SMART-MR
Interreg Europe

European Union
European Regional
Development Fund

3RD INVENTORY

Low Carbon Logistic Planning

CITY AND REGIONAL CONTRIBUTIONS:

INTRODUCTION:

Inventory is an in-depth analysis on four specific topics that will be dealt with on workshops is central to the SMART-MR project. With each inventory we wish to share experiences on existing 'state of the art' of sustainable mobility measures in metropolitan regions, increase awareness on good practices and build capacities of partners' staff. The third inventory deals with low carbon logistic planning and through it we want to achieve two goals:

- to enable the discussion and exchange of experience regarding low carbon logistic planning among partners;
- to provide methods and tools for partners to engage in low carbon logistic planning.

This inventory is structured in four sections in order to achieve the above-mentioned goals:

A. **Open questions on creating a logistics plan *:** a set of 'open questions' intended for regions about procedures, opinions and practices on low-carbon logistic planning
B. **Data monitoring and other tools for managing and updating a logistics plan:** questionnaire about an actual local or regional logistics plan or any other relevant transport policy adopted in the last 10 years.
C. **Good/bad practice presentation**: detailed presentation of the procedures adopted in low-carbon logistic planning in your respective region/municipality.
D. **Current experiences**: short presentation of your low-carbon logistic planning design/development processes, methodology and results.

LJUBLJANA

A. OPEN QUESTIONS ON LOW-CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

Logistics planning in Slovenia is not managed by local authorities. But they are in charge of spatial planning at the local level (including land use planning) so any project (like logistic centres, industrial areas …) planned on their territory is in their jurisdiction. Municipalities are also managing the local roads, therefore they can for example limit the freight traffic on them. Any such action on state roads must be agreed with Slovenian Infrastructure Agency first.

Funding of logistic planning depends on each specific case, but there are mostly funded by private investors. In case of intermodal logistic terminal planned in BTC in Ljubljana for 2023 the investors are BTC logistic centre, Slovenian Railways, City of Ljubljana and Mercator (a big trade company), forming a public-private partnership. Additional investment funds in this case could be acquired from the European funds for the development of transport and logistics infrastructure.

Since 2012 Eco Fund of Slovenia provides subsidies for electric vans for legal entities. Aid can be granted both for new electric vehicles, as well as the renovation of existing vehicles. The amount of non-repayable financial assistance for vans is 3000 euros for the purchase or 2000 euros for the renovation/vehicle.

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2. Please describe the cooperation in the field of logistics on a local and regional level.

There are many small and medium-sized logistic centres in Slovenia, built by manufacturing companies and major retailers for their own needs. In general they were built with a support of municipalities.
There is not much cooperation at the regional level in the field of logistics.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

Not specifically. There are two documents dealing with restriction measures on roads at the state level and at the municipal level:

- Order on traffic restrictions on roads in the Republic of Slovenia (2011),
- Decree on the organization of traffic in the City of Ljubljana (2013).

An important step towards low-carbon logistics planning is also Electromobility Strategy in the City of Ljubljana (2013), although the document does not tackle logistics.

As mentioned above, logistics planning in Slovenia is not managed by local or regional authorities.

4. Is low carbon logistics part of mobility planning in your region?

This issue is not tackled at the regional level. But many sustainable urban mobility plans (on the local level) are now being elaborated and some of them are covering this issue as well.

5. How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?

In Ljubljana Urban Region, there is no regional mobility plan yet. At regional level, an intermodal logistic terminal planned in BTC in Ljubljana for 2023 is relevant, as mentioned above.

6. **What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).**

This issue is only partly tackled at local level. There are secondary population centres in the region having problems with transit traffic induced in industrial cities outside the region. They would like to redirect it out of the main road that is usually passing the city centres. They also have problems with parking of trucks and freight traffic because of specific location of industrial zones in their cities that generate heavy freight traffic.

Examples of objectives in current local sustainable urban mobility plans of secondary population centres:

City of Vrhnika: to calm, reduce and redistribute transit traffic and to ensure road safety.

City of Logatec: to limit the transit traffic going through the centre of the settlements, to move it away from the settlements.

City of Medvode: to reduce traffic in the city center and to redirect transit out of the centre of settlements.

City of Ljubljana: an increase in the number of vehicles in accordance with the high environmental standards of public service vehicles (CNG, electric vehicles ...), a renovation of main market place with underground space for storage of goods thus minimising the need for everyday delivery of goods, construction of CNG filling stations.

The sustainable urban mobility plan for Ljubljana is not finished yet but from what we know the city of Ljubljana would like to optimize delivery of goods in the city centre and elsewhere. As mentioned above intermodal logistic centre BTC as one of the biggest logistic centres in Southeast Europe is planned.

7. **How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?**

Since April 2017 there is forbidden for heavy freight traffic to drive on the northern part of the Ljubljana ring road from 22.00 to 6.00 am to ensure better living standard of densely populated area by reducing levels of noise load. Heavy goods vehicles (above than 3,5t) are prohibited from overtaking on Ljubljana ring road. City of Ljubljana is implementing this action in cooperation with Slovenian Motorway Company.

There is also a driving restrictions for all heavy freight vehicles (above 7,5t) on all main roads at the state level on Sundays and holidays from 8.00 to 21.00. During the tourist season the same rule applies on Saturdays (8.00 to 13.00) and some other restrictions apply on the state roads.

In Ljubljana, the area of city centre is closed for heavy goods road vehicles with a gross vehicle weight above 3,5t (Decree on the organization of traffic in the City of Ljubljana). However, most of the city centre is closed for traffic and changed into pedestrian zone, where delivery is only possible between 6 and 10 am.

8. **How are transport companies involved in the planning process? Is the process formal and/or informal?**

Transport companies are stakeholders in a formal planning process when creating new spatial planning acts. In some cases the companies are the leaders of applying modern solutions.

9. **What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?**

The main demand is delivery of goods. Despite the city centre of Ljubljana lost its leading role in retail due to suburbanization, it kept its role of a place of consumption, also because of widening its pedestrian zones, making streets and squares more walkable. But on the other hand, delivery of goods causes conflicts when delivery vehicles preoccupy pedestrian zones at the time of delivery.

10. How does the logistic planning interact with the research in the field of mobility?

Within the CIVITAS ELAN project, there was a conference on sustainable urban delivery of goods in Ljubljana in 2012 with a aim to present the current situation in case of Ljubljana and to exchange the possible solution on delivery of goods, like aggregation and consolidation of deliveries before entering the city centres, optimizing the delivery paths and use of environmentally friendly vehicles in the companies, including electric cargo bikes.

Faculty of Civil and Geodetic Engineering and city of Maribor are taking part in project Sulpiter which will support policy makers in improving their understanding of FUAs freight phenomena in an energy and environmental perspective. It will also enhance their capacity in urban freight mobility planning in order to develop and adopt sustainable urban logistics plans (SULPs).

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

The data about the flows of goods is only available at the regional and state level (open data). Because of high level of aggregation, this data is not useful to stakeholders and logistics planning.

Road freight transport, regions, 2015 (Statistical office of Republic of Slovenia)

Tonne-kilometres (mio.)	loaded	unloaded
Pomurska	215.3	254.3
Podravska	962.6	850
Koroška	224.6	186.5
Savinjska	816	736.1
Zasavska	95.5	32.3
Posavska	202.2	209.7
Gorenjska	697.9	565
Primorsko-notranjska	209.3	161.7
Goriška	480.9	365.5
Obalno-kraška	765.1	385.7
Jugovzhodna Slovenija	603.9	499
Osrednjeslovenska (Ljubljana Urban Region)	1567.8	1498.4

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

Strategy of Spatial Development of Slovenia (2004) defines that transport terminals for combined transport at the international level will be developed in Koper, Ljubljana and Maribor. Transport terminals of national significance will be developed near the national transport hubs in Novo mesto, Celje, Murska Sobota, Divača (Sežana), Nova Gorica and Kranj (Jesenice). Plans for these projects should be covered by the national spatial plan. Industrial areas and economic zones should be planned next to the transport hub locations so that they are well connected

by rail and road network that allows public transportation. Before making new greenfield industrial areas, availability of renewal and rehabilitation of disused industrial sites has to be checked first. Former industrial areas that meet the spatial, environmental, infrastructure and other standards of modern production parks will be retrained for production purposes (Strategy of Spatial Development of Slovenia 2004).
Planning of small industrial or logistic areas is covered in land use plan at the local (municipality) level.
In practice, there were many industrial areas built in the last 15 years because of the lack of cooperation at the regional level, also in Ljubljana Urban Region. Many of them are still half empty.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsible, targets (in 5 sentences):

In Ljubljana Urban Region, there is no regional mobility plan yet. The only similar document at the regional level (Expert guidelines for the regulation of regional public transport) does not tackle logistics.

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

The most significant data about vehicular traffic, transport networks and freight in Ljubljana Urban Region are collected and updated by the Statistical Office of the Republic of Slovenia.

Available data:

- Road goods transport by statistical regions of loading, Slovenia, annually
- Road goods transport by statistical regions of unloading, Slovenia, annually
- Some indicators of transport by statistical regions, Slovenia, annually
- Length of roads by category of roads and region, Slovenia, annual data until 2012
- Road traffic accidents and people in accidents, statistical regions, Slovenia, annually
- Road vehicles at the end of the year (31.12.) by type of vehicle and statistical region, Slovenia, annually

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

The most useful instruments to collect data related to freight transport are related to tight and smooth collaboration of national and regional stakeholders. In case of Slovenia, these should be Ministry of Infrastructure, Ministry of Environment and Spatial Planning, Statistical Office of the Republic of Slovenia, Regional Development Agency of the Ljubljana Urban Region. These institutions should find proper ways and mechanisms to collect data necessary for low carbon logistic planning.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

Instruments for monitoring and evaluating data concerning low-carbon logistics are being established by Ministry of Environment and Spatial Planning. See Indicators of environment in Slovenia/Transport. Unfortunately, the data are being presented just on the national level. In the future, regional statistics should be established as well.

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: A web portal for support and promotion of low-carbon city logistics	Name: Current unsustainable delivery of goods in the city centre of Ljubljana
Context: 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 were introduced in Ljubljana within the CIVITAS ELAN project in 2009 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 online routing tool.	Context: Despite the fact that a policy basis has been established for the implementation of sustainable logistics in the City of Ljubljana, pedestrian zones in the city centre are still congested with vans and trucks during peak delivery hours. The delivery with bikes and electric vehicles is scarce. The latest study is 8 years old (Gostič 2009), but recent field observations showed that situation has not changed much. The key findings of the study are presented below.
Main authorities and stakeholders involved: research organisations, cooperating within CIVITAS ELAN project, the City of Ljubljana	Main authorities and stakeholders involved: the City of Ljubljana, shop owners, delivery companies
Web links: http://www.eltis.org/discover/case-studies/promoting-sustainable-freight-logistics-ljubljana-slovenia http://civitas.eu/content/sustainable-freight-logistics http://civitas.eu/sites/default/files/civitas-case-study-sustainable-freight-logistics-ljubljana.pdf http://www.dostave.si/	Web links: http://geo.ff.uni-lj.si/pisnadela/pdfs/dipl_200910_klemen_gostic.pdf (only summary available in English)
Why is the practice considered as 'good'? A web portal for the promotion of sustainable freight logistics with freight transport simulation was established in 2012. The tool demonstrates the benefits and positive impacts that freight consolidation and implementation of low-carbon logistics would bring to stakeholders. It also includes online calculations of optimal routes for navigation within the city centre and calculations of optimal paths through the pedestrian zone. Interactive maps with free parking spaces for delivery vehicles are also available, as are the locations of physical barriers and entry points, charging stations for electric vehicles, etc. Several events to promote the measure, including three-day training sessions for efficient freight delivery and a national conference on sustainable freight	Why is the practice considered as 'bad'? The number of entries of vehicles to the city centre is the highest between 7:30 and 9:00, when many pedestrians and cyclists pass the area too. Vans represent 65 % of delivery vehicles, while the share of electric vehicles and bicylces is very low. The majority of delivery vehicles (43 %) are in accordance with EURO III emission standards, followed by EURO IV (27 %). The majority of vans are only occupied between 25 and 50 %, which indicates a very low efficiency of freight logistics in the city centre. The average delivery lasts for 24 minutes, which is too much according to the prevailed characteristics of delivered goods.

delivery, were organised in Ljubljana. The internet portal is a long-term communication and information platform for stakeholders. It helps to spread the knowledge across the entire country and provides better support to stakeholders performing logistics activities. This kind of promotion of sustainable freight logistics is easily replicable in other European cities.	There are numerous measures still to be implemented, which could make city logistics more efficient and sustainable.

D. CURRENT EXPERIENCES

1. **Has your organization already been involved in a logistics planning process?**

Not specifically, just in the context of preparation of spatial urban mobility plans of some cities in the region.

2. **Were you directly involved in the activities or did you engage an external expert?**

We were directly involved in the activities.

3. **What kind of methodology did you use?**

Each stage of preparation plan (defining problems, objectives, actions) was strongly supported by participation process activities.

4. **Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?**

The results of the planning procedure were evaluated and adjusted with set goals in the process of elaborating the SUMPs.

5. **Are there any actual results/actions due to the logistics plan?**

Not yet, as many SUMPs were approved just recently. Elaborating the SUMP of city of Ljubljana is still in process. But some actions are planned regarding redirecting freight traffic from the roads passing through city centres.

6. **Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?**

We would like to learn more about the low-carbon logistic planning being a part of the regional mobility plan. What are the experiences from other regions/countries regarding participation process, objectives, actions and monitoring? Are there any good practices of low-carbon logistics in pedestrian zones?

OSLO / AKERSHUS

A) OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. **To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?**

Local authorities are not responsible for logistics planning. The local authorities are involved at an early stage in regulating and building activities for public buildings, parks etc. The local authorities are obliged to make formal assessment of new projects that has an effect on transport.

2. **Please describe the cooperation in the field of logistics on a local and regional level.**

On a local level, Oslo, we have a Forum for CityDistribution Oslo, with representatives from municipal and regional agencies, transport providers, unions and interest organisations for freight
On a regional level the Public roads administration organises an interest forum for goods distribution. Logistics Forum Region East.

3. **Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?**

On a regional level there is the “Regional plan for transport and land use” (2015) between the county of Oslo and Akershus, where freight and environment issues are dealt with.

On a local level, Oslo, the city council has adopted, 2016, a Climate and Energy strategy which has been followed by an action plan that enlists 43 different measures including that of low carbon for logistics. Legislation that opens for municipalities to restrict vehicles that are below EUR VI (low emission zone) are in place, as of now the municipality of Oslo is working on passing a regulation that will impose vehicles under EUR VI to pay a fee at entrance to the municipality.

4. **Is low carbon logistics part of mobility planning in your region?**

Both in the region and on local level mobility planning includes low carbon logistics. We base the regional planning on the “Regional plan for Landuse and Transport” There is also made a freight strategy for a wider region, regarding terminal structure and other issues, but with a lesser focus on low carbon.

5. **How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?**

The Climate and Energy strategy for the city has stated levels for objectives. By 2020 we shall see a 50 % reduction in CO2 levels (1991) and 95 % reduction by 2030 (close to 100 % none fossil fuels/carbon neutral). The city council has made the objective of stopping the sales of new fossil fuel vehicles by 2025. This is also a national goal. Public transport in Oslo will be carbon neutral by 2020.
The regional plan for land use and transport state the objectives for low carbon but not specifically aimed at logistics. The objectives of reducing emissions both CO2 and NOX/PM are general and applies to both private-, public- and freight transport.

6. **What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).**

NGOs Oslo has made a council decision on restricting mobility by 20 % within 2020. There is also the decision on establishing a car free inner city for increased citylife . This care free city centre has its own plan for city distribution. The objective is to have last mile logistics with electrical vehicles, only. We also have a considerable emphasize on bicycles use in Oslo, with its own strategy and action plan. In June this year we will open, in cooperation with DHL,

a bicycle merging measure in central Oslo (mini-consolidation centre) for last mile transport in the city centre. The objective is to further the policy of electrical vehicles and hydrogen vehicles in Oslo and in Akershus. Oslo and Akershus has a special attention to electrical vehicles, holding a highest density of electric cars on a global level. Oslo has a program for building infrastructure to support the continued growth of electric vehicles. Akershus county council has a hydrogen strategy that includes demonstration cases for hydrogen busses and infrastructure to support growth in hydrogen vehicles.

7. **How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?**

The toll ring system for transport has an effect on all transportation. There has been decided to introduce differentiated environmental based toll charging in the toll ring in the autumn of 2017, with higher fees especially for diesel engined vehicles, both private and freight on traffic to and through Oslo. This is actually a Congestion Charge on top of the normal toll ring charge. Oslo is also introducing a Low Emission Zone on the city borders for heavy trucks below Euroclass 6 (Euroclass 6 will be free) The city of Oslo are at the moment working on the enforcement system for the Low Emission Zone.

8. **How is transport companies involved in the planning process? Is the process formal and/or informal?**

We have the informal forum for cooperation on a city logistics plan (mentioned above) giving a dialogue. In connection with landuse planning, new building projects, new rehabilitation of streets, then the regularly planning process is involved. The interest organisations for transport are on the formal hearing list in the planning process.

9. **What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?**

The Low Emission Zone for Oslo will come into operation in the late autumn of 2017 , and gives regulations for entrance fees for heavy duty vehicles below Euroclass 6. This is the first stage of a low emission zone. The next stage will also include lighter, diesel powered vehicles. The dates for the next stages are not set. We also have the regulation to ban other diesel powered traffic on days with specially bad air quality (due to NO2 emissions and particles). The horizon for these measures are, for the time being, 2022.

There are no regulations to freight transport in city/pedestrian zones. There are however a plan in progress to restrict motorized vehicles in the city centre.

10. **How does the logistic planning interact with the research in the field of mobility?**

The City of Oslo is involved in several research projects, both national and international (EU). On the national level we have commissioned the Institute for Transport Economy (TØI) on several research projects, in the making of a study on measures to reduce the impact of emissions from freight. TØI is at the moment managing a national research project on Sustainable Urban Logistics guidelines (NORSULP). The city is engaged in several EU projects including SmartMR !!, on the subject of electrical vehicles in urban freight (FREVUE) with SINTEF, and CityLab (Living Lab) on city logistics with TØI as lead partner. The results are being used in city logistics planning. An important part is to improve the market for electrical vehicles for freight.

11. **Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?**

We do have collected data for the flow of goods, but unfortunately on a too high level of aggregated data (National Bureau for Statistics) We are steadily working to improve the data for freight, but some of the more important data is closed for open access (business data from transportation). We are improving the knowledge of freight traffic through data acquisition from the toll ring operations. The data will be more used in logistics planning but at the moment it is not of satisfactorily quality. All data is shared with the stakeholders, from the public authorities !

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

Regional and local planning is involved with planning of freight terminals. We have also national involvement through the national railways base terminal at Alnabru within the city of Oslo. Large transport terminals are established in Akershus/Vestby southeast of Oslo on the E6. The port structure is also part of infrastructure planning and landuse planning, connected with other city planning. We should also mention the planning for a refurbished national government “campus” in the very city center of Oslo. The logistics planning for the new government office complex is part of the concerns of the Forum for City distribution, and of course very important for the city center planning through the normal landuse planning process.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsible, targets (in 5 sentences):

Name of the plan: Regional Plan for Land Use and Transport in Oslo and Akershus
Goals: The transport system shall in a rational manner tie the multi core region together, and connect well nationally and internationally. The transport system shall be effective, low emission based with accessibility for everyone and minimum demand for private cars. Business competitiveness is improved through a development of an efficient transport system for private, public and freight transport.
Time frame: 2015–2030
Responsibles: The City of Oslo and the County of Akershus
Targets: Indicators are under development

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

No data concerning freight is collected on a regular basis in the region. However, freight in the railway system is well documented. The ports also have good data, and the toll ring registers all vehicles passing in and through Oslo (eks. We have data showing that 50 % of all heavy vehicles are below EUR VI). But none of the data listed here are in a common data platform.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

We have useful instrumentation for registration of data within singular sectors, but they are not put together in a system as of now. The transport operators could possibly provide better data for freight transport. The legislation in this area is limits the opportunity to collect and compile datasets from the freight industry.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

No.

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Regional plan for transport and land use between Oslo and Akershus	Name:
Context: Ministry for the environment made a requirement for the two authorities to make a common regional plan in order to work for objectives as reduction of climate gases, and to obtain a sustainable transport system (more walking, cycling and public transport)	Context:
Main authorities and stakeholders involved: The County Council of Akershus and the City of Oslo	Main authorities and stakeholders involved:
Web links:	Web links:
Why is the practice considered as 'good'? The cooperation on these vital issues lays the foundations for a more sustainable region	Why is the practice considered as 'bad'?

Good practice	Bad practice
Name: Development of the Aker Brygge, Tjuvholmen and Barcode business and residential complex, regarding freight and goods deleveries and services	Name: Lack of development of physical conditions for goods distribution to shopping centers and hotels in downtown areas
Context: These relatively large developments in central Oslo (seaside) have been planned for optimum goods deliveries and return of goods and waste – in underground facilities	Context: Several centers and hotels in downtown Oslo has been planned and accepted without proper access and other physical installations for goods delivery.
Main authorities and stakeholders involved: Planning authorities (municipal and public roads) and the developers (architects and entrepreneurs)	Main authorities and stakeholders involved: Planning authorities and architects, and the complex developers. Logistics operators were generally not involves, as well as the traffic authorities.
Web links:	Web links:
Why is the practice considered as 'good'? It has from the start been considered as important to satisfactorily facilitate for efficient goods delivery and related activities.	Why is the practice considered as 'bad'? It has been a requirement to facilitate physically for goods delivery, but in some cases this has not been carried through, and no penalize has been issued. It is necessary for these complexes to improve on this matter – as the lack of organised deliveries make problems for traffic in general. They need to appoint a form for logistics planner to handle the challenges.

D. CURRENT EXPERIENCES

1. Has your organization already been involved in a logistics planning process?

The City of Oslo and Akershus County has been involved in several strategic plans for freight, including terminals. We have been involved in concrete land use planning and access for the large terminal area of Alnabru. The City is currently working on a city logistics plan together with the stakeholders within the transport industry. We are also working on a distribution plan for the care free city center. We also take part in several research projects for efficient and green city distribution.

2. Were you directly involved in the activities or did you engage an external expert?

We were directly involved. We also use consultants for data acquisition matters

3. What kind of methodology did you use?

Observe, plan for goods traffic in a central streetnetwork and interview local shopowners for local plans. We also used workshops methods to list challenges and potential solutions for city wide logistics.

4. Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?

Strategic plans were in comparison set goals. More concrete plans for city logistics is been worked on at this time.

5. Are there any actual results/actions due to the logistics plan?

The main results for strategic planning is been used for other planning processes. The results for logistics city planning is at present being transferred into several street projects to improve city life, and include a plan for goods distribution.

6. Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?

How to obtain proper and qualified datasets for city planning – city logistics.
How to improve the market for zero emission vehicles of all categories for logistics purposes.
New and more “sophisticated” solutions for city distribution.

GÖTEBORG

A) OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. **To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?**

Local authorities are not in charge of the logistics planning.

2. **Please describe the cooperation in the field of logistics on a local and regional level.**

At a local level, there is a goods transport council whose members include representatives from the municipality, the city's transport companies, and local businesses and retailers. On a Västra Götalands regional (VGR) level, there is a goods group with members from the Gothenburg port, the city and municipal authorities, and academy.

3. **Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?**

There is a regional goods transport strategy (VGR level) which supports regional planning, in order to cater to the needs of goods transportation as well as to enhance the development of a sustainable transport system.

4. **Is low carbon logistics part of mobility planning in your region?**

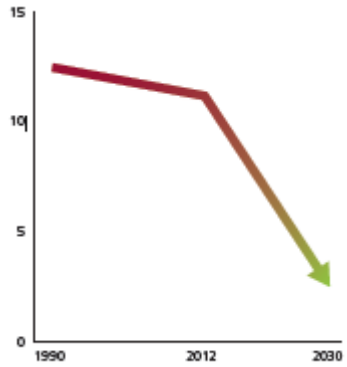
The region (VGR level) has an Environmental Policy which also covers goods transport. The Gothenburg region nor the VGR has a regional mobility plan.

5. **How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?**

The region has set a goal of fossil independence in the year 2030, this means that in all ways possible the region will take measures towards low emission and so on. This is most seen in the goals for public transport where we already have reached 95% carbon neutral use.

6. **What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).**

The objectives of the regional goods transport strategies are to ensure that westerns Sweden continues to holds the position of being a first-rate transport- and logistic region both nationally and internationally. There are no expressed goals oriented specifically towards restrictive transport mobility. But the objectives include sustainable competitiveness related to sustainable development, accessibility and safe distribution to all parts of Västra Götaland. The strategy, is considering the restrictions given in other policy documents such as the Climate strategy for Västra Götaland includes a target of an economy that has a fossil free independency 2030.



Targets for emissions of greenhouse gases.
https://alfresco.vgregion.se/alfresco/service/vgr/storage/node/content/workspace/SpacesStore/3376ea30-75d8-4cce-a41a-d67cc81bd0d7/VGR_Godstransportstrategi_160927.pdf?a=false&guest=true

7. **How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?**

A Low Emission Zone for freight vehicles is in use in the Gothenburg's city center.

8. **How is transport companies involved in the planning process? Is the process formal and/or informal?**

No formal process but in connection to the regional infrastructure investment plan a dialog process is often included.

9. **What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?**

Gothenburg and Mölndal have an environmental/low emission zone for trucks and buses in parts of the core area.

For heavy trucks and buses apply:

- Everyone is allowed to drive in the environmental zone for 6 years from the initial registration, regardless of the country of registration.
- Vehicles belonging EUR 3 may travel in the environmental zone in eight years from the initial registration, regardless of the country of registration.
- Vehicles belonging EUR 4 may travel in the environmental zone until 2016 or 8 * years from first registration, regardless of the country of registration. Vehicles adapted to Euro 4, travels to 2016 **.
- Vehicles belonging EUR 5 may travel in the environmental zone until 2020 or eight * years from first registration, regardless of the country of registration. Vehicles designed to Euro 5 may travel to 2020 **.
- For vehicles of Euro 6 or better alternative adapted to EUR 6 or better is no time limit.

10. **How does the logistic planning interact with the research in the field of mobility?**

VGR is involved as a founder and financier of Lindholmen Science Park. Representatives from VGR are directly involved as members of the board and thereby actively committed to join VGR policy decisions on fossil free transport sector and achieving low-carbon development by financing projects within this field. Lindholmen Science Park is an international collaborative environment for research, innovation and education within the areas Transport, ICT and Media.

Lindholmen Science Park offers a neutral development environment where industry, academy and public sector can run research and development projects. For almost 15 years we have been creating successful collaborations and innovations. See also good example section.

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

There are collected data of the goods flow dated from 2015. The data were used as input to the Goods transport strategy for Västra Götaland region (VGR). It is not open data but the stakeholders were invited to dialog processes when conducting the data collection and for to discuss the results.

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

On the regional level this is not an issue today. Terminal structure is being handled at local municipal level and with the transport/logistic companies.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

C.

Name of the plan, goals, time-frame, responsibles, targets (in 5 sentences):

Goals:

Time frame:

Responsibilities:

Targets:

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

No data concerning freight is collected on a regular basis in the region. There has been one project mapping the goods flows in the region in 2015, but it is not updated. On a national level, data collection concerning commodity flows is performed regularly.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

We have no useful instruments today. The goods flow mapping that we conducted in 2015 was based on official data on industry production and localization. This is a good approach, but it could be better if it was possible to add automatic measurements through cameras or sensors.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

No.

C. GOOD AND BAD PRACTICE

Good practice 1	**Good practice 2**
Name: Stadsleveransen – A more pleasant inner city	Name: Lindholmen Science Parc
Context: From time to time traffic conditions in the central part of Gothenburg seemed chaotic. Trucks, vans, pedestrians and cyclists shared the confined city space, the level of noise was high and passers-by sometimes felt unsafe. It was also frustrating for store owners when their shop window were blocked by large delivery vehicles during prime business hours. Previously to "Stadsleveransen", the city worked for several years with different measure in order to improve the traffic situation in the centre of the city. Gothenburg had a small merging terminal, serving a campus area, as well as a small-scale pilot demonstration of a merging service in the inner city. Moreover, the city had a local freight network that had been running for seven years. In cities, freight transports generally account for up to 20% of total traffic, 30% of congestion and emit 50% of greenhouse gases. The EU project SMARTSET which ran between 2013 and 2016, worked to change this in line with the EU 2020 strategy, by strengthening commercial conditions with appropriate rules and incentives. Within the project, sustainable business models were developed to overcome existing market barriers. Freight transport was coordinated in terminals outside the city center and electric vehicles were introduced for deliveries the last kilometers. The Urban Transport Administration- City of Gothenburg has had a leading role as coordinator in the SMARTSET project. Several of the project's actions have been implemented in Gothenburg, including "Stadsleveransen".	Context: LSC provide a neutral arena for cooperation within vehicle, transportation and environmental engineering. Test Site Sweden initiates and develops test and demonstration environments for vehicles in order to support the development of sustainable transport.
Main authorities and stakeholders involved: City of Gothenburg in collaboration with property owners and collaborating companies.	Main authorities and stakeholders involved: VGR, Gothenburg, Business Region Göteborg and Swedish Transport Administration together with University of Gothenburg, Chalmers and Volvo, SAAB, Telenor and Ericsson.
Web links: https://www.theguardian.com/cities/2015/nov/18/innovative-delivery-system-transforming-gothenburg-roads http://smartset-project.eu/	Web links: http://www.lindholmen.se/en

More information but unfortunately only in Swedish: http://forlivochrorelse.se/tag/stadsleveransen/	
Why is the practice considered as 'good'? The air pollution in the centre of Gothenburg has decreased by 68 tonnes of carbon dioxide after only a year since "Stadsleveransen" began with its environmentally friendly transportation in the city. With relatively small and slow-moving electric vehicles and bicycles around 500 packages per day are distributed from a terminal to shops and offices around the inner city. The vehicles are specially designed to work smoothly in limited street spaces and be safe to drive when they interact with pedestrians and cyclists. The vehicles are quiet and they do not release any greenhouse gases. In addition to environmental benefits, "Stadsleveransen" has become an economically viable sustainable business with increased delivery volumes (increasing 10-fold since the start of the project - 2016) and provides a desirable space to advertise one. The practice is considered replicable in other European cities. "Stadsleveransen" is supported financially by advertising spaces on the delivery vehicles as well as from fees from transport companies.	Why is the practice considered as 'good'? Lindholmen Science Parc brings environmental policies, academy and industry together to develop solutions for the challenges ahead. GR considers it as an essential part in logistic planning to actually develop new forms of transport to give planners a realistic view of the future. It also gives the opportunity to move away from forecasting to "what to" planning.
Good practice 3	
Name: Last mile dilemma including personal transport and parcel delivery	
Context: One of the disadvantages with using Public transport is that you don't quite get to your finale destination. The problem is known as the "the last mile dilemma". And how do you bring the package home that you order over internet, but has been delivered to a service point?	
Main authorities and stakeholders involved: Bzzt and Västtrafik (the PT). Involved in planning of the case; Bzzt, Västtrafik, Tempo (Grocer), City collaboration in Lerum, Lerum municipality and the Victoria institute.	

 Photo: Robert Levegård.	
Why is the practice considered as 'good'? Small electric taxi pods (Bzzt!) brings packages home, at a reduced cost service when used in connection to transit with Public Transport. You can also pick up pre-ordered bags of groceries on route. An App makes it easy to order the pickup. This service is under development.	

D. CURRENT EXPERIENCES

1. **Has your organization already been involved in a logistics planning process?**

GR is not, at the moment, involved in logistics planning processes.

2. **Were you directly involved in the activities or did you engage an external expert?**

3. **What kind of methodology did you use?**

4. **Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?**

5. **Are there any actual results/actions due to the logistics plan?**

6. **Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?**

One issue that has come up in the discussion of transport solutions for the future. How can the public and the planners relate to new solution that radically will need a change of their behaviour? How can we ask questions about the future? Example, if a questioner in the 1950ies asked the public if they were interested in spending a large part of their income and work/social hours staring at a device that contained just about everything in the context of social collaboration, what would be their answer?

How can we expect the public and planners to handle questions about future logistic solution?

HELSINKI

A. OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

The authorities operating at the Uusimaa region level (26 municipalities) are Helsinki-Uusimaa Regional Council and ELY center (Center for Economic Development, Transport and the Environment). Logistics forms its own theme in Helsinki-Uusimaa Regional Council's Regional Land Use Plan. The plan defines regionally important reserves for logistics and ensures both international and regional transport connections. ELY center is responsible for e.g. freight transport permits and the planning and measurements of freight transport's service areas. ELY center also prepared the standards regarding the increase in sizes and masses of trucks (bigger than EU average).

At the Helsinki region level (14 municipalities) the main authority is Helsinki Region Transport (HSL). HSL is responsible for Helsinki Region Transport System Plan, HLJ 2015, (currently part of MAL planning (MAL = the regional planning on land use, housing and transportation)), which ensures the needs of logistics and the smooth functioning of road transport in the Helsinki Region (14 municipalities). Logistics as a theme will be included also in the next HLJ/MAL plan.

The cities in the Helsinki Metropolitan Area also ensures the needs of logistics (area reserves and connection needs) in their local master plans and detailed plans. They also prepare their own development and operational programs for logistics.

The planning of these authorities is mainly funded by their own budgets. HSL's transport system planning work is funded by HSL's member municipalities, KUUMA municipalities (KUUMA=Central Uusimaa municipalities) and the state.

2. Please describe the cooperation in the field of logistics on a local and regional level.

Cooperation meetings are arranged for relevant authorities, key organizations on logistics and transportation companies as a part of land use and transport planning processes at Uusimaa, regional and municipality levels. They are part of a normal statutory participation procedure. For example at a regional level, joint theme seminars on logistics have been arranged as part of the planning process by Helsinki-Uusimaa Regional Council, ELY center and HSL.

At the region operates also a Helsinki Metropolitan Area Distribution Workgroup, including city planners, HSL, the General Industry Association YTL, Chamber of Commerce and representatives of businesses. The group is coordinated by an advocacy group (YTL) and deals with practical issues, such as nighttime delivery and collection, parking surveys and piloting booking systems for loading places.

Another form of cooperation coordinated by advocacy groups is the annual Get to know freight transport- day, aimed at land use and transport planners and organized by Helsinki Region Chamber of Commerce. The objectives of the event are to familiarize the participants with freight transport, service transport and the topical issues in the field, as well as to identify problems and attempt solving them using the means of planning.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

There is no separate legislation regarding low carbon logistics or its planning in Finland. Land use planning is guided by the Land Use and Building Act, and HLJ-planning by the HSL law and the SOVA act (social impact assessment including participation process).

The national climate and energy saving targets apply to logistics as an industry. The newly prepared national energy and climate strategy aims at improving the energy efficiency of transport. The aim is to improve the energy efficiency of logistics and freight transport through e.g. digitalization, Mobility as a Service and the activity of transport operators and subscribers. In heavy transport, the full-scale metrics and masses approved in Finland will be made use of. (These metrics and masses are larger than those approved in Central Europe, mainly because of long distances and the poor coverage of the rail network in Finland).

The Regional Land Use Plan, HLJ 2015 and the master plans of the municipalities steer logistics and its positioning, but the main objectives of these plans are to ensure business activities, rather than promoting the low carbon aspect.

The City of Helsinki has prepared the Action Plan of City Logistics (2014), which guides the development of logistics. Promoting sustainability and low carbon solutions is one of the objectives in the plan. In addition, a survey on Bike-based and light city logistics solutions has recently been made in collaboration between the city, Finnish Transport Agency (FTA) and HSL. The survey focuses into the latest solutions in use elsewhere, and the potential to introduce them in Finland. The work is still in process, recommendations will be made based on the findings of the report.

4. Is low carbon logistics part of mobility planning in your region?

Yes, logistics is nowadays a part of regional land use planning, HLJ process and city planning. However, the low carbon aspect is not strongly represented in the planning of logistics.

Logistics is one of the key themes in Helsinki-Uusimaa Regional Council's Regional Land Use Plan (4th phase). The plan defines area reservations for essential, regionally significant forms of logistics and ensures both international and regional transport connections. In the HLJ/MAL planning of the region, the location and development needs of logistic functions will be considered from the perspectives of e.g. transport demand and environmental objectives.

The locations of logistics areas are defined more in detail in the plans of the municipalities. Positioning of the functions defined in the planning process affects transport needs and the direction of transport. Transport planning can influence the operating conditions of different modes of transport. (E.g. heavy transport rest stops, parking).

Planning of low carbon logistics is best highlighted in Helsinki's City Logistics Action Plan. Although light logistic solutions are now included in the planning, compared to some European metropolises, Helsinki still lags behind. Challenges in the area are e.g. difficult weather conditions and combining modes of transport in a cost-effective manner.

5. How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?

In the Regional Land Use Plan the aim is to sufficiently prepare for the regional level area reserves for logistical functions (terminals, ports, seaways, airports) and to secure essential connections to these areas. The goal is to ensure the smooth flows of goods and transport at a regional level.

The HLJ 2015 plan aims at ensure the needs of logistics and the smooth functioning of road transport in the Helsinki Region, as well as securing the connections of logistics and the service level of national main roads. The main objectives of both Regional Land Use Plan and the HLJ 2015 plan relate to securing the competitiveness of business, rather than promoting the low carbon aspect.

The emission reduction targets will play a more significant role in the next HLJ plan, which is now being prepared. In addition to the existing theme of functionality of logistics, now it will be possible to regard the low carbon perspective on logistics. Emission reduction measures will be identified as a part of the HLJ work.

At a city level, the aim is to promote low carbon modes of transport whenever possible. In the future it will be possible to guide the development with incentives and restrictions. So far this has not been the case. The largest vehicles (over 12 meter) are prohibited from driving to Helsinki city center, but the low carbon perspective is not the main driver of this policy.

6. What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).

The objective of logistics in the Regional Land Use Plan is that Uusimaa is both nationally and internationally well accessible and that there are good conditions for the positioning of the logistics-related operations and services.

The HLJ 2015 plan seeks to ensure, among other things, that together with the sea ports and the Helsinki-Vantaa airport the transport system forms a network that supports the business competitiveness; to develop the transversal connections in the Central Uusimaa required by logistics, and to establish a liability distribution and implementation model for the service areas of the freight transport.

The Helsinki Citylogistics Action Plan is underpinning the objective for logistics in the mobility development program: improving the urban delivery in co-operation with businesses e.g. by implementing an information system supporting the delivery management, by ensuring appropriate loading sites and by regulating the operating times and the quality of the vehicles and the equipment. The following goals were raised as the basis for development measures:

- Land use and transportation planning; the most important are the heavy traffic stopping sites and the planning of the parking and stopping areas in the urban center.
- The introduction of a special delivery car parking symbol and a progressive fee according to the environmental friendliness of the vehicle fleet.
- The development of time-limitations for waste transportation.
- Using smart tools, to develop the identification and booking of delivery traffic stopping sites, the use of bollards/barriers to protect the pedestrian streets and sidewalks and to use changing traffic signs to meet the needs of delivery traffic and e.g. tourist buses. In addition, the development of situational street picture/snapshot, online deliveries and the logistics of downtown construction sites.
- Enhancing business co-operation, to establish jointly developed operational models for distribution services, e.g. combined deliveries.

In addition, in The City of Helsinki Strategy Programme 2013-2016 a more general level objective has been set, according to which the city operations have to be sustainable, effective and efficient. The use of environmental criteria will be increased and resource efficiency improved. The partnerships between the city and businesses are promoted so that environmental responsibility is strengthened and innovative and new business is created around smart technologies, resource efficient services and carbon neutral products.

7. How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?

An environmental zone has been set up in the Helsinki city center to reduce traffic emissions and to improve air quality, but it only restricts bus traffic and waste transportation and does not apply to freight traffic. In the zone, stricter emission criteria (Euro 3 for buses and Euro 5 for waste trucks) are required in the tendering.

In the Helsinki city center also the vehicle size is limited. Vehicles with a length of over 12 meters need a special permit to drive in the restricted zone in the city center. The restriction does not apply to buses. ELY center monitors, restricts and authorizes these special shipments. The city is responsible for the route planning of special transportations. As background information, there are three harbors in central Helsinki. Restricting the heavy duty traffic of the harbors has been discussed, but so far it has not been done because the restrictions could weaken the operating conditions of the shipping companies.

8. How are transport companies involved in the planning process? Is the process formal and/or informal?

Companies have the opportunity to participate in the planning processes by the statutory participation processes and thereby give their statements and opinions on the plans. The Helsinki-Uusimaa Regional Council has had a logistics working group, including business representatives, dealing with the preparatory planning. At municipal level, there has been co-operation with transport companies in the planning. Separate briefings are organized when there is timely topics in the planning process, considering e.g. logistics. These processes are formal.

Transportation planning co-operates with logistics and business interest groups, the General Industry Association YTL and the Chamber of Commerce, whereby companies can participate in planning, as well as in the regional seminars and events (see answer 2). The Helsinki Metropolitan Area delivery group, coordinated by YTL, meets regularly, but the process is informal.

Planned benefits for logistics companies include e.g. access to public transport lanes for freight traffic in a specific time window outside the peak hours, as well as specific delivery parking spots in the city center and parking prohibitions in key distribution areas.

9. What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?

In Helsinki´s Citylogistics Action Plan inadequate parking and stopping areas, and problems in identifying and booking them in the city, were emphasized as key development needs. A significant amount of time is spent searching for parking spaces.

There is also a need to introduce a special parking permit for delivery traffic, which facilitates parking in residential parking spots. Then, also a progressive parking fee according to the environmental friendliness of the fleet can be considered, which would guide the logistics companies to acquire less-polluting cars.

In the case of waste transport, it has been necessary to develop nighttime waste collecting, as the emptying of waste containers in a dense urban structure during the daytime traffic is challenging. At the same time, nighttime deliveries to food stores have been banned, especially due to noise problems.

There is also a need to develop the use of bollards/barriers to protect the pedestrian streets and sidewalks and to use changing traffic signs to meet the needs of delivery traffic and e.g. tourist buses.

In addition, the development of situation awareness on streets, online deliveries and the logistics of downtown construction sites is needed.

Enhancing business co-operation is considered important, to establish jointly developed operational models for distribution services, e.g. combined deliveries.

In addition, there is an underground maintenance tunnel below the center of Helsinki, through which a part of the city's deliveries is handled, especially the distribution needs of large shops and shopping centers. It would be necessary to improve the connections to the tunnel to extend its use. E.g. deliveries to small shops currently take place in the street level.

Other valid regulations are the environment zone of the city, which has been mentioned earlier. It concerns waste trucks, but not freight traffic.

10. How does the logistic planning interact with the research in the field of mobility?

Research is followed actively at both regional and municipal level. In addition, studies on international best practices, digitality, etc. are usually carried out for the needs of planning. The most recent freight traffic surveys in the Helsinki region were made in 2012-2013 by HSL. New technologies, trends and studies are explored in the currently starting new HLJ planning round.

In collaboration with FTA, Helsinki has made a separate city logistics survey on bicycle logistics and other light logistics solutions. Helsinki has also piloted the electronic booking of delivery parking spots and done its own research on the subject.

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

In the planning process of Uusimaa Regional Plan (4th phase) the information of volumes of freight and goods flows have been used. This information has been used to evaluate the adequacy of the routes and to estimate the development of logistics needs.

Helsinki Region Transport (HSL) prepares freight traffic surveys to identify traffic volumes and their routes as a basis for the transport system plan. Consequently, the quantities of goods are converted into traffic volumes for planning purposes. The resulting traffic volumes are the basis for traffic forecasts and models.

Urban traffic calculations, conducted by cities, only detect amount of trucks, not goods. Generalized information from these surveys are available online, but detailed information is not shared. It is not available as an open data.

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

During the planning process of Uusimaa regional plan there has been prepared a development view and scenarios on logistics with four different regional options. In the regionl plan the logistics areas and industrial areas are integrated. The plan takes into account regionally significant regional reserves for terminals and industrial areas. In municipal master plans, reserves are refined, the areas are identified and the dimensions of the transport connections are also verified. In detailed plans, areas are planned in more precisely and environmental and other impacts are assessed.

In the planning process of the Helsinki Region Transport System Plan (HLJ2015) the planners try to identify which areas will be realized, how much traffic flows it will cause and when. In the future MAL (combined Land use, housing and transport) planning process of the region, they will focus on the location and development needs of logistics operations, from the perspective of transport demand and environmental (also climate) targets.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsibles, targets (in 5 sentences):
Name of the plan: Action Plan on Citylogistics of the City of Helsinki
Goals: The aim of the plan is to promote the transport needs of the businesses and to develop logistics in the city of Helsinki.
Time-frame: Short term plan
Responsibles: The City of Helsinki, HSY, Forum Virium, Business organizations
Targets: Improving urban logistics and distribution traffic in co-operation with business organizations by implementing an information system supporting distribution guidance, ensuring appropriate loading sites and regulating operating times and quality of the equipment.

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

The data is collected on national level, regional level and municipal level. In the planning process of the Uusimaa regional plan there have been used national level data of air cargo, port freight and road transport freight. The volume of air freight is monitored annually by Finavia, the port of freight transport also annually by the Port Union. The quarterly updated data of goods flows of land transport is collected by Statistics Finland.

At the regional level, the most important data collection forms of HSL are passenger transport research and freight transport research. The passenger traffic survey is updated every 4-7 years and the freight transport survey is about every 10 years. This interview survey identifies the starting point, the destination and the quality of the cargo.

Traffic calculations are carried out in the traffic research of the City of Helsinki both manually and mechanically at variable metering points. The number of vehicles can be obtained from the machine-made calculations. In the man-made calculations trucks, vans and passenger cars can be identified. Traffic calculations are done manually every spring and autumn. The measuring points change all the time in both calculations, so there is always a several-year break between the information of certain measuring points.

The number of exemptions for vehicles more than 12 meters in Helsinki city center is known (collected by ELY-centre) The amount of low carbon logistics is unknown.

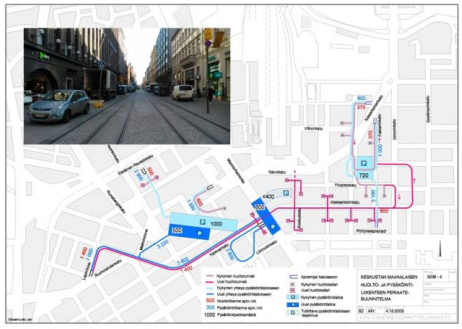
2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

Interviews at regular intervals would give the best picture of changes in freight transport.
The best information would come from companies in the field, but it is difficult to get information because of business secrets and it would also be laborious.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

Not in use. The models utilize data collected by surveys. During the survey, the accuracy of the data is ensured with the normal quality assurance.

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Pilot of the free parking places for city logistics	Name: Service Tunnel as a part of city logistics in Helsinki city centre
Context: In the city centre of Helsinki, it is being tested whether the use of parking spaces for distribution and loading could be enhanced by the use of intelligent transport tools. The trial offers real-time information about free parking places to drivers of logistics/delivery companies. Parking places are equipped with cameras and other tracking devices, so the status information can be shared in real-time with the drivers participating in the pilot. Drivers can easily identify free parking spaces and reserve them in advance.	Context: In the city center of Helsinki, there is a service tunnel (built 2005-2010) that serves the properties of Aleksanterinkatu (main street). Unfortunately, the use of the tunnel is low and the delivery cars block sidewalks of Aleksanterinkatu during the mornings and often throughout the day. There is not enough access to the tunnel from real estate on the street level. The original plan for the tunnel allows only trams and trolleys to run on Aleksanterinkatu, but the plan is not in use because of great opposition. The tunnel is also used for unauthorized passage through car traffic.  .
Main authorities and stakeholders involved: City of Helsinki, Forum Virium and companies on distribution/logistics	Main authorities and stakeholders involved: The tunnel was built by the City of Helsinki and managed by city-owned company Helsingin Väylä Oy
Web links: https://forumvirium.fi/jakeluliikennetta-tehostetaan-uudella-kokeilulla/ (press release, in Finnish)	Web links: http://www.hel.fi/static/hkr/rak/esitteet/keskustatunneli.pdf (brochure, in Finnish)
Why is the practice considered as ‘good’? It reduces emissions from distribution traffic and increases the efficiency of distribution by facilitating parking in a compact city center where the biggest problem is to find free parking space. It provides information for city planning from the needs for parking space and utilization at different times, while at the same time gaining experience with parking monitoring through technology.	Why is the practice considered as ‘bad’? The original plan is not in use because of great opposition. The tunnel is also used for unauthorized car traffic through city centre. All companies do not have a connection to the tunnel, it only serves part of the companies and does not remove the delivery cars from the main street as planned.

D. CURRENT EXPERIENCES

1. **Has your organization already been involved in a logistics planning process?**

HSY is responsible for waste management in the Helsinki Metropolitan Area for households. HSY plans regional logistics for waste management. HSY has been involved in the planning process of Helsinki Citylogistics Action Plan.

2. **Were you directly involved in the activities or did you engage an external expert?**

The Land use and Transport Planning Department of City of Helsinki has prepared the action plan for its own work. In addition to HSY, there have been other industries and business associations in the process. Consultants are used to support planning in background surveys in general, but this plan is made by Helsinki. HSY has been involved in planning and piloting the night-time waste collecting.

3. **What kind of methodology did you use?**

Creating an action plan was a normal participatory process. Work meetings were held and statements were requested from key stakeholders. HSY has been using route optimization for many years to plan waste collecting.

4. **Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?**

Planning and traffic planning processes are developed on the basis of feedback from time to time.

5. **Are there any actual results/actions due to the logistics plan?**

Pilot of the free parking places for city logistics, night time waste collecting, better information of construction zones etc.

6. **Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?**

Effects of Online shopping on logistics and emissions and Developing light logistics and its operation

BUDAPEST

A. OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

BKK is in charge of developing the sustainable urban mobility plan (SUMP) for Budapest (called Balázs Mór Plan or BMT). BKK as the integrated mobility manager is responsible for preparation and professional decision support, and implementation of the decisions and measures. The Municipality is making decisions based on the professional proposals of BKK.

In harmony with the SUMP, two freight and city logistics related documents define the operative ground rules of urban freight transport in Budapest. The main goal of the Freight Transport Strategy for Budapest is to set freight restrictions on the whole territory of Budapest, making transit freight traffic use the M0 motor ring instead of city roads. The freight access system fosters harmonised goods delivery, thus road traffic can be mitigated and air- and noise burden can be reduced. The comprehensive City Logistics Concept based on BMT was set up in order to define institutional background for services, to create urban service connections and to regulate logistics services in both time and space.

The Municipality is funding the strategic planning made by BKK. Regarding operative cases private companies are involved in planning. The freight access system is operated by the road operator (a company owned by the Municipality) approving access permit applications, organising control funded by public service agreement.

2. Please describe the cooperation in the field of logistics on a local and regional level.

On local level regarding city-logistics there is a continuous cooperation and discussion between BKK Centre for Budapest Transport and Budapest Közút (the road operator, and operator of freight transport access permit system). Actual logistics matters are regularly discussed with larger logistics unions and organizations.

Budapest and its surrounding area, forming a consistent region, can provide an environment for a wide range of activities. Well-coordinated economic cooperation requires - among others - an integrated system of transport networks and the optimisation of their connections.

On regional level Freight Danube Port (Szabadkikötő) in Csepel is involved in substantial freight traffic on the European transport corridor on the river Danube; therefore the transport of goods by ships has to be expanded along the city boundary of Budapest and Érd.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

The Freight Transport Strategy for Budapest (based on two decrees made by the General Assembly of Budapest in 2008) improves life quality, mitigates air and noise burden on Budapest's roads and regulates traffic. Due to the Freight Transport Strategy for Budapest, the access of freight vehicles exceeding weight limits of the designated zones in Budapest are regulated. Traffic in peak hours is lowered and access permit of extremely big vehicles is restricted. The scope of the Regulation For Freight Transport stipulating the zones where total weight restrictions are applicable covers the freights, tractors, agricultural tractors, slow vehicles and combination vehicles running within the administrative boundaries and on roads in Budapest. The total weight restriction is non-applicable for buses and individual cars. From 1 January 2016 vehicles in the environmental category EURO 0 and 1 are not entitled to access permit for all 3.5 tons weight restricted zones. Zone signs designating zones for total weight restrictions (3.5 tons;

7.5 tons; 12 tons) defined in the Freight Transport Strategy for Budapest relate to the permitted maximum total weight of a vehicle.

In regional and national level the Integrated Transport Development Operational Program (IKOP) contains several projects for harbour developments along the river Danube for transhipment of freight between ship and rail/road, which is an important measure to enable low carbon freight transportation.

4. Is low carbon logistics part of mobility planning in your region?

BMT contains the following six freight-specific measures ensuring the development of low-carbon logistic planning.

- Development of an intelligent city-logistic network

The spread of intelligent systems can also contribute to the development of an advanced, environmentally-friendly city-logistic network. Recommended study areas: connecting the public road supply chain to a terminal point ("last mile, "last metre"), optimal vehicle parameters and low emission solutions, the use of electric vehicles, planning of placing alternative freight vehicles (freight bicycles, electric modes of freight transport) into operation, supporting freight traffic off- peak traffic hours, designating package points and consolidation centres, and introducing intelligent posts that indicate loading areas and the IT systems that support them.

- Development of logistics centres, consolidation centres and their connections

Logistics centres host economic activities that have less burden on environment, yet attract considerable traffic. An important aspect of their establishment is to position them not only in the vicinity of Budapest but at the intersection of high capacity networks of several modes of transportation (air, water, rail and road) with the consideration of regional and national connections.

Additionally, it is also necessary to develop more, smaller transhipment facilities (consolidation centres) within the city's inner zone, which could provide for "last mile" and "last metre" shipments to protected zones, road sections, and pedestrian zones with the use of small, environmentally friendly (zero emissions) vehicles.

- Environmentally friendly technologies in freight transport

The current Freight Transport Strategy for Budapest specifies the measures until 2018 for promoting environmentally friendly vehicles and for gradually limiting polluting vehicles. Simultaneously to the restrictions related to environmental categories, the support of environmentally friendly vehicles with alternative modes of propulsion can also be gradually strengthened (electric, hydrogen and hybrid technologies, human-powered transport, freight bicycles). By spreading and applying intelligent systems and providing real-time information services, traffic congestions can be significantly mitigated and the efficiency of city logistics can be further enhanced.

The Freight Transport Strategy for Budapest has been an access regulation scheme since 2009 operable for roads on the whole territory of Budapest to mitigate traffic and regulate road transport in harmony with the BMT. The bottomline of the strategy is to set freight restrictions on the whole territory of Budapest, encouraging transit freight traffic use the M0 motor ring, instead of city roads. In addition, also such roads have been designated through which major industrial and logistics areas can be reached without the need of access permit. The Freight Transport Strategy for Budapest contains the following environmental restrictions and planned measures:

- Since 01.01.2014 vehicles with EURO0 or EURO1 engines are not allowed into the highly protected areas
- Since 01.01.2016 freight vehicles with EURO 0,1,2 engines have to pay 20% extra, with EURO3 engines have to pay 10% extra for the access permits
- Since 01.01.2016 freight vehicles with EURO0 or EURO1 engines are not allowed into the 3,5 t weight restricted zones

- From 01.01.2018 freight vehicles with EURO0 or EURO1 engines are not allowed into the 7,5 t weight restricted zones

From 01.01.2018 the number of routes accessible in the destination traffic (without access permit) are reduced extensively

- More stringent regulations for the zoning system, based on the total weight of vehicles and traffic restrictions based on environmental characteristics

Freight traffic in the city should be provided by low emissions freight vehicles; for example, the application of electric, hydrogen, and hybrid technologies or the use of human-powered transport will decrease not only pollutant emissions, but also noise pollution. In freight transport, a more effective solution is required for linking long-distance shipping and the last section of transport (the "last mile"). The objective is to have individual deliveries or the "least effective" section of shipping to be as short as possible. The use of real-time traffic control supported with intelligent transportation systems can be used to shorten delivery times and decrease congestion in the last section of the delivery.

- Operation and development of the freight transport access regulation system

Through the Budapest Freight Traffic Strategy a system has been developed that keeps transit shipments away from the city, but makes accessing the city's manufacturing and logistics sites easier. Transit freight traffic is successfully regulated by limited traffic zones (freight traffic zones). The purpose of the measures to be introduced between 2014 and 2018 is to regulate and influence the route selection and the period of freight transportation in Budapest. By reducing the number and length of the radial routes serving destination traffic served by mainly 40-ton shipments, the relocation of sites operating on inner urban logistics areas, but not serving the city per se, should be encouraged. This process may also be promoted by the increase of supply along the outer logistics ring and by growing real-estate developments in the 'brown zone'.

- Territorial and time-based regulations of logistics services, city logistics tasks

An important part of the urban logistics system are the terminals (designated loading areas) that serve retail stores, the increasing use of which is an increasing problem in the urban structure. The designated loading network and the connected regulatory background (for example, the issuance of permits) serving the city's logistics tasks has been operating for decades and has barely changed in recent years. Meanwhile, the development of public areas in certain parts of the city has been dynamic and new functions have appeared that require a significant logistics background. Especial attention should be devoted to the IT-based organization and supervision of urban freight traffic and to optimizing the use of designated loading areas in public areas (which primarily serve basic functions).

In freight transportation, the interface between long-distance transport and the last phase of transport (last-mile) should be organised more efficiently to cut individual delivery, (i.e. the least effective phase of freight transportation) shorter. The use of intelligent transport systems contributes to the reduction of delivery times and congestion. The purpose of regulating the timing of city logistics services is to make sure that most of the urban freight deliveries are made at night in order to ease the problem of road congestion during the morning and afternoon peak hours.

To make night-time freight transport more appealing, surfaces suitable for loading can be expanded and new areas can be included or used in combination (i.e. night bus lanes, taxi stations, etc.).

5. How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?

According to the general goal of BMT, the transport of Budapest must improve the competitiveness of the city and its region and must also contribute to establishing a sustainable, liveable, attractive and healthy urban environment. The operational goals required for achieving the strategic objectives (liveable urban environment, safe, predictable and dynamic transport services, cooperative regional relations) appear in four areas of intervention: infrastructure, vehicles, services and the governance system.

In the region logistic centres are settled around the M0 motorway, which is the main ring road around Budapest (not yet a full ring), located at the city boundaries. This helps the main freight transport flows to avoid the city roads and other small roads within the settlements. An important low carbon logistics pillar is the railway network. Nine of the eleven railway lines leading to Budapest are electrified (one more is currently being electrified) and they carry 99% of the rail freight volume. Furthermore the main rail logistic centre in south Budapest is also located near to the M0 motorway and thus well connected to the road network.

There are important plans being developed to enable electric mobility countrywide, establishing an electric charger network with fast chargers along the motorways in the first step. As further measures, the charging network will be developed in the bigger cities and settlements. This will help the shift from conventional fuels to electric traction systems not only for private cars, but also for freight vehicles.

6. What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).

The operational goals required for achieving the strategic objectives (liveable urban environment, safe, predictable and dynamic transport services, cooperative regional relations) appear in four areas of intervention: infrastructure, vehicles, services and the governance system, i.e. more connections, attractive vehicles, better services and efficient governance. The strategic objectives of the four areas of intervention are reflected in the following operational goals:

- implementation of liveable public spaces,
- integrated network development,
- interoperable systems and intermodal connections,
- environmentally friendly technologies,
- comfortable, passenger friendly vehicles,
- active and conscious awareness-raising,
- improving the quality of service,
- consistent regulation, and
- regional cooperation.

In accordance with the EU guidelines, one of the objectives of future developments is to reduce the level of environmental pollution caused by public transport vehicles operating in Budapest. Apart from the renewal of the public transport vehicle fleet, the measures regulating the taxi and city logistics services also encourage the improvement of the environmental characteristics of the vehicles used in Budapest in order to make the air cleaner in the capital city.

BMT contains for example the following freight-specific measures:

- Development of an intelligent city-logistic network
- Development of logistics centres, consolidation centres and their connections
- Environmentally friendly technologies in freight transport
- More stringent regulations for the zoning system, based on the total weight of vehicles and traffic restrictions based on environmental characteristics
- Operation and development of the freight transport access regulation system
- Territorial and time-based regulations of logistics services, city logistics tasks

7. How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?

In harmony with the SUMP, two freight and city logistics related documents define the operative ground rules of urban freight transport in Budapest. The main goal of the Freight Transport Strategy for Budapest is to set freight

restrictions on the whole territory of Budapest, making transit freight traffic use the M0 motor ring instead of city roads. The Freight Transport Strategy for Budapest (based on two decrees made by the General Assembly of Budapest in 2008) improves life quality, mitigates air and noise burden on Budapest's roads and regulates traffic. There are 15 restricted and 11 protected zones in Budapest to mitigate environmental burden, improve life quality of Budapest's residents and protect areas with outstanding values. The freight access system fosters harmonised goods delivery, thus road traffic can be mitigated and air- and noise burden can be reduced. The bottom-line of the strategy is to set freight restrictions on the whole territory of Budapest, encouraging transit freight traffic use the M0 motor ring, instead of city roads. In addition, also such roads have been designated through which major industrial and logistics areas can be reached without the need of access permit. The Freight Transport Strategy for Budapest set up a more and more stringent restriction schedule, containing the following environmental restrictions and planned measures:

- Since 01.01.2014 vehicles with EURO0 or EURO1 engines are not allowed into the highly protected areas,
- Since 01.01.2016 freight vehicles with EURO 0,1,2 engines have to pay 20% extra, with EURO3 engines have to pay 10% extra for the access permits,
- Since 01.01.2016 freight vehicles with EURO0 or EURO1 engines are not allowed into the 3,5 t weight restricted zones,
- From 01.01.2018 freight vehicles with EURO0 or EURO1 engines are not allowed into the 7,5 t weight restricted zones,
- From 01.01.2018 the number of routes accessible in the destination traffic (without access permit) are reduced extensively.

8. How are transport companies involved in the planning process? Is the process formal and/or informal?

BMT underwent a wide institutional and public consultation (forums and consultations for citizens and institutions). The results were integrated into the final version of the BMT's objectives. The plan was supplemented with three new measures in total and a total of sixteen measures were amended. In connection with city-logistics BMT received 60 suggestions and recommendations (from a total of 1300 responses). Eight measures regarding city-logistics were refined and extended based on the public consultation.

9. What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?

The current Freight Transport Strategy for Budapest specifies the measures until 2018 for promoting environmentally friendly vehicles and for gradually limiting polluting vehicles. Simultaneously to the restrictions related to environmental categories, the support of environmentally friendly vehicles with alternative modes of propulsion can also be gradually strengthened (electric, hydrogen and hybrid technologies, human-powered transport, freight bicycles). By spreading and applying intelligent systems and providing real-time information services, traffic congestions can be significantly mitigated and the efficiency of city logistics can be further enhanced. Simultaneously to the freight restrictions related to environmental categories, the support of environmentally friendly vehicles with alternative modes of propulsion can also be gradually strengthened (electric, hydrogen and hybrid technologies, human-powered transport, freight bicycles).

The spread of environmentally friendly fuels and zero emissions transportation can be promoted with the introduction of tax and fee discounts that are part of the financial measures aiming at making an impact on transport modes, with the mitigation of the access restrictions imposed for environmental protection reasons, and with the development of a wide coverage of electric charging stations.

As a result of the measure Budapest plans to implement 1100 new e-charging stations until the end of 2018 to encourage the take-up of e-mobility.

Innovative, environmentally friendly development is encouraged in both public and private transport, for example supporting electric carsharing scheme, public bike sharing including electric bicycles. In highly protected zones of the inner city electric buses and trolleybuses operate along with the widespread tram network. City-logistics should follow this trend for the last mile deliveries, freight traffic in the city should be provided by low emissions freight vehicles; for example, the application of electric, hydrogen, and hybrid technologies or the use of human-powered transport will decrease not only pollutant emissions, but also noise pollution.

10. How does the logistic planning interact with the research in the field of mobility?

Recommended study areas according to BMT: connecting the public road supply chain to a terminal point ("last mile, "last metre"), optimal vehicle parameters and low emission solutions, the use of electric vehicles, planning of placing alternative freight vehicles (freight bicycles, electric modes of freight transport) into operation, supporting freight traffic off- peak traffic hours, designating package points and consolidation centres, and introducing intelligent posts that indicate loading areas and the IT systems that support them.

BKK is involved in several international research, development and innovation projects and member of European city networks and professional working groups, following trends and using the gained knowledge in professional preparatory work and decision support.

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

The road operator in Budapest and BKK collect the following data:

- Data of access permits for freight vehicles (number and type of vehicles, weight categories, target zone of the city)
- Data of access permits for all vehicles for protected areas (number and type of vehicles, weight categories, target zone of the city)
- Number and type of vehicles (manual counting annually, in 101 cross-sections)
- General traffic data (speed, vignette, number of vehicles) counted with fix and mobile cameras, loop detectors

All data is used in the macroscopic transport model for Budapest (operated by BKK), available as open data.
Currently BKK is going through a reorganisation process, resulting the establishment of a new department responsible for integrated transportation data management.

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

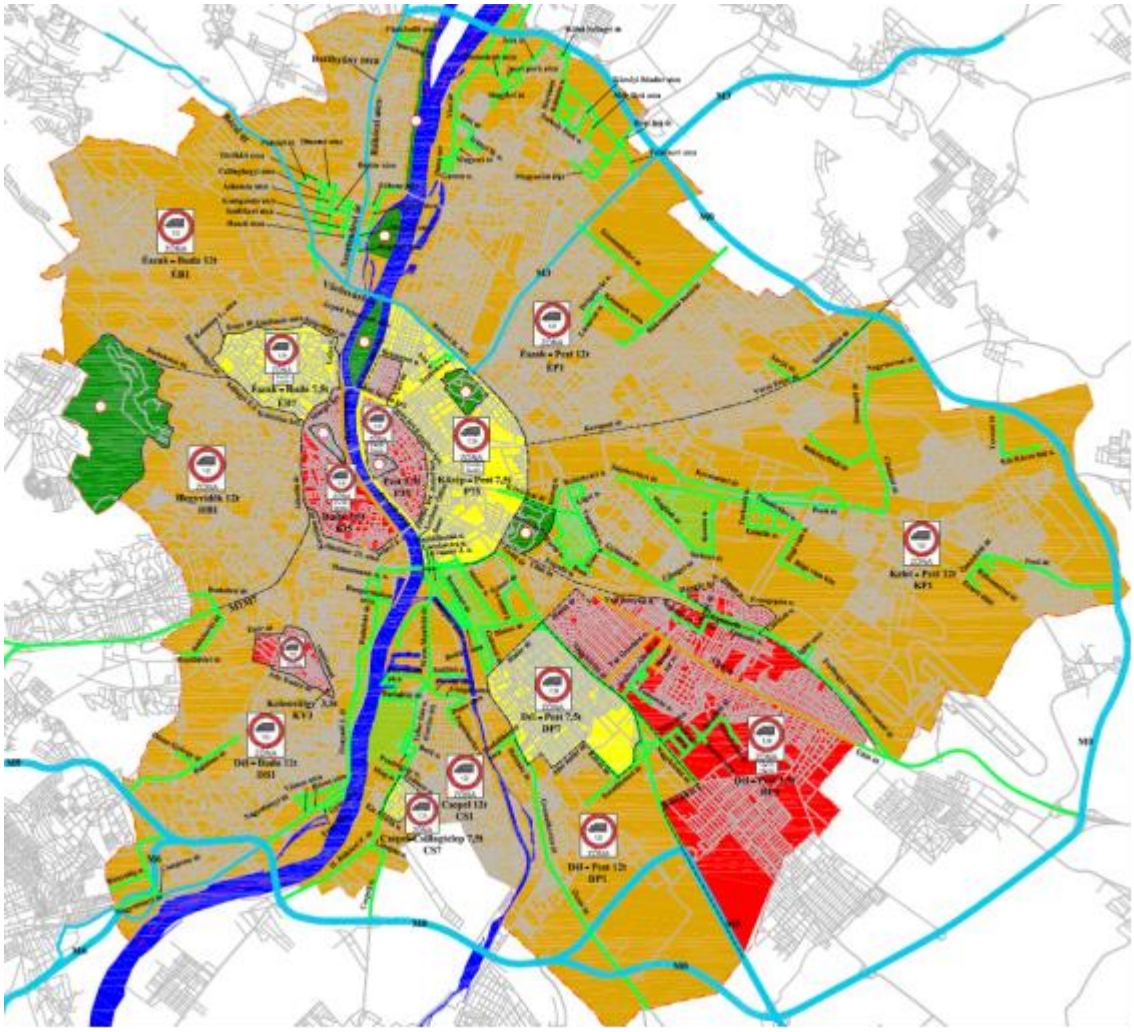
Budapest's road network and industrial-trade centres with high delivery demands are not in line with one another. The applied freight zone system took into account the operation of industrial, logistics and trade units constructed on the "brown zone", due to Budapest's spatial structure, in compliance with stipulations of the Freight Transport Strategy for Budapest. The destination traffic routes not crossing residential areas are exemptions from restrictions, which enable unrestricted and free destination traffic between the city boundary and the "brown area".

The objective of making the created destination traffic road network gradually shortened is to make a long-term conception, by taking interests of residents living in the districts into account, in order to reduce air-and noise burden. BKK intends to make such a long-term conception that enables companies already settled and operable on inclusion areas to be prepared for change and at the same time remain competitive. The so-called preparation period can be divided into three time frames, in line with the Regulation for Freight Transport, as follows: 1st time frame lasted until 31 December 2012. The second time frame lasts between 1 January 2013 and 31 December 2017 and the third time frame is applicable from 2018 for free destination traffic routes in the long run.

In connection with industrial areas in Budapest the Municipality and the Districts make the decisions (as part of the General Assembly) based on strategic planning and preparatory work made by BKK and the road operator, and

based on the Freight Transport Strategy. Logistics companies are involved in the planning process as important stakeholders.

The development of the Freight Transport Strategy for Budapest is well depicted by the map drawn about the total weight restricted zones (brown, yellow, red) and highly protected areas (dark green and grey).



B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsibles, targets (in 5 sentences):

Name of the plan: Balázs Mór Plan (BMT)

Goals: The specific objectives of transport development in Budapest from 2014 are as follows:

- liveable urban environment,
- safe, reliable and dynamic transport,
- cooperation in regional connections.

Time-frame: 2014–2030

Responsibles: BKK Centre for Budapest Transport

Targets: The operational goals required for achieving the strategic objectives (liveable urban environment, safe, predictable and dynamic transport services, cooperative regional relations) appear in four areas of intervention: infrastructure, vehicles, services and the governance system, i.e. more connections, attractive vehicles, better services and efficient governance.

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

Road operator in Budapest and BKK collects vehicular traffic and freight data using ANPR technology, manual counting, freight access permit application data, questionnaires and loop detectors. Statistical data is updated monthly, manual counting data is updated annually.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

The most useful instruments to collect data related to freight traffic in our experience:

- ANPR cameras (in Budapest used for freight access permit control),
- access permit application statistics (in Budapest used for freight transport statistic),
- manual counting (in Budapest used for general traffic counting),
- questionnaires (in Budapest used for updating the macroscopic transport model for Budapest).

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

The multimodal macroscopic transport model for Budapest and its agglomeration is used for evaluation of some specific measures to improve logistic plans. This model is based on large-scale data gathering process and it provides support for decision making processes. The model can provide traffic data (four categories for freight transport as well as car, taxi, public transport and cycling) on sections with no direct traffic counting history, the effect of new infrastructure elements can be examined.

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Redistribution of public bike sharing bikes using cargo bikes	Name: Illegal parking on designated loading areas
Context: The different measures taken to decrease the adverse impacts of freight, including the implementation of the access restriction scheme has produced some effects. Several private sector delivery companies started to use (cargo-)bicycles for logistics transportation, especially for short distances in the Budapest inner city. A part of the road traffic has also been shifted to the waterways, on the river Danube. This is the case for instance for the transport of petrol. The public sector is also concerned as the redistribution of the bicycles of the public bike sharing scheme is made by cargo bikes.	Context: The access of freight transport to inner city locations is incidental: limited parking and stopping possibilities, limited designated loading zones, and the bad utilization of public road capacities often hinder public traffic and community transportation. There are 480 designated loading areas in the city which are often used for illegal parking not letting freight vehicles to stop for loading. Without an improved, intelligent technology-based controlling system or increased number of on the spot public space supervisors and better visibility of loading areas it is hard to mitigate illegal parking on loading areas.
Main authorities and stakeholders involved: BKK Centre for Budapest Transport Közbringa Kft. (public bike sharing operator)	Main authorities and stakeholders involved: BKK Centre for Budapest Transport Public space supervisors or Police
Web links:	Web links:
Why is the practice considered as ‘good’? According to the BMT, in order to mitigate burden on the environment, environmentally friendly transport modes (for example electric-powered and cargo bicycles) have to be prioritised.	Why is the practice considered as ‘bad’? poor reinforcement of designated loading areas, freight vehicles can not use loading areas, queuing at the loading lots, parallel parkings hindering the traffic, lack of “smart technology” (intelligent loading area reservation system, multiuse, shared infrastructure) involved

D. CURRENT EXPERIENCES

1. Has your organization already been involved in a logistics planning process?

BKK as the integrated mobility manager is responsible for preparation and professional decision support, and implementation of the decisions and measures. BKK is also responsible for the professional supervision of the road operator, and as a strategic road operator working on preparation and development of policies.

2. Were you directly involved in the activities or did you engage an external expert?

BKK as the integrated mobility manager finds it important to involve own professional staff in strategic planning. External resource is involved only for certain projects that exceed the capacity of BKK's professional staff.

3. What kind of methodology did you use?

An international benchmark on city-logistics solutions was made to gather information on best practices in similar cities, a detailed status review and problem analysis were conducted in preparation for the BMT and the comprehensive city logistics concept, which identified the root and recurrence causes and mechanisms behind the disturbing factors that occur as symptoms. The concentrated result of the analysis is summarised in a problem tree, which highlights the adverse impact of overall transportation. The following points are related to freight traffic:

- Deteriorating living conditions in urban,
- A lot of road accidents,
- Air pollution, noise pollution, deteriorating environmental quality,
- Congestion, congested roads,
- Increasing pollutant emission.

4. Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?

The mobility planning process does not end with the approval of the developed objectives and measures: the plan is subsequently supplemented with the transport development investment programme developed on the basis of the project evaluation. The monitoring and evaluation method has already been developed, but the whole SUMP circle is not completed yet.

5. Are there any actual results/actions due to the logistics plan?

As a result of the Freight Transport Strategy for Budapest is to set freight restrictions on the whole territory of Budapest, making transit freight traffic use the M0 motor ring, instead of city roads. The freight access system fosters harmonised goods delivery, thus road traffic can be mitigated, infrastructure can be preserved and air- and noise burden can be reduced.

As demonstrated by the selection of Budapest among the three finalists for the 5th SUMP Award on the topic of urban freight, the planning approach of Budapest is considered by the jury of the award as particularly good. The jury also valued the good integration of freight transport in the overall mobility planning strategy of Budapest.

6. Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?

- How are the regulated parking zones and designated loading areas harmonised, regarding the space loading areas take away from paying parking areas?
- How can you motivate freight transport carriers to use urban consolidation centres and switch to smaller, environmentally friendlier vehicles for inner city transport?
- What is your experience with the service provider regarding last mile logistics?
- Are there any good experiences or set agreements between the city, region and companies regarding loading area (time or space) reservation systems?

- Is there any breakthrough in progress in connection with electric freight vehicles? When will the demand for electric freight vehicles reach a critical level for manufacturers?

ROME

A. OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

. Logistics is included in many different plans, depending on level (regional, metropolitan or local). There is a Regional Plan on Mobility, Transport and Logistics (PRMTL) of the Lazio Region, a Municipal and Metropolitan Plan of Urban Mobility (PUM) and a short term Municipal General Plan of Urban Traffic related to Rome. This means that specific laws give the authorities of the Region, Metropolitan Area, and Municipalities responsibility for logistics planning. Lazio Region, Department for Territory, Urban Planning and Mobility is in charge for the logistics planning of Lazio region. The Mobility Department of Capital Rome is the local authority in charge to implement the Logistic Urban Plan.

There are no specific funds dedicated to logistics. Some are from the regional budget, some are from the Ministry of Infrastructure and Transport, and others are from the European Commission and the BEI.

Lazio Region has funded a few of the main strategic interventions of the plan together with the Ministry of Infrastructure and Transport.

The Logistic Urban Plan is funded in general through European/National/local funds.

2. Please describe the cooperation in the field of logistics on a local and regional level.

The Lazio Region promotes consultations with the local authorities and with the main public logistics facilities, like ports, airports, and main freight villages, and the authorities in charge of road and railway network. Meetings are organised to discuss the main issues of the plan in different phases of elaboration.

The Lazio Region has different tables open to discuss logistics problems with stakeholders, mostly related to logistics facilities and accessibility.

Panel discussions have taken place for the logistics planning. Besides Lazio Region, the panel is composed of: Ministry of Infrastructures and Transport, University, Customs Agency, industry associations. Lazio Region is in charge for its coordination.

From a general point of view the local authority, take account of logistic regional plan to implement its measures. Rome Municipality introduced working tables, composed by different stakeholders, to share the measures

regarding the urban freight distribution. Two networks have been established with the main associations of the freight vehicle producers and with the world of logistic chains operating in the Rome city centre: this effort led to the identification of their needs and to the signing of a joint Agreement Protocol between City Administration (CA) and stakeholder.

Through the establishment of the working table on the feasibility check to implement an Urban Freight Terminal (UFT) the process of defining the new rules was visited by stakeholders with representatives of the specific categories involved in the transport of goods. The Ministry of the Environment was involved in this activity because of bad air

quality condition in Rome: they were already supporting sustainable mobility projects in urban areas and they made available incentives for funding for a pilot project for the feasibility check in implementing an Urban Freight Terminal (UFT) serving the Rome city centre.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

The policy documents are all from the European Commission. Each plan refers to the vision and objectives of these documents and develops its own vision and objectives in agreement with them.

The authorities are the same as in point 1. The logistics industry sometime promotes the best practices to show the public how green it is; sometimes it is pushed to be green by local regulations, like pricing to access some sensitive urban areas.

Low carbon reduction is part of the general objectives of the current logistics planning study. Lazio Region aims at the environmental objectives set by the European Union for the Transport sector. Among the main objectives, zero CO2 of the urban logistics within 2030 is one of the most important ones.

Freight distribution is supported by rules system and incentives implemented by Rome Municipality. Rome Municipality approved the New Mobility Master Plan in 2015, a programming tool for the medium period to rationalize existing systems and mobility services and regulate the mobility demand. This Master Plan outlines how to contain impacts of circulating freight vehicles for a “sustainable city”.

4. Is low carbon logistics part of mobility planning in your region?

The Metropolitan General Territorial Plan is organized with:

- Intermodal centres in Civitavecchia, Santa Palomba e Montelibretti, near productive areas, with equipped parking areas serving port, rail and motorway freight traffic;
- Logistic platforms of Fiumicino and Colleferro, serving production and distribution of goods.

The new chosen areas will have high level of functionality, environmental sustainability and accessibility to the main and first level transport web. They are also ruled by PSM (Strategic Metropolitan Poles) and PPM (Metropolitan Productive Activity Poles).

5. How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?

The low carbon logistics is considered a focal point in the freight planning for each territorial level (regional, metropolitan area, urban area), to achieve a sustainable freight distribution.
They are based in general on the Roadmap to a Single European Transport Area (European Commission, 2011a), Roadmap for moving to a competitive low carbon economy in 2050 (European Commission, 2011b) and Commission Guidelines of Sustainable Urban Transport Plan.

The Metropolitan General Territorial Plan and specifically the Mobility System outline the environmental sustainability, define the reduction of negative transport effects (pollution, accidents, etc.) among the goals and specify the linked strategies:

1. Increase the load factor improving the system of logistic platforms through incentives for the users;
2. Improving the traffic flows through: specific railway transport for freight and municipal solid waste, including hubs; planning of back harbor areas for logistic activities and production; improving the railway accessibility to the airports of Fiumicino and Ciampino.

6. What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).

The general regional plan objectives are:

- To bring temperatures to no more than 2°C above pre-industrial levels. The EU has adopted legislation that obliges Member States to reduce greenhouse gas emissions by 20% of 1990 levels by 2020.
- For renewable energy in all forms of transport to account for 10% of total energy consumption of the transport sector by 2020.
- To reduce greenhouse gas emissions (tank-to-wheel) by 60% in comparison with 1990 levels by 2050. This target includes the aviation sector but excludes international maritime. The use of “powered fuel” cars in urban transport must be halved by 2030 by the year 2050.
- To achieve urban logistics with zero CO2 emissions in the main cities by 2030.
- To transfer 30% of freight transport on road to other modes, such as rail or inland waterways, by 2030 on routes longer than 300 km. This percentage should rise to 50% by 2050 thanks to efficient and environmentally sound freight corridors.
- Within 2050 the main airports will be connected to the railways, in particular the high-speed ones. Road transport will be reduced thanks to a better connection of main ports to the railways. Inland terminals will reduce costs and waste of energy resources.
- Between 2030 and 2040, Lazio Region aims at gaining a port system able to grant high passenger and freight mobility standards. In particular, RL wants to recover all those containers sent to ports in Northern Europe or Northern Italy instead to those of Lazio by improving inland terminals and their services.

Drastic reduction of the dependence of the transport sector on oil is in line with the principle of de-carbonization of transport.

Some specific examples of objectives:

- The port of Civitavecchia should serve 50% of the international freight entering Lazio, with facilities for transport and logistics functions and efficient connections with the main transport node of the hinterland.
- The Fiumicino airport air-cargo facility should must carry out functions of high specialisation related to distribution.
- 30% of the distribution of goods in the metropolitan area of Rome should be made through rail terminals with zero emission vehicles by 2030 and 50% by 2050.
- The collection and distribution of goods should be supported by an essential network of platforms large enough to achieve the necessary economies of scale.
- Trucking should mainly have feeder and distribution functions in an environmentally and economically sustainable range of action.
- Each logistics system node should be specialized to avoid duplication and waste of resources.

Specific objectives are related to the accessibility and logistical services needed for existing and future production facilities and urban areas where distribution takes place. These include: elimination of existing and future bottlenecks, which are sources of inefficiencies, high costs, loss of trade; modal rebalancing by reducing the quota on road and increasing the share of rail and ship; rationalisation of freight transport through consolidation of loads and the aggregation of demand; strategic and efficient regional action for the promotion of urban logistics, which proposes a homogeneous framework for action taken by individual municipalities; use of ICT technologies for planning and monitoring the performance of services and travel (eFreight, eCustoms).

The mains objectives included in the New Freight Plan for Capital Rome will be:

- electronic gates for a specific LTZ for goods distribution
- enlargement of the freight LTZ (rail ring limit)

- planned new booking service to optimize parking areas
- timetable and pricing policy evaluation, based on vehicle models and commodities
- van-sharing policy promotion
- increasing the vehicles load capacity and reducing unloaded trips, through new transit points. Concerning the LTZ, UFTs will be used by electric vehicles only (zero emission zones)

7. How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?

Within 2050 the main airports will be connected to the railways, in particular the high-speed ones. Road transport will be reduced thanks to a better connection of main ports to the railways. Inland terminals will reduce costs and waste of energy resources.

Rome has access control and restricted area zones for vehicles used for urban distribution. There is a large restricted area inside the railway ring, which is closed in certain timeslots to 7.5-metre-high trucks for freight. There is a specific restricted access area for freight vehicles denied to Euro III trucks using both petrol and diesel. In addition, in this area the access restrictions for the remaining environmental classes differ according to the environmental class and the weight of the vehicle with restrictions relating to Euro IV, V and VI trucks and electric trucks, LPG, methane, and hybrids.

Freight distribution rules system and incentives regard:

- access rules (freight LTZ set up)
- weight and dimension restriction to enter in LTZ
- time windows
- permissions fee
- ecological vehicles incentives

8. How are transport companies involved in the planning process? Is the process formal and/or informal?

The Region promotes consultations with logistics operators, logistics facilities managers, and, in general, all the supply chain actors in order to provide information on the development of the Plan and gather information on the logistics situation (e.g. demand, supply, costs. Plan information is disseminated through a website.

Meetings are organised to discuss the main issues of the plan in different phases of elaboration. The process will not be formalised until the final phase of adoption of the Plan.
In general Rome Capital involves transport companies with specific working table.

9. What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?

Urban freight terminals with electric van sharing promotion and parking areas for loading and unloading freight.

10. How does the logistic planning interact with the research in the field of mobility?

The Research Centre of Transport and Logistics – Sapienza University has charge of the regional Plan. The Centre has conducted different national and international research projects on logistics. The most important application of the Plan is the use of the railways for the urban distribution.

The logistic planning interacts through European and national research projects to acquire and apply the best practices to the urban context.

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

Data collection and use are essential for logistic planning (University is in charge for their use within the logistic planning).

There is periodic collection of demand and supply data from different sources, mainly public administrations, transport and logistics operators, logistics facilities, and networks owners. The data are available to the public.

Astral S.p.A., hundred per cent owned by Lazio Region, is in charge for infomobility. Traffic Data are also made available by UIRNet (National Logistics Platform). Industry associations provide data on freight.
For Rome Capital see section B2

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

All interested institutions of our territory are part of the discussion panel created for the planning of terminal structures and industrial areas.

The integration is not so easy. There is a sprawl of logistics facilities. One of the objectives of the Regional Plan is to create clusters around the port of Civitavecchia and in some industrial areas.

The Rome Master Plan (Piano Regolatore Generale) outlines the lines of action to design and implementation of mobility infrastructures, including on logistic platforms (Urban Freight Terminal).

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsible, targets (in 5 sentences):
Name of the plan: Regional Plan of Mobility, Transport and Logistics
Goals: The goals are described in point A6
Time frame: Short, medium and long term up to 2040
Responsibles: Regional Agency for Mobility (AREMOL)
Targets: freight, rail network, road network, airport, ports, logistics facilities, urban distribution

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

There are three main dimensions of freight data collection: freight flows between the points of production and consumption (P–C); the logistics characteristics of shipments (e.g. shipment size, frequency of restocking, structure of the supply chain); and the transport characteristics of shipments (e.g. modes, routes).

Freight flows are collected easily by ports, airports, and some public logistics facilities and are available to the public on a yearly basis. Every year ISTAT, the Italian national institute for statistics, uses a costly regional commodity flow survey on trucks, providing a broad picture of national freight flows. These enable basic forecasting/planning, but do not include detailed information on the underlying logistics and transport choices. Thus, they do not support conversion of P–C flows into origin–destination (O–D) freight flows with the relevant characteristics of each leg of the logistics chain.

Another source is the traffic on toll highways. The data are very detailed in relation to the time and space, but do not say anything about the freight transported.

Some general problems can be identified on the basis of CTL's experience in the field of urban freight, specifically regarding data collection:

- Need for the collaboration of stakeholders in order to collect data on origin–destination of deliveries, number of customers, and volumes and type of goods.
- Lack of ITS systems dedicated to urban freight data collection, although an EU directive has been released and EU countries are implementing it.
- Lack of reliable and sound open data provided by public authorities or public agencies devoted to transport management.

Since public authorities cannot collect sensitive private data, a public and independent initiative should be put in action to establish collaboration among urban freight stakeholders, identify problems, and formulate and implement solutions (e.g. Freight Quality Partnerships).

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

Freight planning requires information on shipments and their attributes, such as weight and volume, and the mode of travel and the characteristics of the mode, such as cost, time, and reliability. It is important to understand the behavioural underpinnings of the agents involved in freight. Therefore, information on the

determinants of mode choice of shippers and carriers is equally important in developing a profound understanding of freight.

Therefore, surveys of shippers, carriers, regulators, consignees, and the like are required to develop a profound understanding of how the freight moves.

A useful instrument is GPS loggers that can be fitted in the participants' trucks with a web-based survey. The location data collected by the GPS logger are transmitted in real time to a backend server. The raw data is then processed to detect stops that the truck has made and to match the location observation to a GIS map database. The processed information is displayed to the participants in a web-interface. The participants are asked to validate the data presented to them and to respond to an additional prompted recall questionnaire.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

The simple way is to add the freight flow to passenger flow, to transform the flow in vehicles, and to assign the result to the network to see the traffic volume on the different road stretches. Another way useful for evaluating the impact of urban distribution on the traffic is to use the micro simulation. The first needs very detailed data that can be obtained with GPS (point 2).

The data collected about different types of traffic flows were analysed with the traffic models and were used to evaluate the level of service provided by the networks and facilities.

Name of the plan, goals, time-frame, responsible, targets (in 5 sentences):

Name of the plan: Urban Logistic Plan
Goals: Reduce the impacts of circulating freight vehicles
Time frame: to be carried out within 2/3 years
Responsibles: Mobility Department / Rome Mobility Agency
Targets: Improve freight distribution in urban area, by faciliting logistic operators access and deliveries and while ensuring residents better quality life

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

Currently we have no systematic way to detect and count freight vehicle as well as we have no mathematical model to estimate freight od matrices and traffic flows. We have mathematical models to estimate od matrices and flows for the following transport means: cars, motorbikes, public transport, park and ride, walking/bikes.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

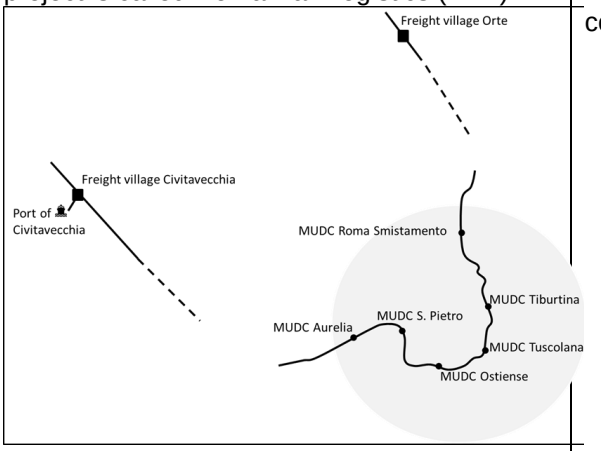
Regarding aggregated flows, traffic surveys are very useful to count number of light duty vehicle and heavy duty vehicles traveling on the network. Regarding the estimation of freight od matrices, interviews to operators and trade association are necessary.

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

If you are interested in the evaluation of the impact on the transport network, mathematical simulation models are absolutely capable to do it. Having in fact available freight od matrices they can be converted in vehicles and

assigned on the network together with all transport means normally used by people. As previously written we have no mathematical models dedicated to freight transport.

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Making distribution logistics in big cities more sustainable: rail transport solutions	Name: Logistics sprawl development
Context: The Lazio Region's Mobility, Transport, and Logistics Plan has the objective of reducing congestion and pollution in Rome. One of the worst polluters is freight distribution with diesel trucks. A strategic measure of the Plan is the use of the several rail stations inside the urban area of Rome as distribution centres. The project is called Roma Rail Logistics (RRL).  Figure. The freight villages and multimodal urban distribution centres (MUDC)	Context: The location of logistics facilities significantly affects not only the activities of urban freight movement but also the urban environment as these facilities represent major originators and receivers of freight. Recently, the phenomenon of logistics sprawl, i.e. the relocation or new locations of logistics facilities away from inner urban areas to suburban areas has been increased in relation to the development of e-commerce.
Main authorities and stakeholders involved: Lazio Region, Rome Municipality, RFI the railways network operator.	Main authorities and stakeholders involved: Region, municipality and e-commerce companies, i.e. the new Amazon distribution centre north of Rome
Web links: www.pianomobilitalazio.it	Web links: http://newwearabletechnology.blogspot.it/2016/07/amazon-opened-distribution-center-near.html
Why is the practice considered as 'good'? The reduction of heavy traffic in the Rome area and the use of low-emission vehicles in the urban area will allow considerable reduction of the environmental impact and enhance the image of the actors involved.	Why is the practice considered as 'bad'? The logistics sprawl contributes to increasing urban freight costs, increasing distance travelled by trucks and emissions, and increasing the distance that logistics employees have to commute.

Good practice	Bad practice
Name: Van Sharing Logeco The Testing of transit points in the city center, according to the new regulations about goods delivery in limited traffic zones, with interventions to rationalize goods distributions	Name:
Context: City center	Context:
Main authorities and stakeholders involved:	Main authorities and stakeholders involved:

Mobility Department, Ministry of Environment Union of Entrepreneurs (Unidustria Lazio), Centre for Excellence on Transport and Logistics (CTL) linked to University of Rome, Rome Mobility Agency	
Web links:	Web links:
Why is the practice considered as 'good'? This pilots aim to finalise the planning of a future logistic centre to be placed nearby the historic centre, as specified in the new Mobility Master Plan of Rome	Why is the practice considered as 'bad'?

D. CURRENT EXPERIENCES

1. Has your organization already been involved in a logistics planning process?

The Research Centre of Transport and Logistics – Sapienza University has been involved several times at regional and local level.

Lazio Region is currently involved in such a process.

The Mobility Department/Rome Mobility Agency has been involved for the drawing up the Strategic Sustainable Mobility Plan, previous plans and in specific projects (Electric van sharing for urban freight distribution, Sustainble MARketdriven Terminal Solutions for Efficient freight Transport - Smartset).

2. Were you directly involved in the activities or did you engage an external expert?

Lazio Region has engaged the Univesity “Sapienza” – CTL.

The Mobility Department/Rome Mobility Agency has been directly involved.

3. What kind of methodology did you use?

The back-casting approach – “what to” – with a vision of future and a desirable scenario.

4. Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?

Yes. In relation to the results of the evaluation, the plan changed the measures proposed by the different authorities or stakeholders or changed the time horizon of the implementation.

The PGTU (Municipal General Plan of Urban Traffic) is on going. To monitor the implementation of the PGTU, the mobility dashboard is available, composed by specific indicators to measure the sustainability plan.

5. Are there any actual results/actions due to the logistics plan?

Some are related to rail connections with the freight villages.

6. Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?

Making urban logistics in cities more sustainable with rail.

PORTO

A. OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

At national level there is no formal legal obligation for local authorities to implement a logistic planning. Nevertheless, the National Program for Climate Change indicates that the municipalities with more than 50.000 inhabitants and the ones that are district capital should implement SUMP and it should include the logistic planning.

The financing will be made essentially under the Structural and Investment Funds for the period 2014-2020, under the Community Strategic Reference Framework (Portugal 2020), and the operational and regional programs implementing it.

2. Please describe the cooperation in the field of logistics on a local and regional level.

Accordingly to the national Mobility Package, a Mobility and Transport Plan, that should include the logistic plan, it's a planning tool that defines the overall strategy for intervention in the organization of accessibility and mobility management. It can be:

- Intermunicipal or metropolitan, if it is understood that the current dynamics, or that are intended to foster within a framework of regional development, are such as to make the development of a Regional (or Metropolitan) Mobility Plan advantageous;
- In the municipal scope, resulting the Mobility Plan in an Action Program of the municipality with respect to mobility management.

The decision on the territorial coverage of the Plan, intermunicipal or municipal, does not invalidate that, although studying its territory as a whole, it is possible to define the deepening of actions in certain areas (urban agglomerations, urban expansion territories, density, etc.) or specific themes like logistics.

What we have in this moment is on the local level, mainly in city centers, the municipalities are doing some regulations related to the logistics and on the regional level the planning is national and mainly relate with large logistic infrastructures.

The cooperation between the national level and local level is usually informal. Mainly, the municipalities are called to participate in working groups related to the impact of the large logistic infrastructures in their territory.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

As we write above there is the National Program for Climate Change which as some measures that ensure the low carbon logistic planning as part of the strategy to put cities at the forefront of sustainable mobility by creating conditions for a paradigm shift in urban mobility.

4. Is low carbon logistics part of mobility planning in your region?

The low carbon logistics should be part of the mobility planning. The SUMP should analyse the impact of the distribution of urban goods at the level of circulation and parking, environment, security, as well as the quality of urban space; it should also characterize the existing regulatory framework as well as the location of the main poles generators / attractors and flows associated with urban distribution.

However the majority of the municipalities in our region didn't have any planning on the urban logistic. There are exceptions, like for instance the Municipality of Maia (situated in the adjacent northern part of Porto) or the municipality of Porto.

In Maia the Sustainable Mobility Plan used a methodology based on an integrate approach, which covers not only the various modes of transport, but also the territorial planning, urban planning, public space, environmental and socio-economic issues, which are crucial for analysing the territorial dynamics of the Municipality closely related to mobility and transport issues for people and goods.

5. **How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?**

The mobility planning implies the definition of a set of measures covering different areas of activity, namely: spatial planning, circulation, cycling mode, pedestrian mode, parking, urban logistics and collective transport. The cities in this metropolitan region of Porto, just like others metropolitans regions, have two big problems related to the transportation of people and goods: congestion and traffic pollution (CO2 and other greenhouse gases).

The law carbon logistics measures are important to objectives thru the balance of the affectation of the public space and to ensure environmental quality. But the reality is that we are only to start now to considered the low carbon logistics in an integrate approach.

6. **What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).**

Organization of productive logistics and minimization of the impacts associated with heavy traffic: Ensure that industrial zones have good road accessibility; Control of the circulation and parking of heavy transport inside the agglomerates; Restrictions on the passage of heavy transport on certain routes by creating alternative routes; Restriction on the distribution of goods in city centres at certain times by heavy transports.

7. **How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?**

The majority of the municipalities in our region don't have restrictive measures to regulated freight transport. The few restrictive measures used to regulate freight transport are related with the access to the cities centres in some hours. There are some ideas to implement other restrictive measures but until now they are only in the paper.

8. **How are transport companies involved in the planning process? Is the process formal and/or informal?**

The process is informal and the companies were heard by participating in questionnaires and invited to participate in Forums.

9. **What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?**

The National Program for Climate Change 2020/2030 as the following measures relate to the low carbon logistic planning: - Demand management (passengers and goods) and urban planning in order to reduce the volume of travel (traffic) and the distance of journeys; - Creation of Zero Emission Zones (ZERs), - Promotion of electric

vehicle in the urban micro logistics. However, these measures are only now being design to implement in our territory.

10. How does the logistic planning interact with the research in the field of mobility?

Although in last years the research in the field of mobility was more related with the mobility of people than the mobility of goods, in our days our policy instruments refer to the mobility as the mobility of goods and passengers.

11. Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?

We don't have data about the flows of goods for the urban logistics, we have only data of the international flows of goods, the flows of goods by maritime port and other similar aggregate data. This aggregate data is available to public.

12. How is the planning of terminal structure and industrial areas integrated in land use planning?

The land use planning is established in municipal and inter-municipal territorial plans thru the classifications and qualifications of the land, accordingly with the local development strategy, the strategic framework define in the regional programme and the laws related to the land use planning and urban planning.

The planning of terminal structure and industrial areas should be define in the local development strategy and be categorize in the land use plan.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsibles, targets (in 5 sentences):
Name of the plan: Maia Urban Logistics Plan (included in Maia Sustainable Mobility Plan)
Goals: Extension of the zones affected to loading and unloading operations; Regulation of loading and unloading and the circulation of the heavy vehicles; Introduction of smaller vehicles in urban distribution; Moving the heavy traffic to main roads.
Time frame: 2014/2024
Responsibles: Municipality of Maia
Targets: Reduction of carbon emissions related with logistics

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

IMT - Instituto da Mobilidade e dos Transportes" for records on the registration of vehicles, inspection and stock of vehicles presumably in circulation, and also road networks;

Statistics Portugal: Results from the Surveys on the Carriage of Goods by Road (ITRM) and on Road Transport of Passengers (ITRP); For railway transport, data available are the result of surveys, namely in the areas of railway infrastructure, railway traffic and underground systems of Lisbon and Oporto. For sea and water inland transport, statistical data are obtained from surveys to entities responsible for ports administration and also for inland waterway; modes of transport associated to the international trade of goods.

On the level of municipalities and metropolitan regions we don't have data related with the freight transport.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

What some municipalities are doing to collected data related to freight transport are surveys and mapping of activities and traffic counts. This useful instruments are something that we should improve, mainly the way we do it (long term methodology: to opposition of doing it so different that isn't possible to compare data) and we could improve by adopting new technologies

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

No**.**

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Maia Urban Logistics Plan (included in Maia Sustainable Mobility Plan)	Name:
Context: The municipality of Maia (situated in the adjacent northern part of Porto) developed a Sustainable Mobility Plan. The methodology used for drawing up the plan is based on an integrated approach, which covers not only the various modes of transport, but also territorial planning, urban planning, public space, environmental and socio-economic issues, which are crucial for analysing the territorial dynamics of the Municipality closely related to mobility and transport issues. One of the questions addressed was the urban logistic in the municipality of Maia.	Context:
Main authorities and stakeholders involved: Municipality of Maia Transport companies	Main authorities and stakeholders involved:
Web links: http://www.cm-maia.pt/index.php/plano-mobilidade-sustentavel/150-faseamento-do-plano	Web links:
Why is the practice considered as 'good'? This practice was considered good for the interdisciplinary approach, working together the technicians from urban plan, environmental, European funds, socio-economic issues and for the involvement of different interests, companies, local elected, residents, workers, transport companies, and other relevant stakeholders.	Why is the practice considered as 'bad'?

D. CURRENT EXPERIENCES

1. **Has your organization already been involved in a logistics planning process?**

No.

2. **Were you directly involved in the activities or did you engage an external expert?**

3. **What kind of methodology did you use?**

4. **Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?**

5. **Are there any actual results/actions due to the logistics plan?**

6. **Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?**

BARCELONA

A. OPEN QUESTIONS ON LOW CARBON LOGISTICS IN MOBILITY PLANNING

1. To what extent are local authorities in charge of logistic planning? And how is logistic planning funded?

The local authorities have the power for planning Urban Freight Transportation (UFT). There is no specific mechanism to finance logistic planning.

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2. Please describe the cooperation in the field of logistics on a local and regional level.

There are no regulated channels of effective cooperation. Municipalities apply policies in their area of competence and the regional government applies its policies in its area of competence. Nevertheless, there are different informal channels of communication between administrations to share experiences and strategies, such as specific meetings, conferences, events, etc.

3. Are there any policy documents or legislation that ensure, regulate or limit the development of low-carbon logistic planning?

There is no specific legislation on the development of low carbon emissions logistics. On the other hand, there are various planning instruments that partially affect the development of the low-carbon logistic planning. At the local scale the SUMP and planning of Low Emission Zones (LEZ). At the regional level, emphasis is placed on the planning of transport infrastructures and the planning of mobility. In addition, the recent law of climate change also applies to mobility.

4. Is low carbon logistics part of mobility planning in your region?

Yes, but it does not play a decisive role.

5. How are low carbon logistics taken into consideration in the objectives of mobility planning in your region?

The reduction of carbon is taken into account as an additional effect to be considered in the objectives of the planning instruments. Within this objective, logistics often has a prominent role.

6. What kind of objectives are there in plans? Please give some examples of objectives (low-carbon demand, restrictive goals etc).

The main objective of the mobility planning is to ensure safe, sustainable, equitable and efficient mobility. Within the strategy to ensure a more sustainable mobility, there are specific sub-objectives related to the topic of low-carbon:

- To facilitate modal shift towards more sustainable modes
- To reduce air pollution resulting from transport
- To moderate energy consumption in transport and reducing its impact on climate change (Reduce of the CO2 emissions)
- To increase the proportion of renewable and “clean” energy consumption

7. How are restrictive measures (e.g. low emission zones, financial measures) used to regulate freight transport?

We are just in the process of planning restrictive measures. We foresee that freight vehicles will be regulated in the same way as other vehicles.

8. **How are transport companies involved in the planning process? Is the process formal and/or informal?**

We are implementing both channels. Local and regional administrations have permanent and regular contact with the main business associations in the sector to share experiences and strategies, such as specific meetings, conferences, events, etc.

9. **What types of demands are there to low-carbon logistics in city centers/pedestrian zones/low emission zones?**

In pedestrian zones or LEZs in the metropolitan area of Barcelona the main concern is air pollution. Public policies are directed at combating this problem. Currently, the criteria are aimed at local pollution reduction (PM and NOx) and climate change.

10. **How does the logistic planning interact with the research in the field of mobility?**

We have no relevant experience in this field.

11. **Is there any collected data about the flows of goods? Is the data used to create logistic plans? Is it shared with the stakeholders within the industry? Is it available as open data?**

Yes, the main data sources are national. The most relevant source of data wold be the EPTMC, an annual survey of carriers that presents the flow of goods across the state. All data are presented at the Logistics and Transport Observatory (http://observatoriotransporte.fomento.es/OTLE/lang_castellano/).

At the regional level, a Logistics Observatory is also being developed (http://www.cimalsa.cat/observatori/observatori_en.htm). Both tools are fundamental in the definition of public policies.

The two observatories collect available dataset of the freight sector. They are the basis for drawing any logistical plan. Most data is open and can be found in the regional, national and European statistical public institutions

12. **How is the planning of terminal structure and industrial areas integrated in land use planning?**

It is a complex model driven by the multiplicity of government authorities. Depending on the type of area it presents a model or another. If it is a strategic area at the national level (i.e. a port) a more complete planning system will be implemented, taking into account the demand for land, transport infrastructure, future needs, etc. In addition, it will be supported by various instruments of planning (national, regional, and local). In the case of normal industrial areas, only a common cover municipal complex models will be used, without further planning.

B. DATA MONITORING AND OTHER TOOLS FOR MANAGING AND UPDATING THE SECTION OF A MOBILITY PLAN RELATED TO LOGISTICS

Name of the plan, goals, time-frame, responsibles, targets (in 5 sentences):
Name of the plan: Metropolitan urban mobility plan
Goals: Reduction of emissions of CO2, PM and NOx.
Time frame: 6 years
Responsible agents: Barcelona Metropolitan Area
Targets: Under construction

1. **Where and how is the most significant data about vehicular traffic, transport networks and freight collected and updated in your territory?**

Traditional instruments such as surveys to carriers and gauges on the roads work best. However, we are starting to work with technological tools that allow us to know more and better the goods transport sector. A good example is the mandatory use of an app for vehicles using loading / unloading areas in Barcelona. This app provides a lot of information (areas with greater demand, slots, etc.) that can be later used to redesign the city (planning spaces), increase efficiency and therefore lower carbon emissions.

2. **What are, in your experience, the most useful instruments to collect data related to freight transport?**

As noted in the previous question, surveys are the main instrument to get to know the main data for this sector. Currently this is complemented by data from this new app.
Regarding traditional sources, we can highlight the Permanent survey of Transport of goods by road (EPTMC), road measures and statistics of the transport of goods by rail, sea and air

3. **Are there any instruments for monitoring and evaluating, and registration of data connected to the mobility plan specifically concerning low carbon logistics? Is it used to improve logistic plans?**

The Logistics Observatories previously mentioned are the best tools to monitor data evolution. They do include specific chapters dedicated to sustainability, and the data published by them are the basis for planning logistics. At the regional level, data are monitored at the Observatory of Logistics (http://www.cimalsa.cat/observatori/observatori_en.htm). At the state level, the data are in the Observatory of Transport and Logistics. (http://observatoriotransporte.fomento.es/OTLE/lang_castellano/).

C. GOOD AND BAD PRACTICE

Good practice	Bad practice
Name: Participatory process to design the Urban Mobility Plan of the Metropolitan Area of Barcelona (diagnosis stage, Urban Freight Transportation chapter)	Name: Metropolitan Program against air pollution
Context: The participative process was made public through a public presentation where the Metropolitan Urban Mobility Plan (hereon PMMU) debate framework, work methodology, schedule and participation process were explained. This presentation took place in the Metropolitan Area of Barcelona (hereon AMB) headquarters and all the institutions and city councils involved in the mobility within the territory were called to participate. The meeting was held on March 4rth 2014. The process was also released to the press through several media agents. Significant agents who had to be called into the participative process were identified and they were invited to participate in the process. The process was organized by means of a number of on-site working sessions. We made a specific workshop about mobility and freight transport (July 3rd 2014)	Context: Last February 2017, the Metropolitan Council of the Metropolitan Area of Barcelona approved the Metropolitan program against air pollution. A package of measures intended to reduce substantially the level of air pollution. With a budget of 46 million euros in 2019, the program will apply 33 specific measures in the fields of mobility (which comes to cause 80% of air pollution) and the environment. The plan also includes measures to improve the environmental sector of freight transport.
Main authorities and stakeholders involved: • Metropolitan Area of Barcelona • 36 metropolitan councils • Significant freight transport agents	Main authorities and stakeholders involved: • Metropolitan Area of Barcelona • 36 metropolitan councils
Web links: • http://www.amb.cat/web/mobilitat/pla-metropolita-de-mobilitat-urbana • http://www.amb.cat/web/mobilitat/pla-metropolita-de-mobilitat-urbana/workshops	Web links: • http://www.amb.cat/en/web/amb/actualitat/noticies/detall/-/noticia/mesures-contra-la-contaminacio-atmosferica/6166113/11696
Why is the practice considered as ‘good’? This process is considered a good practice as it shares the results of the pre-diagnosis technique with the different agents involved and incorporate their vision of mobility into the diagnosis. The process was aimed at political and technical responsible agents of the autonomous government of the Generalitat de Catalunya, town and county councils of the Metropolitan Area of Barcelona, public services linked to mobility, social and economic agents, users’ associations and other relevant agents in the freight transport area.	Why is the practice considered as ‘bad’? The plan focuses on the fight against air pollution without specifically considering low carbon emissions. Metropolitan authorities are much more aware of the problem of air quality that of climate change. In practice, most measures to combat air pollution are converging with the strategy of low carbon; but some cases present contradictions: for example, favouring gasoline vehicles instead of diesel, to locally reduce air pollution, does not contribute to lowering carbon emissions

D. CURRENT EXPERIENCES

1. **Has your organization already been involved in a logistics planning process?**

The AMB is developing the metropolitan urban mobility plan, the planning of the logistics policies have a specific process in this plan

2. **Were you directly involved in the activities or did you engage an external expert?**

We have an external facilitator.

3. **What kind of methodology did you use?**

We are in the process of developing the methodology.

4. **Were the results of the planning procedure evaluated in comparison with set goals? If so, how do the evaluations influence the planning process?**

We are in the process of developing the plan.

5. **Are there any actual results/actions due to the logistics plan?**

We are in the process of developing the plan.

6. **Do you have any special question regarding low-carbon logistic planning, to be discussed in detail at the workshop?**

Our main concern is how to reconcile, in the short term, the fight against air pollution and measures against climate change