



## NEWSLETTER 3 | SEPTEMBER 2017

# Low-Carbon Logistic Planning

**O**n 27 and 28 June 2017 the third workshop of the SMART-MR project took place at the Akershus County Council in Oslo. The title of the workshop was “Low-Carbon Logistic Planning”, and it was organized by Akershus County Council and The City of Oslo, Agency for Urban Environment. Over 50 participants from 8 metropolitan regions – Ljubljana (Slovenia), Oslo and Akershus (Norway), Gothenburg (Sweden), Helsinki (Finland), Budapest (Hungary), Rome (Italy), Porto (Portugal) and Barcelona (Spain)

took part in the workshop.

The first day of the workshop started with presentations from Norwegian stakeholders, and presentations of good practices from all the metropolitan regions. After lunch a site visit/city walk was organized. The second day started with a presentation of the preliminary results of the NORSULP (Sustainable Urban Logistics Plans in Norway) project. This acted as a backdrop for the workshop sessions where various aspects of low-carbon logistic planning were discussed. The different sections of the workshop will be described in more detail later in the newsletter.



Participants of the Oslo Workshop 27.-28. of June 2017

**SMART-MR**  
Interreg Europe



European Union  
European Regional  
Development Fund

SMART-MR (Sustainable measures for achieving resilient transportation in metropolitan regions) is an Interreg Europe project running from April 2016 until March 2021 with a total budget of approximately Euro 2,2 million.

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## Short news from EU

**“Europe on the Move – An agenda for a socially fair transition towards clean, competitive and connected mobility for all” See more here.**

A communication from the European Commission of 31. May 2017.

### TOWARDS SUSTAINABLE MOBILITY

Transport has a long and proud history in Europe. Europe has been instrumental in bringing new technologies and innovation to the world. European aircraft, trains and vehicles are synonymous with world class quality.

Our ambition is that Europe continues to play this role in the future and to be a leader in clean, competitive and connected mobility. To put it simply, we want to make sure that the best low-emission, connected and automated mobility solutions, equipment and vehicles will be developed, offered and manufactured in Europe and that we have in place the most modern infrastructure to support them.

This ambition is needed because **the mobility sector plays a vital role in the EU economy and society**. It is a major employer in itself, and an indispensable driver for the global competitiveness of the wider economy. The free movement of people and goods within the EU's internal market, and the economic, social and cultural benefits of a “Europe without frontiers” rely on easy mobility and an accessible transport network within a Single European Transport Area. A modern mobility system is also a prerequisite for a successful transition to a low-carbon economy in Europe and for reversing the rise in greenhouse gas emissions and air pollution from transport in spite of increased mobility needs.



## Low-carbon logistics – a new step on the SMART-MR journey

Janez Nared, Project Manager

**M**anaging transportation in metropolitan regions is a multidimensional process covering transport infrastructure, public and private transportation, mobility management, logistics, etc. Some aspects are covered by public authorities whilst others depend on inhabitants and economic sectors. One aspect where public authorities have limited competence is in the field of low-carbon logistics. This field is, however, an integral part of the SMART-MR project endeavors, since solving this problem contributes considerably to the quality of life in cities and to the improvement of conditions for businesses. Metropolitan cities are namely crucial nodes of production and consumption and are vulnerable to congestion and air pollution, both resulting from enormous fossil-fuel-driven traffic flows.

In optimizing traffic flows and minimizing pollution, city logistics must follow trends in modern transport development. This is characterized by e-mobility, restrictive traffic regimes in the city centers, and enhanced need for optimized tailor-made services. Supply chain design, planning, and coordination can help reduce carbon emissions and the supply costs. This is important for both higher competitiveness of the economy and improved environmental conditions. Some new forms of city logistics have already succeeded. Others are on the way whose efficiency will be tested. They

all need adequate support from the public authorities where existing good practices can be studied and implemented.

Due to the above mentioned facts, dealing with low-carbon logistics in the SMART-MR project was a considerable challenge. Not only was the topic new to many of the workshop participants, it is challenging per se as it has undergone many changes and new developments in recent time. For this reason the inclusion of experts and stakeholders, who are involved on a daily basis with low-carbon logistics, was of crucial importance. Examples of good practice presented at the workshop have provided an insight into potential solutions for more effective delivery of goods throughout cities. In addition, the issues to be addressed within transport plans has been highlighted.

Although public authorities are not directly included in the delivery of goods and city logistics, they can support the sector by providing effective planning solutions (e.g., reserved areas for delivery trucks and lorries) and by stimulating low-carbon logistics in all possible modes. The workshop in Oslo provided many useful results: exchange of experiences, ideas and good practices. The first tidbits can be seen in this newsletter. For the entire range of possibilities that low-carbon logistics offer, please check the project web site (<https://www.interregeurope.eu/smart-mr/>), especially the project library where all the documents are available for downloading.

# City Walk

The day of the workshop included a walk in Oslo's city center to give the participants an insight into some of the ongoing projects, the state of the art as regards low emission vehicles, car free city center, and low-carbon city distribution.

## Low-carbon test drive

At the first stop, an electric car and a cargo bike from Bring (Norway Post) were demonstrated. Employees from Bring were available to share hands-on experience of using these vehicles in their work. Hydrogen cars were also on show, and it was possible for the participants to test both a hydrogen car and the cargo bike.



The workshop participants had the chance for a test-drive of Bring's cargo bikes

## Charging garage for electric vehicles

The City of Oslo has converted an old bomb shelter and an existing parking garage into a dedicated electric vehicle garage. The garage contains 86 charging stations and car owners gain access by downloading an app. The app also gives information on the number of available spaces.

The cost for establishing a charging station in the garage is approximately € 5000, as compared to around € 6500 for establishing an equivalent station on the street.



Charging garage in Oslo

## Car Free City Center

The car free city center initiative was enacted by the City Council in April 2016, and will last until 2019. The first measures were implemented in the summer of 2017. The aim is to create a better urban environment within a large area of the city center (approximately 1.3 km<sup>2</sup>). City life, pedestrians, cyclists and public transport will take precedence over private cars. A city center with fewer cars makes more room for street life and attractive meeting areas.

The primary focus is to improve city life, and reducing traffic from private cars is a mean to achieve this. Free space previously occupied by cars can be used by the municipality, organizations, business and inhabitants for everything from outside dining, cultural activities, art, bicycle stands or playgrounds.

Six pilot projects were established



## Official Welcome by Vice Mayor of Akershus County Council, Lars Salvesen

*The Vice Mayor of Akershus County Council, Lars Salvesen, opened the work-shop on the 27th of June.*

*We are a fast growing region with several urban areas containing regional cities. Eight out of ten people live in urban areas in Akershus.*

*"The growth in population and urban areas demands an effective strategy for development of the region. In 2014 Oslo and Akershus signed the joint plan for land use and transport planning. We are now working to fulfill the goals of the plan, but as you know, changes and development in land use and transport planning take time", said Salvesen in his opening speech.*

*"Akershus and Oslo have recently agreed on a new differentiated charging system for vehicles in the toll ring. Toll ring charges will take account of both environmental emissions and whether the toll ring is crossed during the rush hour. The toll ring will therefore function as both a restrictive measure and a financial instrument. Electric vehicles are currently exempt from toll ring charges until 2019, when a moderate toll will be applied. However, hydrogen fuel cell cars will continue to be exempted", said Salvesen.*

*"In order to achieve the goals in our plan, we are reliant on the efforts of local councils in our region, both in terms of spatial planning, and the introduction of restrictive measures, for example, parking restrictions.*

*We are very happy to be involved in interregional cooperation, as is the case in this project. We find that the exchange of experience is very useful in identifying good practices", said Vice Mayor Lars Salvesen.*

**Good practice in Ljubljana:  
A web portal for support and  
promotion of low-carbon city  
logistics**

As a result of the CIVITAS ELAN project the Institute of Traffic and Transport Ljubljana and The City of Ljubljana launched a web portal for support and promotion of low-carbon logistics in 2012. The aim was to promote and increase the awareness of delivery companies, shop owners, citizens, local authorities and other stakeholders about sustainable freight logistics. The following objectives were important in the project:

- To carry out transport research on the flows of goods 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.



This web portal 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. There have been several events to promote the measure, including three-day training sessions for efficient



Oslo City Hall

in the center of Oslo during the spring and summer of 2017. The workshop participants were able to examine the building of an outdoor office space powered by solar cells, as well as the ongoing transformation of the city.

**Cargo Bike Micro Terminal**

DHL Express have started delivery of parcels and express goods for Oslo central area using electric cargo bikes, replacing diesel engined cargo vans. This is made possible by establishing a small depot or micro terminal in central Oslo, and reorganizing the logistics with this new infrastructure. One cargo van picks up the goods at the DHL main terminal some 20 km north of Oslo, and transports the load to the microterminal, in the early morning hours, for further distribution with electric cargo bikes.

At present DHL serves Oslo central area with 8 cargo vans. The new micoterminal system will reduce the number of vehicles to only 5. The e-bikes are charged over night at the micro terminal. The DHL vans ship the parcels to the container early in the morning, and subsequently the e-bikers transport the goods the last mile in the offices and shops opening hours. According to DHL it is profitable to exchange the vans



Outside the container used as a Cargo Bike Micro Terminal

with e-bikes. One e-bike costs some € 10.000, and a diesel van costs around € 60.000 . This is a development project, and hopefully it will work satisfactorily, and as such the electric cargo bike services will be extended to other parts of Oslo.

The project is a cooperation effort between DHL, City of Oslo/The Bicycle Agency and the Norwegian Public Roads Administration/City Logistics project. The Institute for Transport Economics will evaluate the results in due course.



Participants on the first day of the workshop

## Summary from the presentations

### Climate and energy strategy for Oslo – Agency for Climate, City of Oslo

The Head of mobility Eric Rambech explained the climate and energy strategy for Oslo developed during a three-year multidisciplinary and cross-sectoral process. More than 40 organisations were involved, including agencies within the City of Oslo, the business community, research institutions, and state-owned enterprises. The strategy entails ambitious targets for reductions in greenhouse gas emissions, which are set to be reduced by 50% by the year 2020 and 95% by 2030 compared to the 1990 level. These main goals are broken down into target areas for transport, energy, buildings, waste, as well as climate management.

Sixty-five percent of the CO<sup>2</sup> emissions in Oslo are from the transport sector – a high share from a city that has very limited emissions from its energy sector and not much industrial activity. The planned approach to achieving emission cuts in transport is in ensuring a shift from the private car to public transport, to promoting biking and walking, and to making the distribution of goods more efficient. In addition, a shift to low or zero emission (non-fossil) transport is the key.

The climate and energy strategy is supported by 16 key initiatives. While in

the transport sector traffic reduction is an important mean, most initiatives are oriented towards easier, cheaper and better use of zero-emission vehicles (cars, vans, trucks and even ships).

A climate budget introduced for the implementation and follow-up of the strategy aims to answer the following key questions:

- i. How big are the emission reductions that are needed?
- ii. What measures have to be implemented?
- iii. When should results start filtering through?
- iv. What are the municipality costs?

The climate and energy strategy is available [here](#).

### The environmental policy of Norway's largest grocery wholesaler – ASKO

Silje Eikrem presented the environmental policy of ASKO, which is Norway's largest grocery wholesaler and distributor, serving 16,000 customers using more than 600 trucks every day. ASKO's ambitious environmental goals by the year 2020 are: use of 100% renewable fuels, 20% reduced energy consumption, and self-sufficiency in the provision of clean energy/renewable energy.

freight delivery. A national conference on sustainable freight delivery was also organized 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.

### Good practice in Oslo: Underground facilities for delivery of goods

When planning the business and residential complexes at Aker Brygge, Tjuvholmen and Barcode, as well as the Oslo City shopping mall (all in the centre of Oslo), the planning authorities focused on optimizing facilities for the delivery of goods and waste collection. Because of the size of the developments it was possible to establish loading and unloading areas in connection with parking garages, with direct access to stores and waste rooms. This was possible because waste handling and delivery of goods was an integral part of planning from the start, making it possible to adjust the building program to facilitate these services.

It can be said that this sort of integrated planning can contribute to lowering emissions because delivery vehicles have a dedicated place to stop, thus eliminating the need to search for parking spaces. In addition, on-street parking by logistics vehicles is reduced, freeing up space for other purposes.



### Good practice Gothenburg: Last mile dilemma including transport and parcel delivery

A disadvantage with using public transport is that you don't get all the way to your final destination. This is known as "The last mile dilemma". It can also

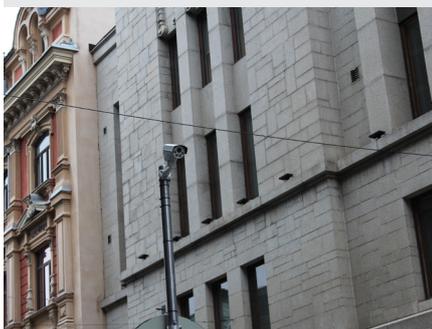
be a challenge carrying your shopping with you on public transport, whether it is something you bought in a physical store, or something you have ordered over the internet which has been delivered to a service point.

In order to solve this dilemma the entrepreneurs in Bzzt! and Västtrafik (the public transport provider in Västra Götaland region), in collaboration with Tempo (a supermarket), Lerum municipality, the City collaboration in Lerum and the Victoria institute, introduced small electric taxi pods (Bzzt!). The pods costs approximately 0.03 EUR/m, and can carry up to two passengers. They can also bring packages home, at a reduced cost service when used in connection with transit by public transport. It is also possible to pick up pre-ordered bags of groceries. An app makes it easy to order the pickup. This service is under development.



### Good practice Helsinki: A pilot project for free parking spaces for city logistics

The pilot project that started in 2016 is a cooperation between the City of Helsinki, Forum Virium (an innovation group for open digital services) and 10 distribution/logistics companies. The test site for the project is the city centre of Helsinki. Finding free parking space for loading and unloading goods is a big problem in the compact city centre. This disturbs the pedestrians and results in higher costs for the companies as well as larger emissions.. The aim of the project is to test whether intelligent



Reaching these goals means acquiring ISO 14001 certification, establishing environmental accounts, setting internal quotas for environmental purposes, and carrying out sustainability assessments for investments.

Among initiatives and measures already achieved is the procurement of Norway's first battery electric truck in 2016. This vehicle has a payload of 7 tonnes and a range of 200 kilometres, while charging takes five hours to complete. ASKO uses biofuels and, at present, ASKO has 16 trucks using Hydro-treated Vegetable Oils (HVO), 5 biogas trucks and 2 bioethanol trucks. The company operates on different levels, optimising distribution by focusing on increased fill rate, reduced "air" in packaging, increased volume per mile and improved driving behaviour. In the period 2009 to 2016, the fill rate increased by 36%, while overall CO<sup>2</sup> emissions per m<sup>3</sup> freight decreased by 48.9% from 2008 to 2017.

### The ZERO non-fossil development programme

Torfinn Belbo presented ZERO's vision for emission-free commercial transport. With a focus on technology, ZERO is an environmental foundation putting forward modern solutions to the climate problem. It pushes for (i) electric vehicles, (ii) hydrogen vehicles and (iii) biofuels if a fossil-free transport sector is ever to be achieved in Norway. A key point is that much can be achieved with smarter logistics planning, but that zero goal cannot be reached without a technological shift.

Today, Norway has more than 100,000 electric passenger cars (EVs), but only a few thousand electric vans. ZERO is driving a project aimed at accelerating deployment and development of emission-free commercial vans and trucks. In the project they consider vehicles, charging infrastructure and policy instruments such as vehicle taxation, financial support schemes and road regulations. In the Oslo region, driving forces behind this include the establishment of low carbon emission zones and climate taxes on toll roads, accelerated rollout of charging points (including dedicated points for commercial vehicles), energy stations, a hydrogen strategy and biogas for transport.

### FREVUE (Freight Electrical Vehicles in Urban Europe)

Sture Portvik from the City of Oslo, Agency for Urban Environment, presented how the FREVUE (Freight Electrical Vehicles in Urban Europe) project has contributed to a massive increase in the numbers of quick chargers in Oslo. The project's demonstrator in Oslo is "Electric vehicles performance in low temperature operations". It has shown that electrical freight vehicles are a viable choice. But a necessary pre-condition is access to dedicated quick charging infrastructure, especially during winter.

Three new quick charging stations were established in 2016, contributing to a substantial improvement for Bring (Norway Post) and other operators of electric freight vehicles.

The planned activities in Oslo are:

- Two new quick charging stations per year.
- New "centers of excellence for professional users of EVs", including FEV, EL-Taxis, Craft & Service, Car sharing with EVs etc.
- A new net of semi-quick chargers for Professional users of EVs.
- Environmental demands in public procurement of goods and services (e.g. Buyset).
- Cooperation with industry and NGOs.
- Other financial and non-financial incentives.
- Participation in new relevant EU-projects for FEVs.

### NORSULP

Karin Fossheim and Jardar Andersen at Norway's Institute of Transport Economics presented the NORSULP (Sustainable Urban Logistics Plans in Norway) project.

In [Staff Working Document 524](#) (2013) "A call to action on urban logistics", the European Commission pointed to three key challenges facing urban logistics:

1. One is a lack of focus and strategy on urban logistics, with only a few cities having a clearly identified official responsible for urban logistics.
2. Another is a lack of coordination among the actors

involved in urban logistics, and in many cases insufficient dialogue between city authorities and private actors who operate there.

3. Yet another is a lack of data and information, which makes it difficult to improve operational efficiency and long-term planning.

A coordinated effort to optimise urban logistics should be in the interest of stakeholders such as authorities, logistics operators and other businesses. Several European cities are now working on Sustainable Urban Logistics Plans (SULPs). These are bringing local actors together, improving planning and initiating the actions needed to improve the performance and sustainability of urban logistics.

NORSULP will develop guidance for urban logistics planning in a Norwegian context, thus facilitating Sulp development in Norwegian cities and regions. The nine Norwegian local authorities actively involved in the project (Oslo, Bergen, Trondheim, Stavanger, Kristiansand, Tromsø, Fredrikstad, Drammen and Bodø) will support initiation of the Sulp processes. Financed by the Norwegian Research Council's Transport 2025 Program and the Norwegian Public Roads Administration, NORSULP is led by the Institute of Transport Economics (TØI), which collaborates with SINTEF in research activities. The approach is illustrated in Figure 1.

In the first part of the project, the experience of the United Kingdom and

Scandinavian countries with SULPs and urban freight planning indicate that freight planning in Europe is limited, but is gradually increasing. UK and Scandinavian plans, which include elements of urban freight, are often organised strategically with an action plan, or as part of an urban mobility plan. The plans have regional or local visions for urban freight – visions that come into practice through selected policy measures. It is important that these measures satisfy the needs of freight, people and business in the area.

It is too early to say whether the concept of a Sustainable Urban Logistics Plan has been fully applied in these countries. However, the logistics plans focus on sustainability, with some country-specific differences in terms of economic growth, environmental protection and social equity. The regional perspective challenges the explicit focus on urban freight, but at the same time it is important that the regional perspectives against an urban/city aspect are considered. Emphasising a regional perspective can shift the content from urban issues to heavy goods vehicles and long-haul transport resulting in different policy measures.

By providing guidance and a methodology for urban freight planning, governments can promote the up-take of urban freight plans.

The project mapped stakeholder perspectives related to urban logistics planning through interviews and questionnaires among public and private stakeholders in the cities involved. There was overall interest in and willingness

transport tools could be used to optimize the use of parking spaces for distribution and loading

The pilot offers real-time information about free parking spaces to drivers of logistics/delivery companies. It also includes a booking system where drivers can make reservations. 22 (out of 200) parking spaces are included in the booking system. Parking spaces 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.

The real-time information available reduces emissions from distribution traffic and increases the efficiency of distribution by facilitating parking. Information is also produced on the need for parking spaces and the utilization at different times of the day. This information could be used for city planning purposes. It is also valuable to gain experience with parking monitoring through technology.

### Good practice Budapest: Use of cargo bikes to redistribute bikes in a public sharing scheme

The public bike sharing scheme, MOL Bubi, was launched in 2014. There are 112 docking stations and 1286 bikes. On average, 2500 bikes are rented daily. The bikes are mostly used in the direction of the city centre in the morning, and in the opposite direction in the afternoon. As a result the docking stations in the city centre are full in the morning, and the docking stations outside the city centre are full in the afternoon. The bikes therefore need to be redistributed. Instead of using cars to do this, the BKK Centre for Budapest Transport and Közbringa Kft. (public bike sharing operator) has organized redistribution using cargo bikes/trailers. Using 2 trailers and 1 tripod, and dispatcher help, 100-150 bikes are moved daily.

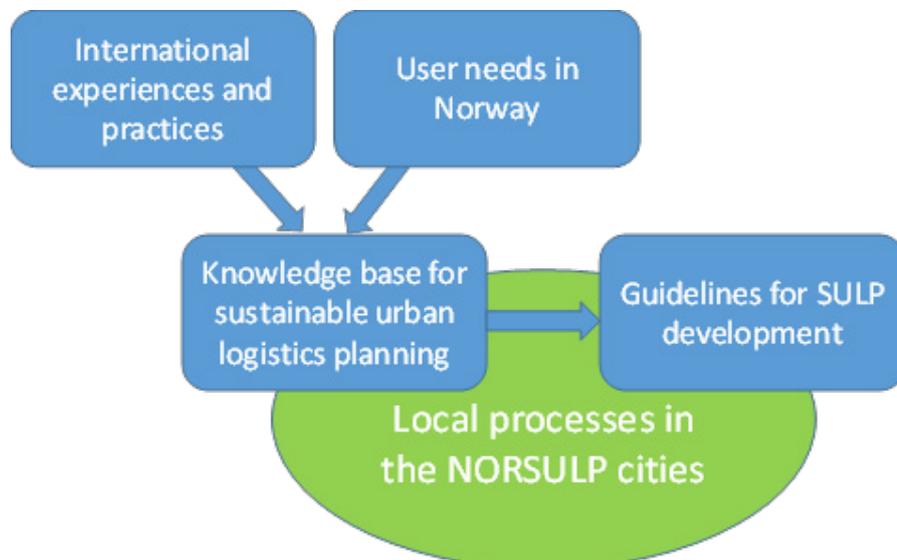


Figure 1. The NORSULP approach. Source: Own setup.



According to the Budapest SUMP (Balázs Mór Plan) environmentally friendly transport modes are to be prioritized. Using cargo bikes to redistribute bikes in the public sharing scheme contributes to the fulfilment of the plan by making bike sharing even more environmentally friendly.

### Good Practice Rome: Making distribution logistics in big cities more sustainable: rail transport solutions

The objective of the Mobility, Transport and Logistics plan in the Lazio Region is to reduce congestion and pollution in Rome. One of the worst polluters is freight distribution by diesel trucks. A strategic measure of the Plan is the use of rail stations within Rome as multimodal urban distribution centers (MUDC). The project is called Roma Rail Logistics (RRL), and involves the Lazio Region, Rome Municipality, and RFI (the railways network operator).

Instead of using trucks for freight distribution, freight will be carried by train from two freight villages north of Rome (Civitavecchia, a seaport, and Orte, an important hub) to 6 different MUDCs. Thereafter the freight is transported to its final destination by low to zero emission vehicles.

The project is influenced by similar projects in Paris, and these show that it is possible to incorporate such multimodal distribution centres in the urban structure.



The project aims to reduce heavy traffic in the Rome area by using existing low-carbon infrastructure for handling freight. Together with the use of low-emission vehicles in the urban area, this project could have a great impact on the levels of congestion and pollution in Rome.



*Workshop session on the second day of the workshop*

to develop an urban freight plan across all stakeholder groups. However, public sector stakeholders claimed that it could be challenging, as the responsibility for logistics planning was spread across municipal agencies. Today, urban freight transport is handled rather haphazardly, and rarely is it overseen by more than one person or department within a municipality. There are different responsibilities related to land-use, building permissions, regulations, parking and accessibility. With scarce resources and a focus on passenger transport, both politically and among citizens, allotting priority to urban freight is a challenge.

From a private sector stakeholder perspective, it is unclear whether stakeholder opinion will be acted upon, i.e. whether a plan will result in specific measures improving the delivery situation.

Overall, municipalities believe that their knowledge on the topic is limited. When, as in Norway, the responsibility for urban freight is spread across different agencies, an urban freight plan can improve the situation. It can provide the municipality with guidance on how to tackle these issues locally and it results in freight planning integrated with passenger transport. Currently, integrated urban mobility plans are of little use in Norwegian cities. However, it could be important to start with a separate urban freight plan, later aiming at combining the elements of mobility and logistics. It is important to emphasize that there are also other considerations just as important as logistics. These plans are means to seeing the overall urban freight situation in the city and not just with a focus

on specific measures. An urban freight plan can contribute to attainment of the climate and environmental targets set by European, national, regional and local governments and to more efficient business and thriving city life.

“An urban freight plan can help private stakeholders to organise and run their business more efficiently, thus reducing their costs” (LSP, private communication, 11 May 2016). Private stakeholders feel that urban freight planning can improve their working conditions while at the same time improve the climate and environment. Municipalities today are among private stakeholders found to be uncoordinated. They find it difficult to figure out who to contact regarding specific issues, since it is sometimes different people dealing with them. An urban freight plan can provide a framework for the industry to work towards and it is an opportunity to see what the public sector thinks of future urban freight transport in their city.

To summarise, we have identified the following key drivers (and barriers) behind the start-up of local low carbon logistics planning: in Norway the key-drivers for local SULPs are:

- Integrated urban freight planning with existing plans and other ongoing processes.
- Engaged individuals – established relationships.
- National and regional authorities and research support.
- Network and sharing of experiences between cities.

Some potential barriers that should



Workshop session on the second day of the workshop

## Good practice Porto/Maia: Maia Urban Logistics Plan

The municipality of Maia (situated in the adjacent northern part of Porto) has made an Urban Logistics Plan as part of their Sustainable Mobility Plan (SUMP). 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. All these factors are crucial for analysing the territorial dynamics related to mobility and transport issues. The SUMP consists of 7 thematic plans and although the mobility of people is the core of the plan it also consists of a strategy for the transport of goods. This is important for the municipality of Maia because of their location close to important national logistic infrastructure. The plan proposes to rethink the tax system for the highway network, to redirect heavy traffic to the highways, to increase knowledge about green solutions within logistics and urban freight, establishing more loading and unloading areas, establishing regulations to restrict access to the city centre, and to introduce smaller-sized or eco-friendly vehicles/solutions in urban distribution.

be considered are:

- Difficulties in allotting priority among several other important plans and needs of cities and their citizens. Challenges in determining priorities – urban freight compared to pedestrians, cycling, etc.
- Capacity in terms of time and resources locally. Having sufficient resources among stakeholders is important in getting them to participate in cooperation meetings or forums.
- Political agenda.
- Fragmented responsibility and inconsistency in personnel.

### Workshop sessions

On the second day of the conference, the participants in the workshop were divided into groups and set to discuss five aspects of low-carbon logistics planning:

- Sustainability and low-carbon logistics planning.
- Cooperation between planning levels and the private sector.
- Promotion of clean vehicles and alternative fuels and modes of transport.
- Trends and future roles of the public sector.
- Setting up a demonstration project for inner city logistics.

Each group dealt with two of the five topics. The main discussion items are summarised below, while conclusions across the workshop sessions are given at the end of the paper.

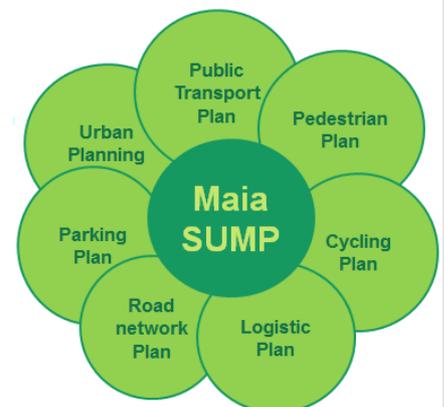
### Topic 1 Sustainability and low-carbon logistics planning

This session dealt with the need to balance sustainability and efficiency and was about how urban logistics plans may ensure a sustainability focus contributing to viable cities.

Combining emission reductions with an emphasis on efficiency improvements is a challenge because people do not necessarily experience the consequence of not planning for sustainability. The municipality has too little information about the impact of deliveries for cities and business. People and businesses are unaware of the consequences of ordering door-to-door instant deliveries. Hence, dissemination and awareness are important. An urban freight plan can provide stakeholders with information – different fees and permits can be included in the plan.

An important question concerned which of the sustainability elements (efficiency, environment or society) is the most important in improving city logistics. While the municipality focuses mostly on social and environmental issues, businesses mainly emphasise efficiency. However, the best solution is based on the compromise achieved when the municipality knows the needs of businesses and citizens. Low-carbon logistics planning should be part of an urban mobility plan and land-use plans since space is an important consideration in urban freight. The combination of regional and municipal planning is also important.

### Topic 2 Cooperation between planning levels and the private sector



The interdisciplinary approach and the participation from stakeholders in the planning process ensure that logistics and urban freight is an important factor in sustainable mobility planning in Maia.

## Good practice Barcelona: Participatory process to design the Urban Mobility Plan of the Metropolitan Area of Barcelona

During the diagnosis stage of the Urban Freight Transportation chapter in the Metropolitan Urban Mobility Plan (PMMU), the Metropolitan Area of Barcelona invited 36 metropolitan councils and significant freight transport agents to take part in the process. The participative process was made public through a public presentation where the debate framework, work methodology, schedule and participation process for the PMMU were explained. The process was also announced in the press through several media agents. Major stakeholders were identified and invited to participate in the process. The process was organized with a number of on-site working sessions, with one specific workshop about mobility and freight transport.



To give different stakeholders insight into the pre-diagnosis technique, and incorporate their vision in early planning phases is useful for both the public authority and the freight transport agents. A better understanding of the challenges experienced by freight distributors, and an understanding of the complexity of mobility planning (and planning in general), will hopefully lead to better solutions and more acceptance for restrictive measures.



*Green urban space in the Barcode area*

This session emphasised cooperation in logistics planning at local city and metropolitan/regional levels as well as between the public and private sectors.

### Cooperation between planning levels

The roles and responsibilities allocated to different planning levels in SMART-MR countries are all different. In Rome, there are four levels of authority in the region, all of different political colour, which makes it a challenge for the levels of authority to cooperate. Budapest and Ljubljana, have no regional level and the municipalities focus on local planning without any formal dialogue with the surrounding regions. In Porto, the regional level has no decision power, which makes cooperation difficult. In Helsinki, there are two regional levels – logistics is included in the land-use plan for the Uusimaa region, but not in the Helsinki region. To summarise, there is limited cooperation between the levels of authority in Rome, Porto, Budapest and Ljubljana. In Helsinki and Norway politicians are more interested, and aware of the importance of sustainable logistics.

### Collaboration with the private sector

The authorities must understand the motivation of the various stakeholders, but act as decision-makers. In public/private partnerships, the public sector is responsible for initiating the processes, opening the dialogue, regulating behaviour, and ensuring that private com-

panies comply with whatever has been agreed. It is also important to monitor the quality of operations to focus on how the measures optimise operations/lower the time of delivery.

### Topic 3 Promoting clean vehicles and alternative fuels and modes of transport

In this session, the group discussed how to motivate freight carriers into using urban consolidation centres (UCC) and switching to smaller, environmentally friendlier vehicles for inner-city transport. Using a UCC could be either compulsory or voluntary. Sometimes there is opposition, so it is better to develop UCCs through dialogue as a voluntary cooperative between public and private entities (with incentives to use, for example, with space for storage/depots for individual supply chains).

In the market for zero emission vehicles, rapid development of battery technologies will make vehicles more competitive, but in the meantime incentives such as reduced road tolls are needed. Other supporting measures could be low emission zones and parking places reserved for electric vehicles. For logistics, new vehicle models need to be dimensioned, with cities “promising” car manufacturers that there will be sufficient demand.

Still, it has to be acknowledged that there is a need for different vehicles for different segments, e.g. cargo bikes cannot deliver heavy loads.

**Topic 4 Trends and future roles**

This session dealt with emerging trends challenging the roles of local and regional authorities. Several were discussed:

- Smaller vehicles and space for goods pick-up.
- Technology-driven solutions
- Night deliveries.
- Showrooms in city centres – Internet ordering – neighbourhood pick-up.
- 3D printing and transport of materials.
- Self-driving vehicles? Robots? Automated distribution?
- Increasing e-commerce?
- Areas and software for a consolidation centre.

Short delivery times generate transport and fragmented freight flows, although one possible way of reducing this is to introduce taxes for city distribution, depending on the time of day and distance. The structure of terminals may also need to change so that transshipment points are closer to city centres and ensure space for logistics activities. For the public sector, walking and cycling should not be considered enemies of logistics; all activities are crucial in vibrant cities.

**Topic 5 How to set up a demonstration project for inner city logistics**

The discussions in this session emphasised the importance of having demonstration projects for clean city logistics and building private/public partnerships. Examples of the different experiences of SMART-MR cities in this domain are:

- Barcelona has an urban consolidation centre with climate-neutral last-mile operations serving both private and municipal recipients free of charge.
- Rome has run a three months' electric van pilot project in the city centre.
- Porto is now implementing a demonstration of mail distribution, bikes, electric scooters and vans.

The development process of new

pilots would benefit from the public sector having a clear urban freight vision including steps/measures. Evaluation of the pilots is important and the public sector has a role in ensuring that this takes place. One possible source of revenue for pilots is advertising, such as “Stadsleveransen” in Gothenburg.

**Key conclusions from the workshop sessions**

Low-carbon logistics planning is not the key task of most participants, but discussions nevertheless showed that there was a willingness to work with logistics planning, and that the topic is acknowledged.

Urban logistics is not given priority in many public administrations. In Sustainable Urban Mobility Plans (SUMPs) it is sometimes claimed that urban logistics are incorporated; however, at best the topic is briefly mentioned. One explanation might be that politicians get more support for dealing with urban mobility issues compared to urban logistics. Creating networks like SMART-MR or NORSULP can increase our knowledge of urban freight solutions and place urban logistics on the agenda.

Several group discussions touched on the issue of limited data on urban logistics, which makes planning difficult. More information is needed to support planning and policy development, which requires local and regional authorities interacting with the private sector.

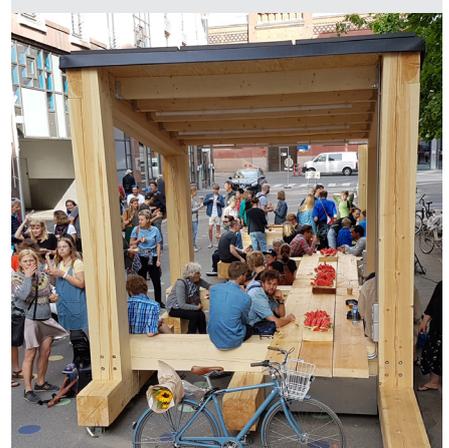
Another finding is that it may be easier to work with the private sector through collaboration than try to change its behaviour through regulations and restrictive measures. One conclusion was that it might be cheaper to offer support from the city rather than to force behavioural change. One measure by which to do this is through an urban freight plan, since this can be used as a way of providing stakeholders with information.

Finally, the regional dimension of urban logistics should be kept in mind, with the interaction between cities and their hinterland key to the overall efficiency and environmental performance of the logistics system.

**Outdoor office and other Car Free City Center pilots**



*The outdoor office provides the possibility to charge your phone and computer*



*The outdoor office, the result of a collaboration between the Agency for Urban Environment and students at The Oslo School of Architecture and Design, on the opening day 27 of June 2017.*



Metropolitan region	Partner
<b>Ljubljana</b>	Scientific Research Centre of the Slovenian Academy of Sciences and Arts 
	Regional Development Agency of Ljubljana Urban Region  RRA LUR regional development agency of Ljubljana urban region
<b>Oslo/Akershus</b>	City of Oslo, The Agency of Urban Environment  City of Oslo Agency for Urban Environment
	Akershus County Council  <b>AKERSHUS</b> County Council
<b>Göteborg</b>	Göteborg Region Association of Local Authorities  The Göteborg Region Association of Local Authorities
<b>Helsinki</b>	Helsinki Region Environmental Services Authority  HSY
<b>Budapest</b>	BKK Centre for Budapest Transport  BUDAPESTI KÖZLEKEDÉSI KÖZPONT
<b>Rome</b>	Metropolitan City of Capital Rome  Città metropolitana di Roma Capitale
<b>Porto</b>	Porto Metropolitan Area  ampporto
<b>Barcelona</b>	Barcelona Metropolitan Area  <b>AMB</b> Àrea Metropolitana de Barcelona

Interreg Europe project SMART-MR (Sustainable measures for achieving resilient transportation in metropolitan regions) supports local and regional authorities in eight European metropolitan regions to improve mobility policies. It also aims to provide sustainable measures for achieving resilient low-carbon transportation and mobility in metropolitan regions of Barcelona, Budapest, Göteborg, Helsinki, Ljubljana, Oslo/Akershus, Porto and Rome. Project will be running from April 2016 until September 2019 and coordinated by Anton Melik Geographical Institute of the Scientific Research Centre of the Slovenian Academy of Sciences and Arts and founded by European Regional Development Fund.

Published by: City of Oslo, Agency of Urban Environment, Akershus County Council / Design: F. Åkenes-Johnsen AFK grafisk senter/ Text: Janez Nared, Jardar Andersen, Birte Adelaide Mobraathen, Helge Jensen, Jan Ivar Bøe, / Photographs: Marius Schumann Vannum, Jan Ivar Bøe, Trude Levare, Robert Levegård, Klemen Gostič, Marta Moreira, Forum Virium, Martin Vik, Agency for Urban Environment. / September 2017, Oslo