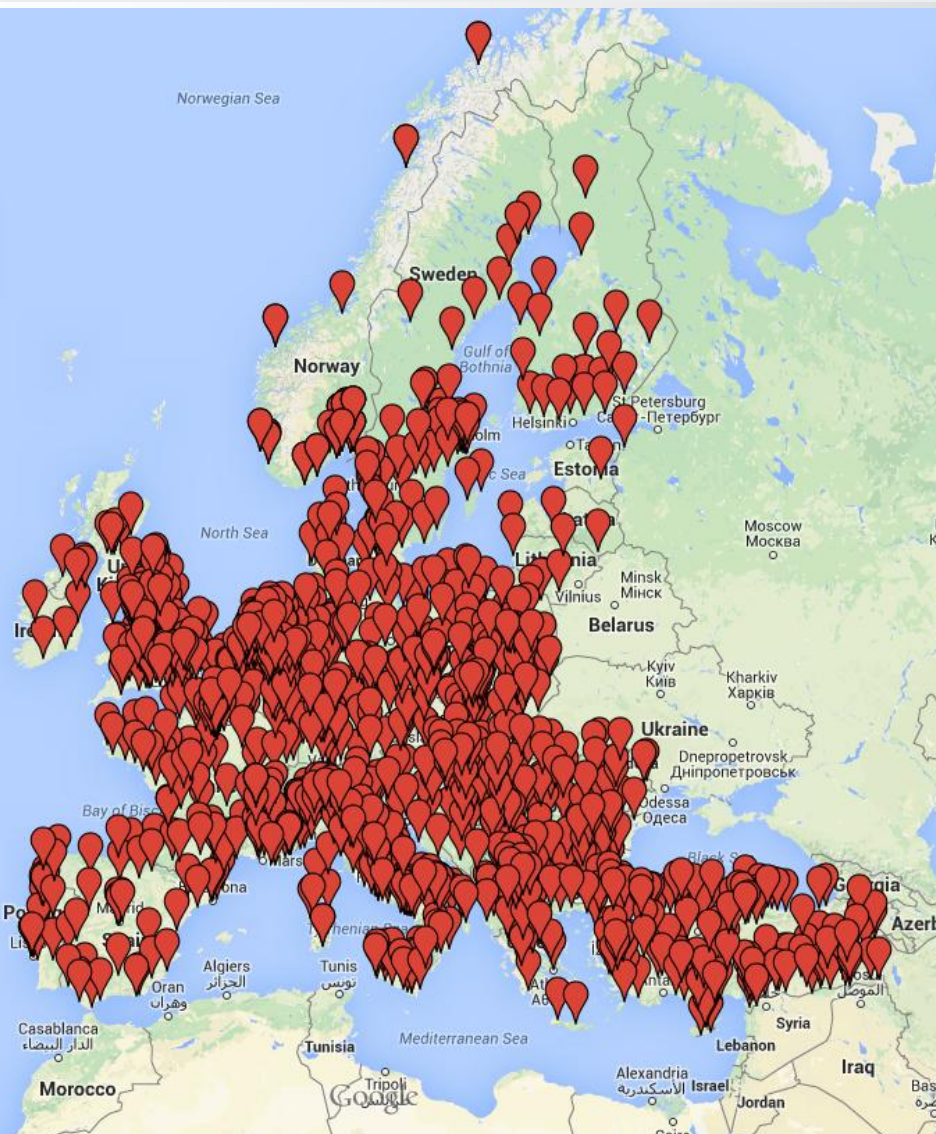


European cities dimension



**180 cities and
towns with more
than 200 thousands
inhabitants**

European cities dimension



1364 cities and towns with more than 40 thousands inhabitants

N: Rovaniemi, Finland

S: La Laguna (Canary Islands), Spain

E: Yüksekova, Turkey

W: Ponta Delgada (Azores), Portugal

Freight Distribution in Small and 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

... with higher impacts

(pollution, emissions, etc.)

and higher costs of logistics operation



IEE-ENCLOSE Project

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

- Intelligent Europe Energy Programme
- Starting date: May 2012
- Project End: October 2014
- Project Coordinator: MemEx (Italy)
- 16 partners from 13 EU Countries including 9 Towns

*Lucca, Trondheim, s'Hertogenbosch,
Burgos, Almada, Dundee, Albalulia,
Serres, Balchik*



City of
Ljubljana

CiViTAS FORUM 2015
CIVITAS ANNUAL CONFERENCE | 7-9 OCTOBER 2015 | LJUBLJANA



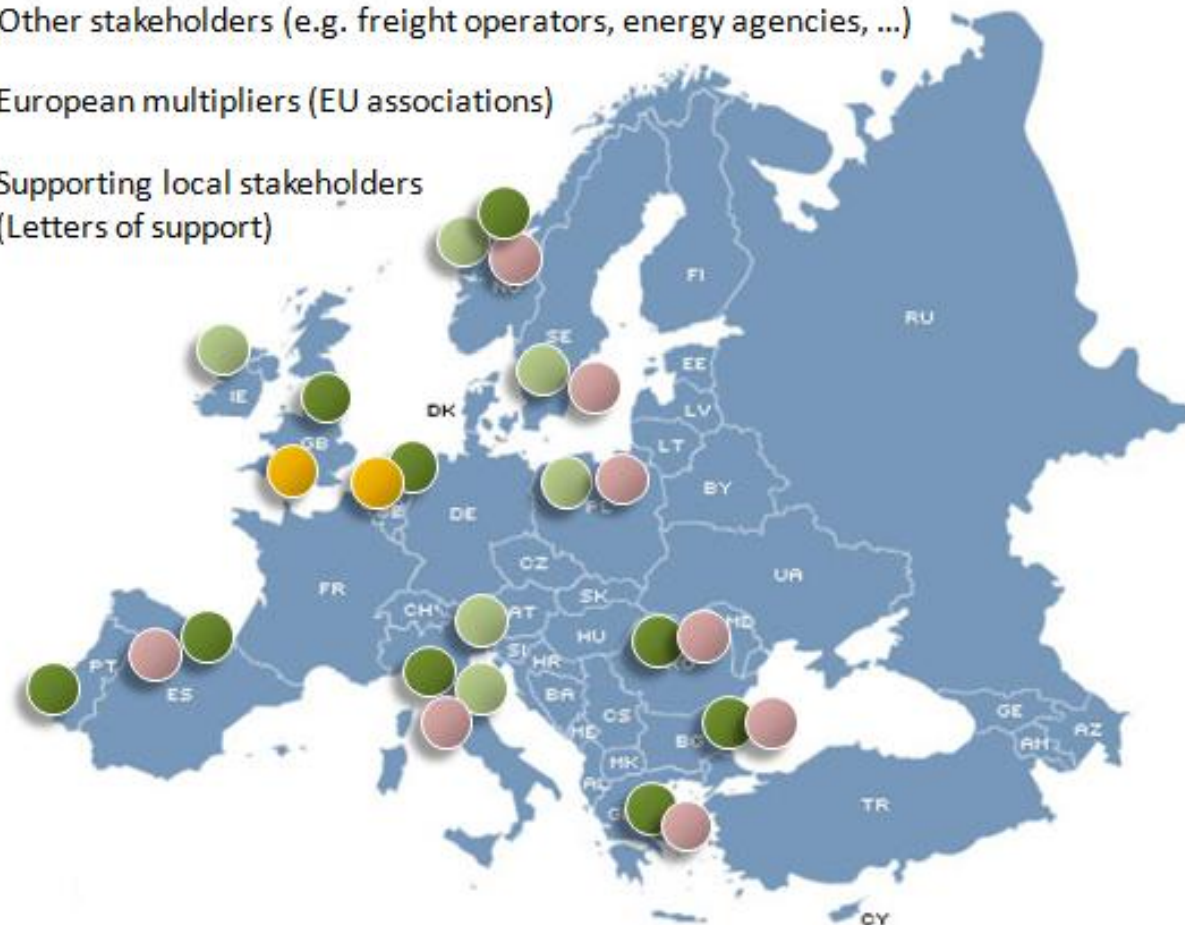
THE CIVITAS INITIATIVE IS CO-FINANCED BY
THE EUROPEAN UNION

The ENCLOSE partners and countries

16 partners
13 EU countries

Austria
Bulgaria
Greece
Ireland
Italy
Norway
Poland
Portugal
Romania
Spain
Sweden
The Netherlands
UK

-  Towns (Forerunner, Follower/Learner)
-  Other stakeholders (e.g. freight operators, energy agencies, ...)
-  European multipliers (EU associations)
-  Supporting local stakeholders (Letters of support)



Implementation and operation of

- ✘ **Pilot operations** in 3 SMHTs: Italy (Lucca), Norway (Trondheim), The Netherlands (s'Hertogenbosch);
- ✘ **Feasibility and transferability analysis** and **Soft measures** in 6 SMHTs: Spain (Burgos), Portugal (Almada), UK (Dundee), Romania (Alba Julia), Greece (Serres), Bulgaria (Balchik)

Development of

- ✘ **Feasibility Study** in 6 Follower Towns
- ✘ **FEV requirements** for Urban Logistics services
- ✘ **Sustainable Urban Logistic Plans** (SULPs) in the overall 9 ENCLOSE towns

Building

- ✘ **a common methodology for the development of SULPs for European SMHTs integrated with Sustainable Urban Mobility Plans**

ENCLOSE Pilot services in Forerunners Towns



Lucca, Trondheim, s-Hertogenbosch

Lucca – pilot measures

- B2B services for freight operators concerning the provision of palletized goods transportation to businesses with EV;
- B2B services for local businesses concerning the provision of forwarding services toward any destination outside the target area, operated by EV, in partnership with other national or international freight operators (reverse logistics processes);
- Freight operations integrated with leisure mobility, operated by EV: delivery services for tourists and travelers (park&buy), luggage transport to/from hotels, etc.







Trondheim – pilot measures

- Mail distribution (large and small envelopes) in Trondheim city center by using electric-vehicles replacing 5 diesel vehicles.
- Parcel distribution in Trondheim city center by using electric and hybrid vehicles replacing 5 diesel vans.
- Pallets distribution in Trondheim city center and transport between Trondheim city center and Trondheim Post terminal by using electric and hybrid vehicles replacing 1 diesel truck .

s'Hertogenbosch – pilot measures

- Set up of specific partnership agreements (B2B) between shopkeepers, transport companies and other stakeholders aimed at improving the efficiency of town delivery services by using biogas or CNG vehicles;
- Demonstrating and enhancing the use of fully electric busses for transport of people with bulky purchases;
- Town delivery services using biogas vehicles.

ENCLOSE Soft measures in follower sites

	Alba Julia Rumania	Almada Portugal	Balchick Bulgaria	Burgos Spain	Dundee UK	Serres Greece
						
Soft measures in ENCLOSE follower towns	Regulation in the Transylvania. Boulevard area of commercial vehicles time windows, restrictions for high capacity vehicles, penalties for no respecting the rules, etc.	Create a loading & unloading regulation	Limitation of the vehicles' access to the coastal area. Limitation of the space accessibility of the logistics and public transportation as well as private cars during the touristic season	New regulation for the historical centre access, with special processing for loading-unloading tasks	Increase the enforcement levels of loading bays within the city centre	Awareness campaigns to the shopkeepers, transport operators and general public regarding the need to respect the city logistics policy
	Organizing an Awareness Raising Campaign involves a partnership between the Municipality and the media	Loading & unloading timeframes	Time limitation of the vehicles' access to the near coastal area, as well as to other heavy trafficked ways. Limitation of the time accessibility of the logistics and public transportation as well as private cars during the touristic season.	Card system on loading and unloading for shop owners and hostelry owners (for non-labelled vehicles).	The council intends to procure 39 Electric Vehicles as replacements for existing Diesel/ Petrol vehicles	Improving the visibility of the (un)loading areas. Increasing the number of these places according to the shop keepers' needs. Development of a booking platform in order to properly assign these areas to the transport operators.

Regulation

- Access restriction rules (e.g. in relation to goods/days/times, Low Emission Zones, Limit Traffic Zones etc.)
- Enforcement scheme and control activities (L/U areas)
- Access Control Systems
- Specific rules for “green vehicles”



Policy and measures

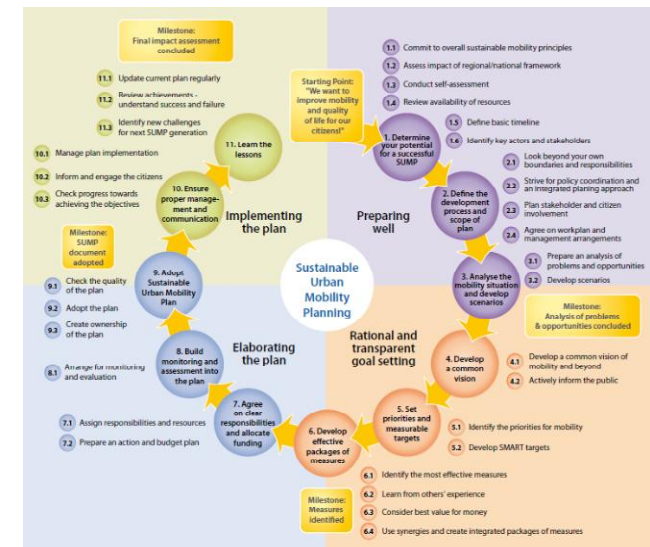
- Specific objectives (Reduction of freight vehicle trips, Reduce environmental impact, increase effectiveness and load factors, etc)
- Quality certificates / permits schemes
- Set-up of logistics infrastructure (UCC, sharing platform, etc)
- Provides incentives for e.g. FEVs, PHEVs

Sustainable Urban Logistics Plan

A specific Plan for designing solutions within mid-term horizon and managing urban freight processes

SULP as key part of SUMP devoted to city logistics

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



Sustainable Urban Mobility Plan

SULP methodology was defined following the SUMP approach

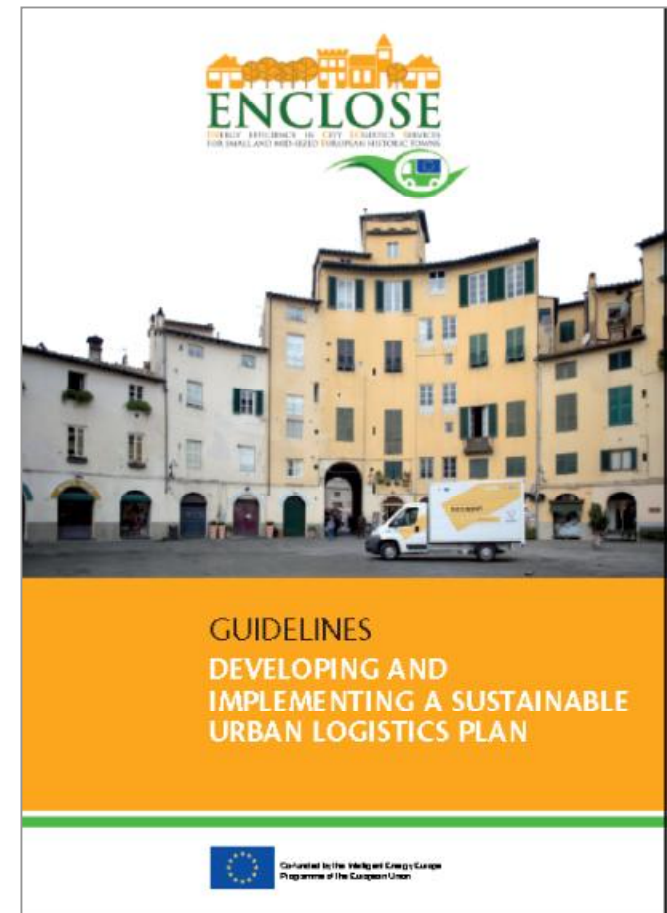
ENCLOSE provides a practical methodology supporting City stakeholders in the development of SULP

Working on:

- Institutional level and Political level
- Involvement of stakeholders, associations and citizens
- Operation/Organization level
- Infrastructures/ITS level
- Economic/Business level

with a bottom-up and participatory approach

SULP is based on an effective
Feasibility Study



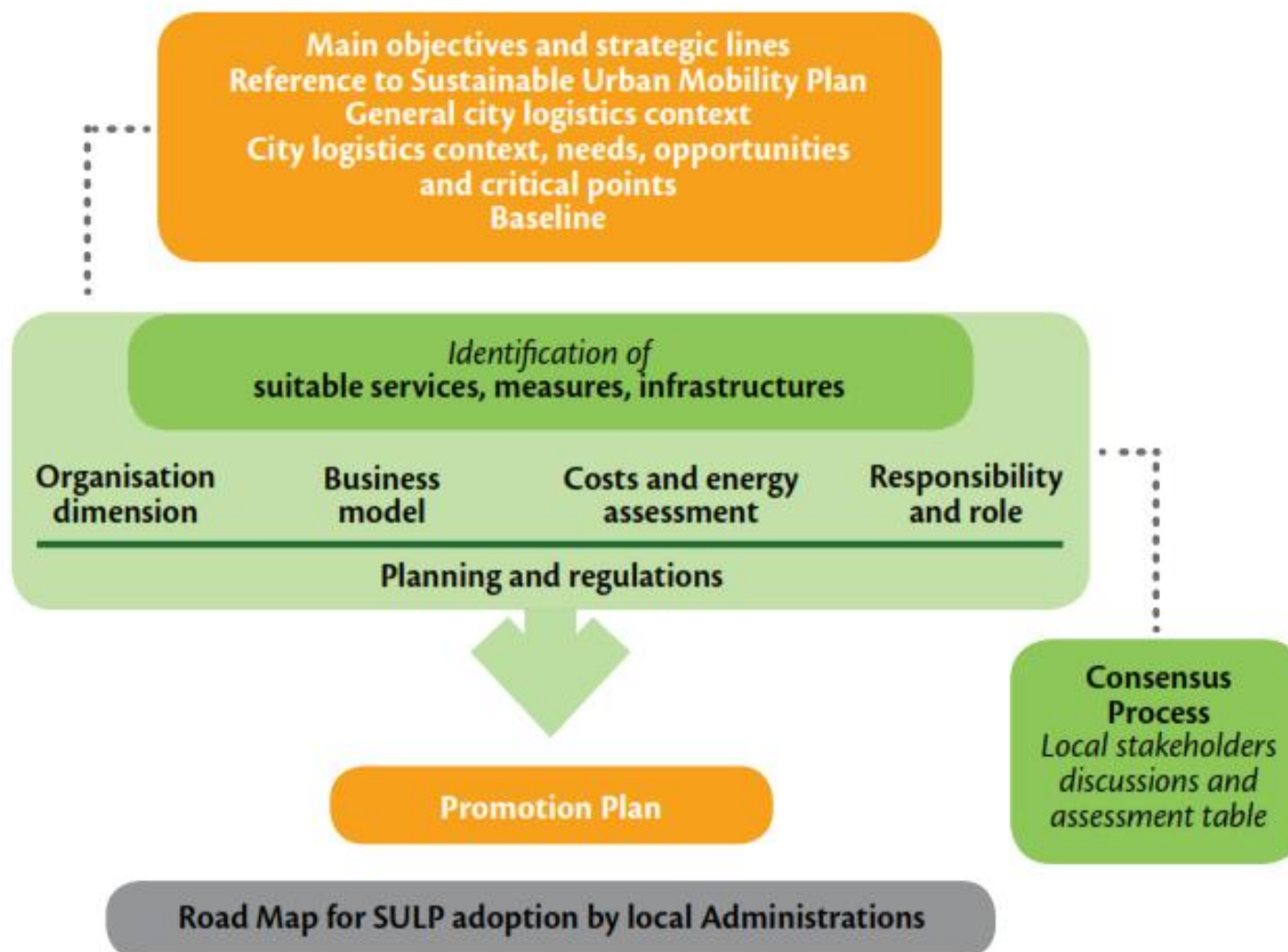
A specific Plan for managing city logistics processes and designing solutions within mid-term horizon

- A tool to defining the common vision, needs and priority lines
- A tool for designing a set of suitable measures/solutions/services
- A tool for reducing air and noise pollution, energy consumption
- A tool for creating a consensus among different stakeholders
- A tool for defining a road map for a possible adoption at Institutional Level

SULP methodology was defined following the SUMP approach
“Developing and implement Sustainable Urban Mobility Plan”

ELTISPLUS Project - January 2014

SULP methodology structure



The Sulp 11 elements



- E0 - Setting the objective and target
- E1 - Urban mobility scenario and priorities
- E2 - Analyze the logistics context and processes
- E3 - Setting requirements and logistics baseline
- E4 - Suitable measures and services vs. reqmts
- E5 - Design of Identified solutions
- E6 - Business Model, actor role and responsibility
- E7 - Services/Solutions Assessment and Impacts
- E8 – Responsibilities, implementing plan
- E9 - Promotion and Communication Plan
- E10 - Roadmap to adopt the Sulp

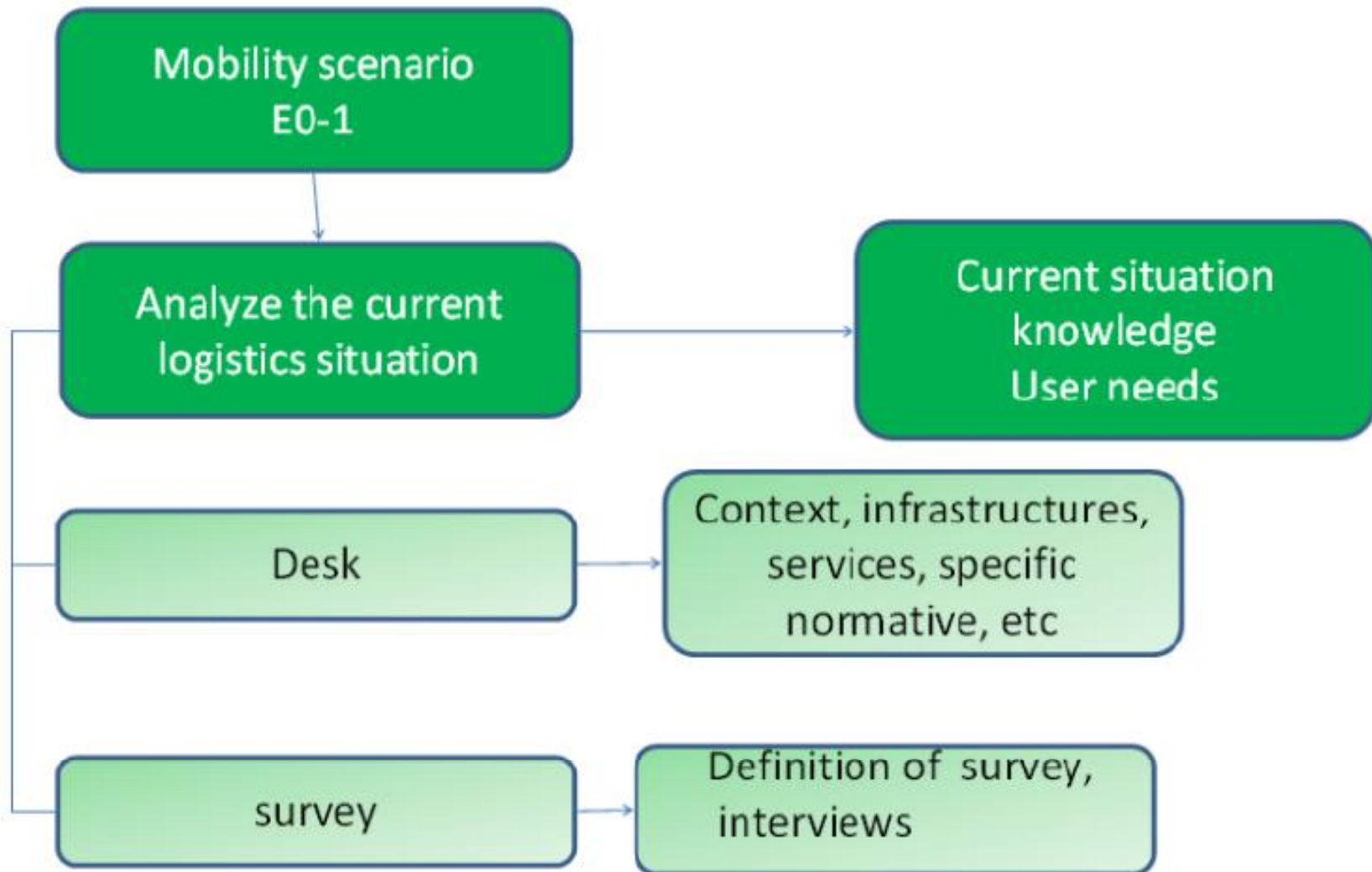
Each ELEMENT is described in terms of

- Rationale
 - Tasks and timings
 - Methods
-
- Boxes: examples coming from the work carried-out in the 9 partner towns for the implementation of their SULPs

Details of Elements

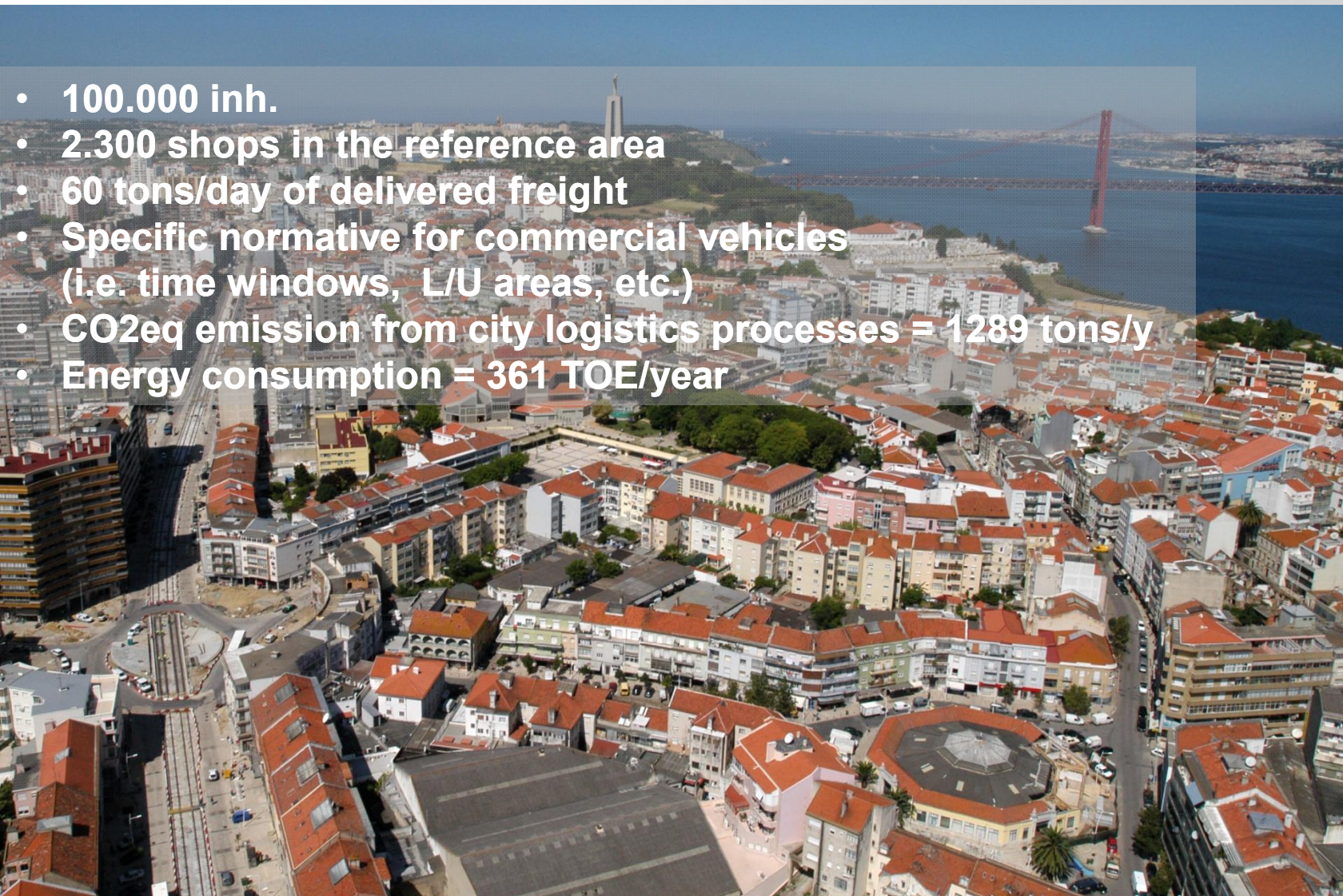


E2: Analyze the logistics context and processes



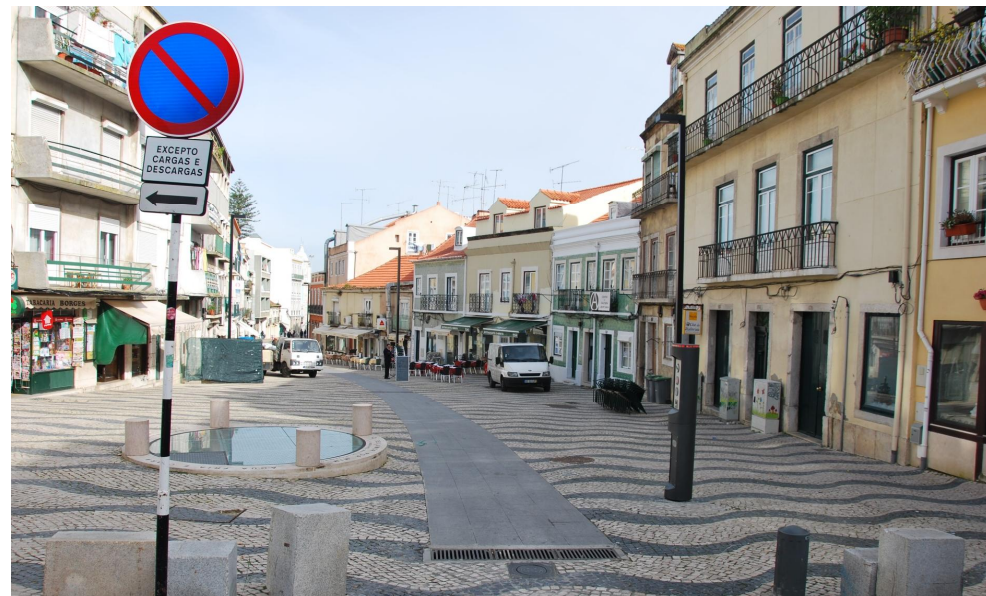
An example: the City of Almada (Portugal)

- 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: brief characterization

- Municipal Regulation for loading/unloading (Under revision)
- Loading/unloading places marked on the pavement
- Schedules and time windows for logistics operations
- Maximum parking time: 15 min.
- Pedestrian areas with access restrictions and a 20 km/h zone city centre
- 500 freight vehicles/day circulating in the reference area + private vehicles in self-supply
- 2000 total deliveries/day

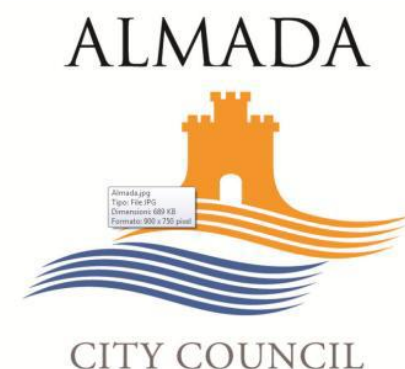
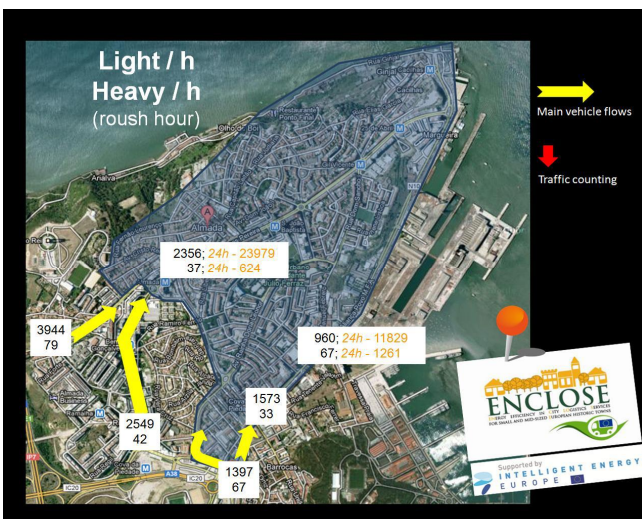


Urban Logistics in Almada

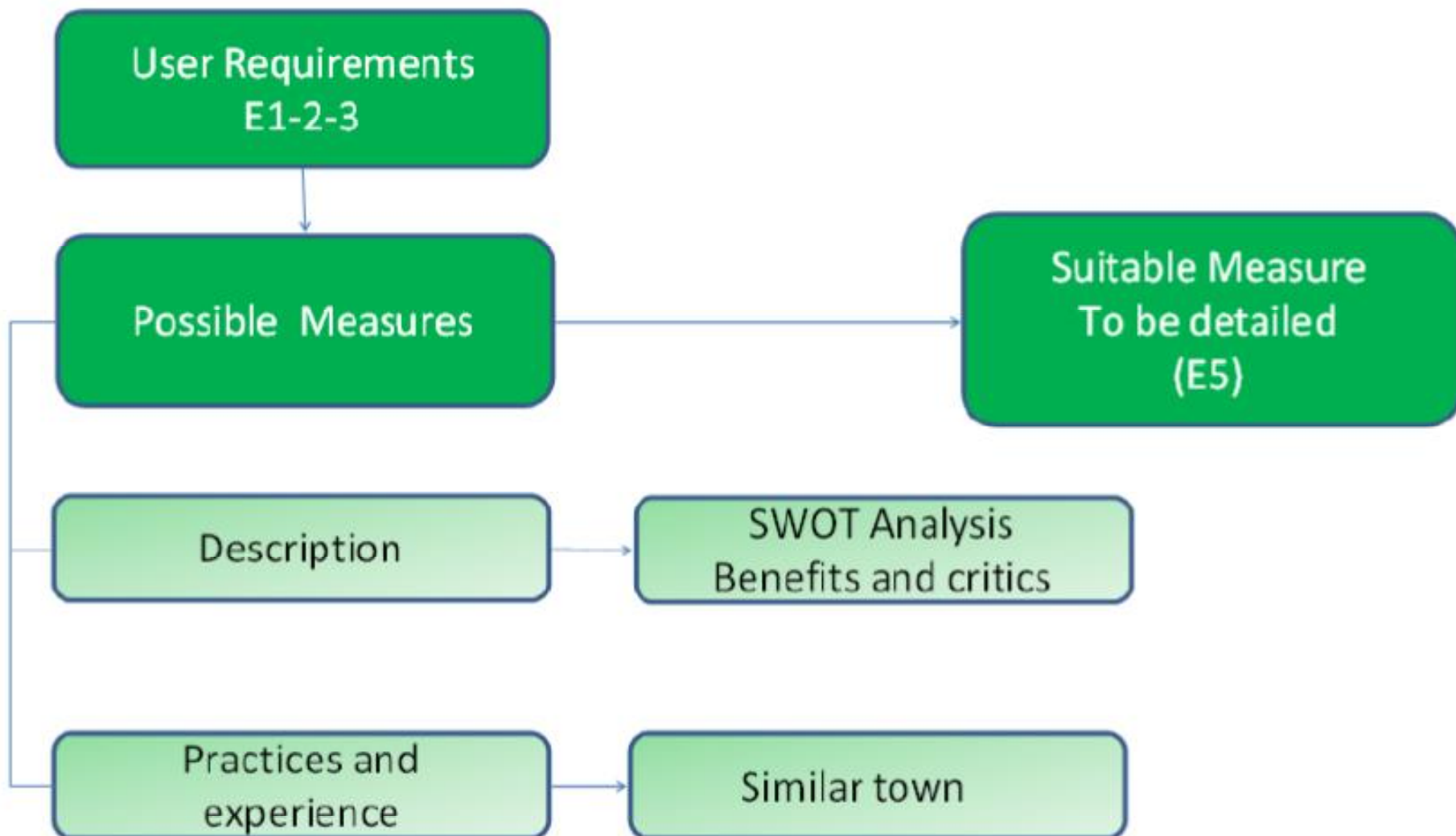
Inefficiencies and problems identified

- Logistic operators: the majority does not know the Municipal Regulation
- Not enough I/u parking lots
- Insufficient marking of I/u parking lots
- Abusive occupation of I/u parking lots: more effective control required
- High level of self-supply
- Trucks to supply supermarkets in the city centre





E4: Identified measures and services vs requirements



Urban Logistics in Almada

ENCLOSE: candidate 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
- **Extension of new parking rules/regulations for commercial vehicles** to all the town (new regulations only for Cacilhas district, at the moment)
- **Micro Consolidation Centre for market**
- **Urban Consolidation Center**



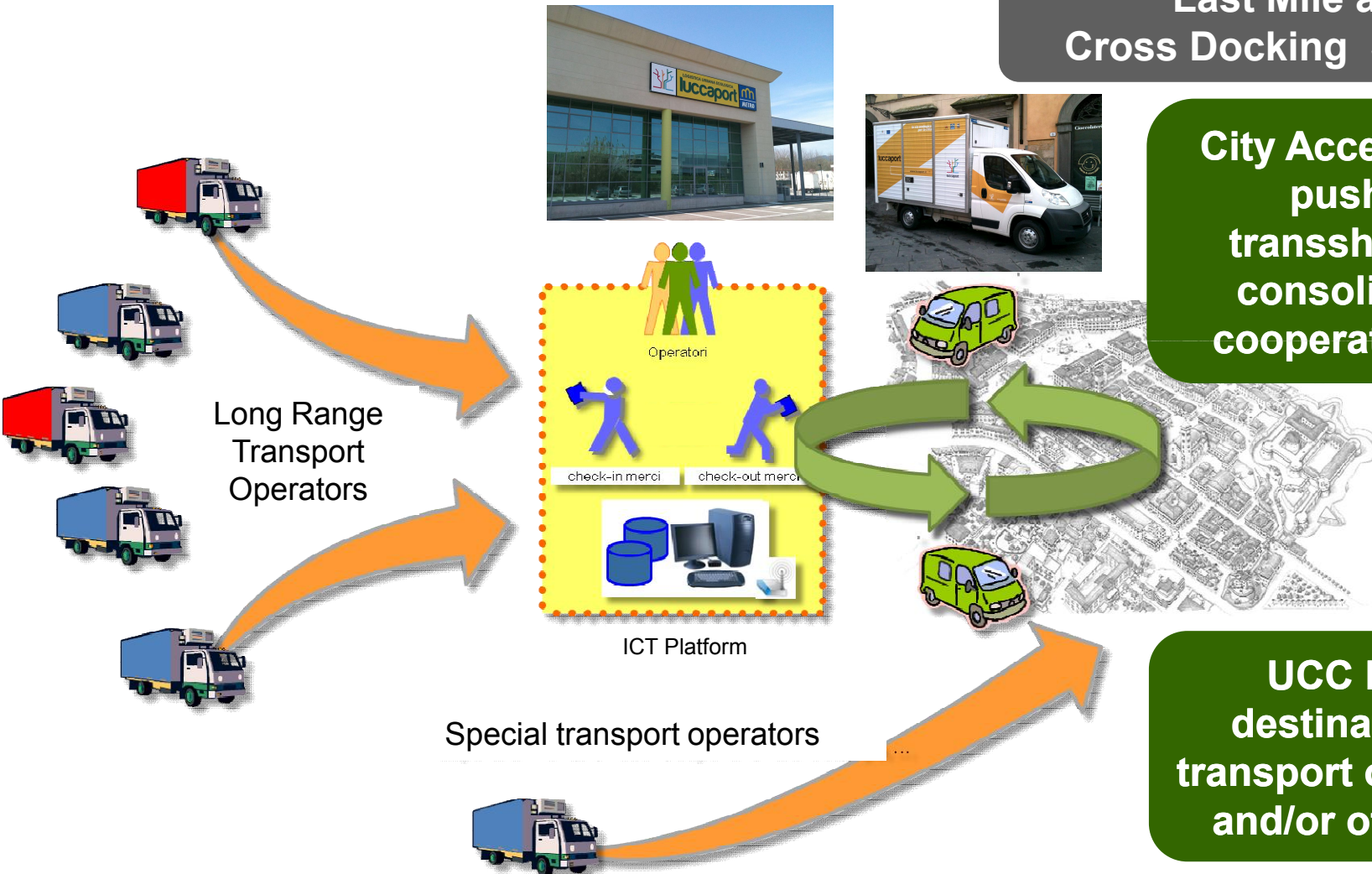
Urban Consolidation Center in ENCLOSE

Municipality Initiative: top down approach

Last Mile and Cross Docking Services

City Access Rules
push the
transshipment,
consolidation,
cooperation, etc.

UCC Final
destination of
transport operators
and/or of shops



ENCLOSE: candidate measures

Urban Consolidation Centre in Almada

Easily accessible and fairly close to the city centre (2,5 km)

Platform for load consolidation

- Warehouse of 600 m² (including a small office and facilities)
- Minimum external area of 500 m²
- Initial fleet of 2 electric vans
(3,5 t mgw: 1,1 to 1,2 t of loading capacity, operating on distances up to 100 km full-load)

Added Value services

- Home delivery services
- Special destination
- Reverse logistics



How UCC can survive ?

Not only “last mile” delivery services

Added Value Services, i.e.:

- Third party warehousing with on-demand delivery
- Direct storage from Suppliers
- Park&buy
- Packaging collection (reverse logistics)
- Hotel baggage delivery for tourist bus
- Specific solution for “self supply”
- Special urban quick deliveries
- Out of hours deliveries

... delivery service extension to the urban surroundings



Investment Costs

Infrastructures and equipment: € 290 000,00

Operative Costs

Staff, vehicle renting, depreciation, energy, etc.: 200 000,00 €/year

Operational Assumptions

- Revenue of 6 €/delivery (up to 100 kg);
- 8 trips/day x 300 days/year x 6 € = 14.000 €/year
(yearly income for each vehicle making 1 delivery/trip)

Almada UCC will be **economically sustainable if an average number of 120 deliveries/day** can be ensured.

A lower level of deliveries could be sustainable, if additional services are introduced.

Urban Logistics in Almada

UCC management hypothesis

At the beginning

a full public (Municipal) management (in a direct way or by means of a Municipally-owned Company – i.e. ECALMA) is to be preferred

At a later stage

one of the following solutions can be adopted:

- **“In house” company**; a structure belonging to the Public Administration (public owned company), entrusted with service management
- **Public-private partnership**
- **Service procurement partnership**
Approach based on a public tender and on a relevant “service contract” regulating the relationship between Public Administration and Private Company. In this case a detailed “Management Performance Chart” for UCC management should be defined

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

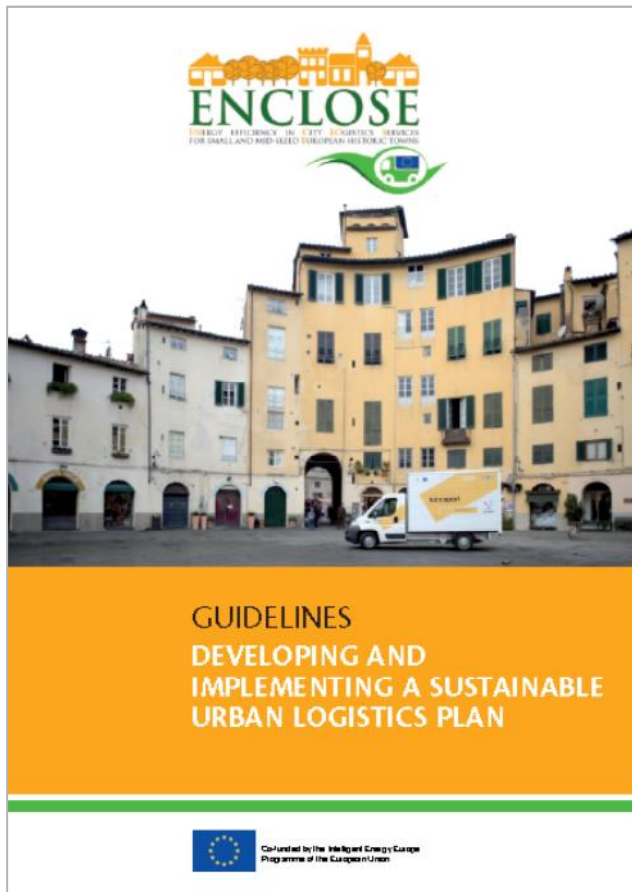
SULP cannot require advanced systems or heavy infrastructures or making great investments but use the existing infrastructure, technologies, ...

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

SULP shall foresee incentives to foster the adoption of clean vehicles, sharing/pooling schemes (not forgetting the “self supplying”)

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

CONTENTS



1. Purpose of the SULP guidelines
2. Introduction
3. Urban Mobility Governance
4. City Logistics in European SMHT
5. Sustainable Urban Logistics Plan (SULP)
6. Logistics services: needs, challenges and benefits
7. "Soft & Hard" measures reference context
8. Methodology Elements
9. SULP Integrated with SUMP



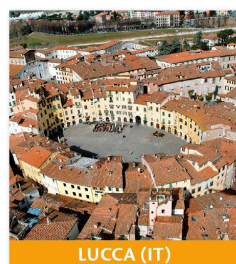
PORTFOLIO of Sulp

DEVELOPED BY 9 EUROPEAN
TOWNS FOR ENHANCING
SUSTAINABLE URBAN MOBILITY

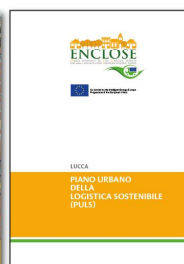


Co-funded by the Intelligent Energy Europe
Programme of the European Union

Edited by: **Giorgio Ambrosino** MemEx, Italy



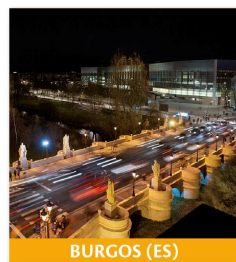
LUCCA (IT)



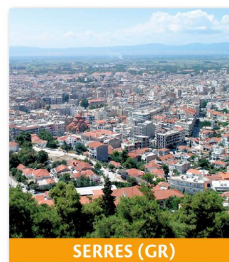
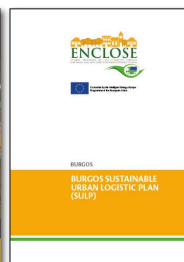
TRONDHEIM (NO)



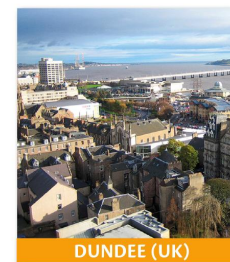
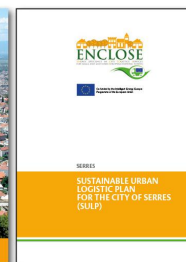
'S-HERTOGENBOSCH (NL)



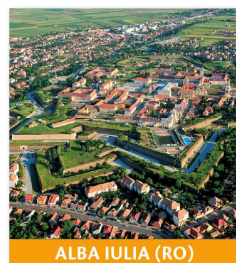
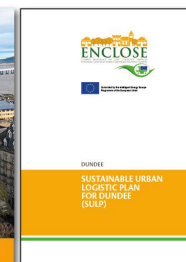
BURGOS (ES)



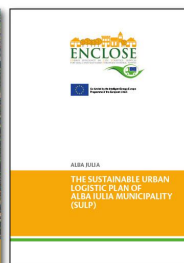
SERRES (GR)



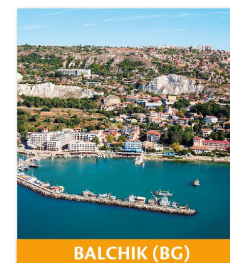
DUNDEE (UK)



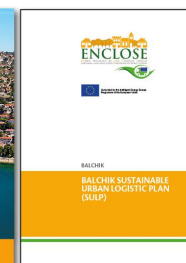
ALBA IULIA (RO)



ALMADA (PT)



BALCHIK (BG)



ENCLOSE website - www.enclose.eu

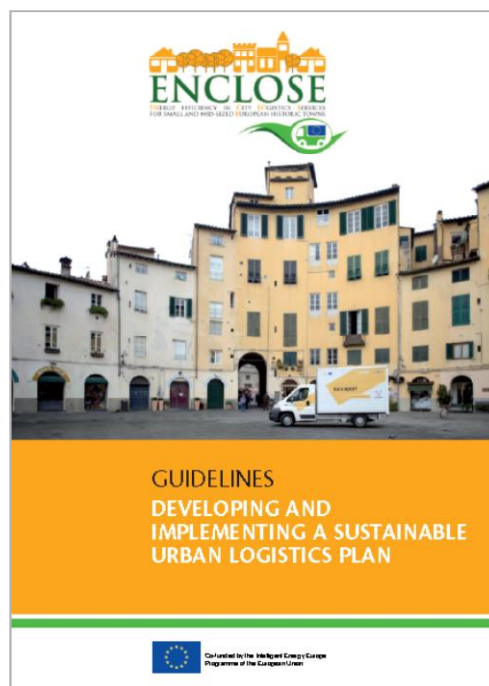


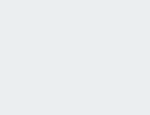
City of
Ljubljana

CiViTAS FORUM 2015
CIVITAS ANNUAL CONFERENCE | 7-9 OCTOBER 2015 | LJUBLJANA



download from
www.memexitaly.it





City of
Ljubljana

CIVITAS FORUM 2015
CIVITAS ANNUAL CONFERENCE | 7-9 OCTOBER 2015 | LJUBLJANA

Thank you!

Antonio Liberato

Contact Details

MemEx Srl

Via Cairoli, 30

57123 Livorno (Italy)

antonio.liberato@memexitaly.it

giorgio.ambrosino@memexitaly.it

www.memexitaly.it



THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

- 
- 87.373 inh.
 - about 1,0 M tourist/year
 - 1400 shops in the reference area
 - 2019 total deliveries/day (559 express, 1460 by operators)
 - Network of historic narrow streets
 - Wide of LTZ (mostly pedestrian), with specific restriction for commercial vehicles
 - 1680 vehicle/days
(deliveries operated by 746 vans + 85 3,5t vans)
 - 2019 total deliveries/day by 700/800 vans
each non optimized van → 2,7 deliv./trip (from 1 to 5 deliv./trip)
 - CO₂eq emission from city logistics processes = 778 tons/year
 - Energy consumption = 2.9 M kwh/year



- Located inside the old “fruit market” infrastructures, owned by the Municipality
- In operation from 2008 to 2011.
- Managed in collaboration with a subcontracted local transport operator
- Set-up and demonstration funded by CEDM Project (LIFE ENV Programme)



An institutional top-down approach

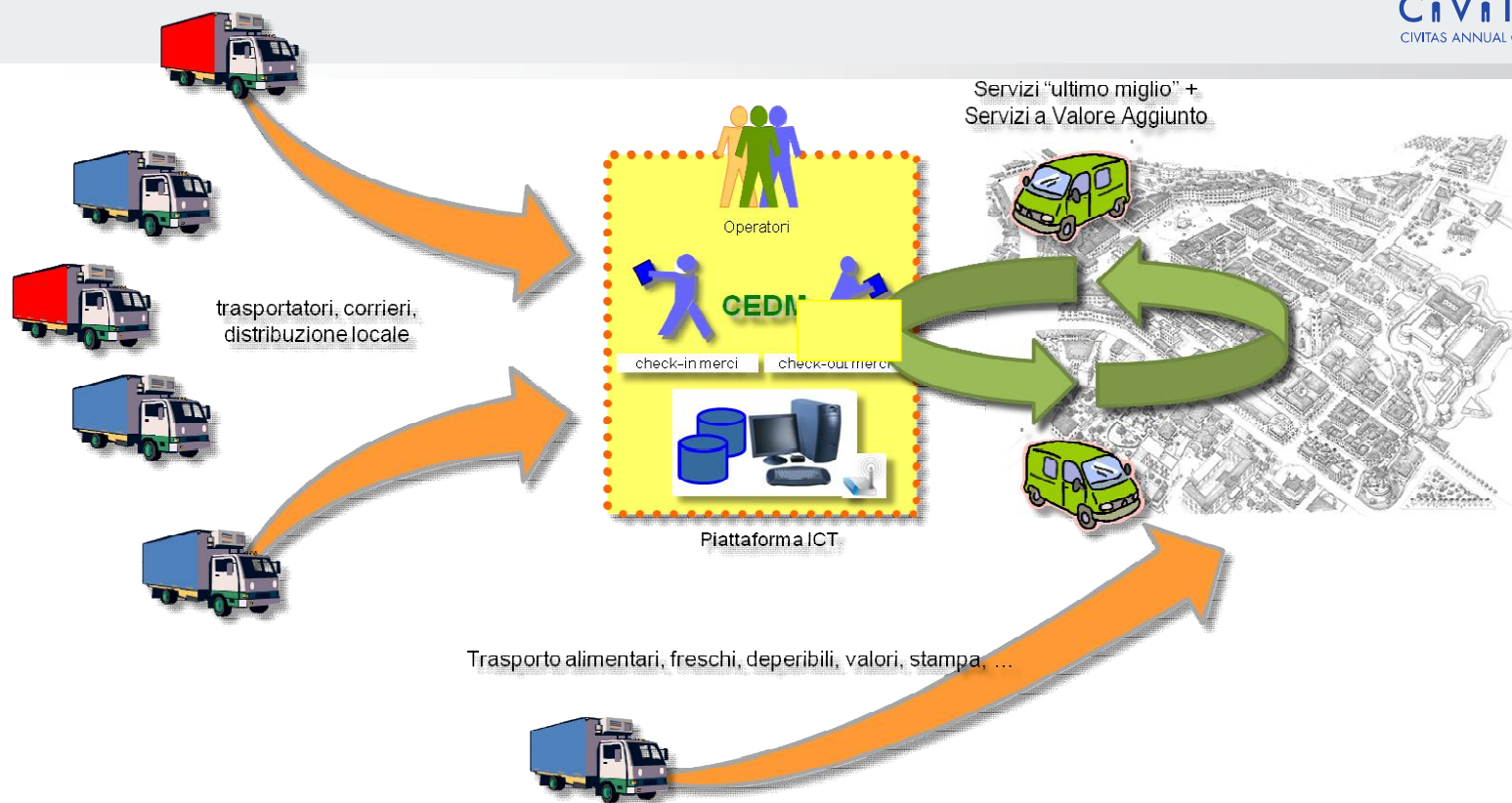
- Built by the Municipality (2010-2011) in the framework of an urban development plan and funded with the urban planning fees paid by private companies building warehouses in the same area (no real costs for the Municipality).
- Support infrastructures, and electric vehicles fleet, funded by different EC, National and Regional programmes.
- In operation since 2011.
- Managed by Metro Srl (a company which is 100% owned by the municipality), as start-up and pilot phase.
- A call for tender procedure to award the management of the logistics services, on the basis of a specific “Service Contract” (drafted by the Municipality) is to be launched in the next months.
- The “service contract” regulate the relationship between Public Administration and operator contracted for UCC. A detailed “Management Performance Chart” will be also defined.

- **Contract between Municipality of Lucca and “contracted operator”**
- “Contracted operator” manage the Logistics services and will have the right to use the infrastructures, technologies and all tools for the UCC
- Municipality can act on the UCC for the extension of business and obtaining funds
- The last mile services must be carried out with zero emission vehicles
- “Contracted operator” must guarantee the service respect the market standards and quality indicators directly and/or with sub contractors
- “Contracted operator” must guarantee the UCC operation and maintenance and all the accessibility services
- “Contracted operator” must guarantee the services vs. the market tariff
- “Contracted operator” must guarantee all the maintenance, operation, expenditures
- “Contracted operator” can subcontracting all or in part the services
- “Contracted operator” can make 2 promotion campaign and customer satisfaction survey and quality and quantity indicators,





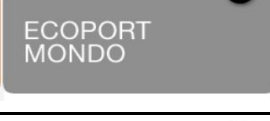

- A fleet of 7 Full Electric Vans (different loading capacity and dimension).
- An average of 4 optimized trips/vehicle/day, 13 deliv./trips., 360 deliv/day
- 18% of the total deliv./day (25% excluding express courier) currently operated

2020 target → a fleet of 15 Full Electric Vans, 810 deliv./day,
with an expected CO₂eq emissions reduction of 48%





In addition LUCCAPORT could also operate a **cross-docking** service scheme: the transshipment takes place at national transport operator premises, nearby the UCC. The freight are collected there by the UCC driver, and then directly delivered to the final destination.

	"Last mile" delivery services
	Third party warehousing with on-demand deliveries
	Deliveries of luggages to the hotel from tourist bus parking area
	Special urban quick deliveries
	National and International deliveries (in collaboration with main transport operators)
	Heavy goods deliveries for citizens
	Special transport for antiquities market operators

Cost of infrastructures (warehouse): Municipality

Operative Costs

Vehicle depreciation: 45.000 €/year

Technical infrastructures depreciation: 5.000 €/year

Energy: 12.000 €/year

Personnel: 28.000 + 145.000 (drivers) = 175.000 €/year

Other Costs: 38.000 €/year

Total operative costs: 275.000 €/year

Considering a number of 90.000 deliv/year

Breakeven point: 3,05 €/deliv (up to 100 kg)

In line with a final cost of 6,00 €/deliv. representing the national average fare for such kind of services

A low level of deliveries could be sustainable introducing the added value services.

- 55.000 inh.
- 17.000 university students
- about 3,0 M tourist/year
- Network of historic narrow streets with high gradients
- Wide of LTZ (mostly pedestrian), with specific restriction for commercial vehicles, controlled by access control system
- 750 shops in the reference area
- 150/160 tons/day of freight deliveries
- 450 vehicle/days





First small depots (60 sqm) 1992 -1999
4 associated partners (freigh taxi licenses)
4 conventional (diesel) vans

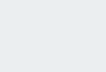
New logistics base (500 sqm)
in operation from 2000 to 2011
Up to 12 associated partner (freight taxi licenses)
12 conventional (diesel) vans



A bottom-up approach (Pure market-driven business)

- Since 2012: new 2000 sqm warehouse, equipped with freeze depots.
- 18 associated partner (taxi licences) under COTAS LOGISTICA Srl
- Last mile services
- Agreement with main national operators (i.e. TNT, DHL, Bartolini, Artoni, ...) for cross docking operations.
- New added value services provided:
 - bulky service,
 - third party warehouse,
 - hotel service,
 - fresh food and beverage distribution
 - reverse logistics (packaging collection)
- Delivery not only in the inner center but also in the overall Siena Province

- Fleet of 18 commercial vehicles (2 FEVs)
- 3 employees at the warehouse
- 450/500 freight deliveries/day (25% of the total in the inner centre)
- Fare of a delivery (up to 100 kg) for freight consigned at UCC by sender = € 6,00
- Cross docking procedure, agreement with main transport companies = € 4,00
- Economic sustainability thanks to the operated added value services and deliveries in the overall Siena province.
- Annual turnover of 2.0 M€ (0,5 M€ related to city logistics processes)



City of
Ljubljana

CiViTAS FORUM 2015

CIVITAS ANNUAL CONFERENCE | 7-9 OCTOBER 2015 | LJUBLJANA

