

Recommendations on Urban Logistics

Expert Group on Urban Mobility, subgroup 4



Sustainable urban logistics planning (SULP)

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Executive Summary

Sustainable Urban Logistics Plans (SULPs) are strategic frameworks designed to optimise the transportation of goods within urban areas, aiming to reduce environmental impact, improve efficiency, and enhance quality of life. These plans play a critical role in making cities more resilient to climate change and rapid urbanisation while ensuring that logistics services remain efficient and reliable.

It is recommended that **Develop an EU-wide common approach for data collection and voluntary data sharing for SULPs, as local authorities are lacking of quality data** about urban freight transport flows. Data collection and sharing on freight transport often relies on specific agreements between the public and private sectors.

It is recommended that the existing Sulp guidelines are **updated and include new elements** (real estate market, energy provision, circular economy) that have not been considered earlier and **take into account the latest innovations**, such as digitalisation tools like Digital Twins, blockchain, artificial intelligence (AI), and Data Spaces.

It is recommended to **provide expert support and training to local authorities on urban logistics**, as the digital revolution has accelerated logistics planning and execution in urban settings. **The development or reinforcement of educational and training programmes targeting logistics should also be pursued**, as a way for local authorities to recruit more easily professionals with technical expertise on urban freight.

It is recommended to **Set a policy framework at national level to ensure safety, social sustainability, and good working conditions** of all workers of the logistics sector, in particular those that are most affected (e.g. truck drivers, urban deliveries, etc.).

It is recommended to **set a policy framework to encourage collaborative logistics to share vehicles and assets**, that encourages business (shippers) and logistics service providers to cooperate to facilitate collaborative logistics that can maximise use of all available resources. Hubs appear to be the best option for cities to better organise supplies and enhance liveability.

Cities through SULPs to create a policy framework to encourage business (shippers) and logistics service providers to cooperate to facilitate collaborative logistics that can maximise use of all resources (e.g. reducing empty runs).

It is recommended to **strengthen the collaboration between local authorities and the private sector**, building long term mechanism to facilitate public and private dialogues focused on urban freight, such as freight quality partnerships.

It is recommended to **Develop awareness campaigns and incentive schemes to encourage sustainable e-commerce activities from business and citizens**, as their acceptability is greatly enhanced by adequate stakeholder engagement.

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1. Introduction

1.1 Urban logistics: the definition

Urban logistics is vital to all systems and functionalities of cities. Urban logistics delivers construction materials, food and all goods needed for daily life. Without urban logistics, cities will not function.

Urban logistics can be defined as “the movement of things (as distinct from people) to, from, within, and through urban areas.¹” or “those movements of goods that are affected by particularities associated to urban traffic and morphology².” However, the definition of urban logistics varies with difference in type of goods and services, use of transport modes and infrastructure, and spatial and functional structure. In this document, the definition of urban logistics covers:

- Type of goods and services:
 - Business-to-business (B2B) large volumes of goods (e.g. delivery to supermarket)
 - Construction materials and waste
 - Business-to-Consumer (B2C) large volumes of goods (e.g. furniture)
 - B2C small packages
 - Collected waste from business and residents
- Use of transport mode:
 - Road transport: Heavy Duty Vehicles (HDVs), Light Duty Vehicles (LDVs), Cargo bicycles and tricycles, delivery or collection on foot
 - Inland waterway transport
 - Urban railway
 - Air mobility
 - Autonomous vehicles and robots
- Use of infrastructure in addition to transport networks:
 - Charging and refuelling stations
 - Depots, warehouses, and logistics hubs
 - Off road parking facilities and curb side space
- Spatial and functional structure:
 - Central business district (CBD)
 - Urban core area
 - Suburban residential areas
 - Exurbia that has functional areas supporting urban freight distributions, e.g. highway networks, warehouses, or large freight transport hubs (e.g. airport and ports) are not considered by this document.

1.2 Stakeholders: the definition

Urban logistics is an interdisciplinary topic, and its complexity engages with many actors from the public and private sectors. As the Subgroup aims to deliver actionable recommendations for implementing the Urban Mobility Framework (UMF), this document primarily addresses key stakeholders whose actions can have significant impacts on the implementation of the UMF. The main actors addressed by this document are:

- EU Commission Services (e.g. DG MOVE) and EU institutions who can implement transport related projects and policies;

¹ Ogden, K. W. 1992. *Urban Goods Movement: A Guide to Policy and Planning* . Burlington, VT : Ashgate Publishing, Ltd.

² Muñuzuri, J. , J. Larrañeta , L. Onieva , and P. Cortés . 2005 . “Solutions Applicable by Local Administrations for Urban Logistics Improvement.” *Cities* 22 (1): 15 – 28.

- Regional and local authorities as planners and regulators who are responsible for local policies on transport, mobility, environment, energy and economic development.
- Public transport authorities or network operators have not been primarily focused;
- Local residents, associations of citizens.
- Private sectors primarily addressed by this document:
 - o Freight owners/shippers including e-commerce who need freight moved as part of their commercial or manufacturing activities. They are mainly concerned with the cost, capacity, and reliability of deliveries.
 - o Business (construction companies, retailers) who need to receive products and remove waste. They are mainly concerned with consistent and reliable deliveries that minimize inventory costs.
 - o Distributors/Carriers/logistics service providers who store, move, and deliver the goods. They are concerned by factors impacting their operations, particularly congestion and parking difficulties.
 - o Original Equipment Manufacturers (OEMs) who manufacture vehicles for freight transport.

1.3 Urban Logistics: current challenges

Urban freight transport is essential for city life. Urban freight transport contributes between 10% and 20% of vehicle kilometres travelled (VKT) and two of five percent of the employed urban workforce³. According to Eurostat urban freight in 2017 constitutes for almost 15% of the greenhouse gas (GHG) emissions and 30% of air pollutions in city⁴.

Urban freight volumes continues to grow due to urbanisation and most recently, the rise in e-commerce practices. Also, since the COVID-19 pandemic, on-demand and fast deliveries have increased and reshaped urban freight. In 2022, the most common online purchases of goods were clothes, shoes or accessories (ordered by 42% of internet users)⁵.

Increased demand for home delivery of online purchased goods and employment opportunities provided by collaborative economy platforms have resulted in sharp increase of use of cargo-bikes, raising complex issues about demand for infrastructure (cycling lanes, parking) and urban space (logistics hubs in central areas), road safety, workers' right.

Much emphasis is given in recent policy making and EU funding programmes (e.g. Horizon 2020 and Horizon Europe) to parcel and last-mile deliveries. Despite being a visible phenomenon, they only account for about 3% of the total VKT. Conversely, construction logistics accounts for a much more significant 37% of VKT⁶. Construction of new infrastructure and buildings is likely to continue to grow due to urbanisation and needs for building renovation for more energy efficiency. Rubble removal, building material being transported, and various construction-related services require Heavy Goods Vehicles (HGVs) that cannot be replaced with small vehicles. Loading process of HGVs often causes congestion in urban networks.

Urban logistics challenges can be summarised into four categories: emissions and pollutions (air pollution and noise), infrastructure and land use, safety, and workforce. These challenges are often interrelated. For examples, logistics hubs for fast grocery delivery (so called 'dark stores') have been banned by some cities in the Netherlands due to excessive noise level in

³ Urban Freight Research Roadmap, https://www.ertrac.org/wp-content/uploads/2022/07/ERTRAC_Alice_Urban_Freight.pdf

⁴ Energy, transport and environment statistics – 2020 edition, <https://ec.europa.eu/eurostat/web/products-statistical-books/-/ks-dk-20-001>

⁵ [https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20230228-2#:~:text=In%202022%2C%20the%20most%20common,42%25%20of%20internet%20users\).](https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20230228-2#:~:text=In%202022%2C%20the%20most%20common,42%25%20of%20internet%20users).)

⁶ PhD Thesis of KU Leuven, <https://research.kuleuven.be/portal/en/project/3E240107>

residential areas. Congestion caused by loading process can be mitigated by pre-booked curb-side space⁷.

2. Sulp: the state-of-the-art

Increasingly, European cities are widening the scope of these plans to include freight transport and logistics – resulting cases in the development of Sustainable Urban Logistics Plans (SULPs). Many cities have developed their SULPs to meet the challenges of urban freight's environmental impact which represents around 15-20 percent of city flows but generates 30 percent of pollutant emissions.

The EU established a clear strategy for "*near zero emission urban logistics by 2030*" in the 2011 White Paper, which was followed by several supportive initiatives such as the Urban Mobility Package, the Low Emission Strategy of 2016, and the three Mobility packages of 2017 and 2018. EU has also developed a guideline for SULPs (Topic Guide: Sustainable Urban Logistics Planning) through the NOVELOG project in 2014 and an updated version has been published in 2019. The SulpITER⁸ project has developed examples of SULPs for Bologna, Brescia, Budapest, Maribor, Poznan, Rijeka and Stuttgart.

There are several other reports published in recent years that provide guidelines for cities to tackle urban freight, such as "*POLIS – ALICE Joint Guide for advancing together towards zero-emission urban logistics by 2030*"⁹, and *POLIS, TDA and C40's How-to Guide on Zero-Emission Zones for Freight*¹⁰.

More at the national level, in France, the French Ministry for Ecological Transition and Territorial Cohesion selected the *Innovations Territoriales et Logistique Urbaine Durable* (InTerLUD) programme to create forums for dialogue between public and economic players, with the aim of drawing up sustainable urban logistics charters to promote low-carbon, energy-efficient goods transport and helped the development of SULPs in 40 French cities. The Dutch National Climate Agreement was established in 2018 and CO₂ emissions by freight traffic entered the equation. Over a hundred parties committed to implementing Zero-Emission Zones for city logistics by the year 2025¹¹.

2.1 Integration of Urban Logistics with other public policies

According to the UMF, the upgraded SUMP concept should make it clear that the priority is to favour sustainable solutions such as active, collective, public, and shared mobility (including for urban-rural linkages), fully integrating resilience aspects, and innovations based on zero-emission vehicles and solutions. It ought to be enhanced further, considering the requirement for indicators and SUMP requirements for the TEN-T urban nodes¹².

The integration of urban logistics within the global mobility framework of cities is also a key challenge. Most cities have Sustainable Urban Mobility Plans (SUMP) that marginally consider – or even not mention at all urban freight. This translates into difficulties as mobility of passengers and freight cannot work in silos as they share networks, infrastructures, and urban space. The same applies to Low Emission Zones (LEZ), Zero Emissions Zones (ZEZ)

⁷ The Coding the Curbs project, partly funded by EIT Urban Mobility, tested a platform for logistics companies to book loading zones in Groningen and Bucharest, aiming to improve delivery times and reduce unnecessary congestion.

⁸ <https://programme2014-20.interreg-central.eu/Content.Node/SULPiTER/D.T3.2.6-SULP-POLICY-DOCUMENT-Bologna-FUA.pdf>

⁹ <https://www.etp-logistics.eu/polis-and-alice-launch-their-joint-guide-for-advancing-together-towards-zero-emission-urban-logistics-by-2030/>

¹⁰ https://www.polisnetwork.eu/wp-content/uploads/2020/12/ZEZ-F_How-to-Guide_low.pdf

¹¹ <https://www.polisnetwork.eu/article/rotterdam-roadmap/>

¹² TEN-T node requirements: By 31 December 2040, the development of at least one multimodal freight terminal, which may serve several urban nodes.

or any restricted-access area – as they need to be thought out around urban freight challenges as well and day-to-day logistic drivers' reality.

In 2023, the Commission Recommendation on National Support Programmes for Sustainable Urban Mobility Planning stressed the need to help local authorities integrate and improve coordination between SUMP and spatial planning, and improve alignment and synergies with SULPs, and other relevant plans.

2.2 Collaboration between public with private stakeholders

To build public policies and SULPs fitting day-to-day professionals' reality, they need to be included in the building process of such document. The objective is to have an exhaustive and representative roundtable of private actors: both bigger firms and SMEs, as well as all relevant sectors (retailers, wholesalers, craftsmen, operators, LSPs etc.) - which is not an easy task for city planners. A strong component of this collaboration lies in building efficient, trustworthy, and lasting relationships with local stakeholders around SUMP. They need to be solicited carefully, with matters relevant to them, to be updated of progress regularly. Cities need to work on solutions with them, to fit their daily operation challenges and include them in the process.

Collaboration between public and private parties is key to success. A strong political support is an important asset in both the collaboration and relationship with private stakeholders and the implementation phase of the SULPs, as it attests of the engagement of the city on the topic and embodies its ambition to move towards concrete action.

Our observation:

Guidance on SULPs should be more flexible by providing a range of potential actions and new adaptive planning methods to city planners:

- SULPs can be a tool to accelerate the deployment, uptake and upscaling of innovative and sustainable transport solutions already available.
- SULPs currently focus on small volumes of goods and lack focus on logistics for construction sites and other large volume of goods. There is lack of knowledge and awareness of waste management, specific heavy-duty vehicles, and vehicle access regulation related to urban construction sites which have significant impacts on urban logistics.
- Enforcement of regulations is fundamental for proficient urban logistics management. Regulatory enforcement is crucial in maintaining the seamless operation of various logistical aspects within the city and is crucial in safeguarding optimized space allocation.

3. Recommended Actions

R1: Develop an EU-wide common approach for data collection and voluntary data sharing for SULPs

The current “Topic Guide: Sustainable Urban Logistics Planning”¹³ published in 2019 recommends ‘A Data collection framework for UFT’ including ‘*basic data to be collected*’ and ‘*method for data analysis*’. However, it does not define what the essential datasets for SULPs should consist of.

Collecting data from the logistics sector is a very complex task, for several reasons. Although urban logistics has increased its importance in policy making, there is still lack of research towards a better knowledge and modelling of urban freight transport flows, resulting in insufficient data availability.

Data collection and sharing on freight transport often relies on specific agreements between the public and private sectors, which are challenging and often done on a case-by-case situations (due to competition, sensitivity, GDPR issues, etc.). An EU-wide common approach would make data sharing from multiple national businesses (including logistics service providers) easy to support local government.

Action R1.1: Identify needs for the essential dataset for SULPs

In the current guidelines and many of SULPs available in various European cities, there is lack of coherence on needs for the essential dataset. Urban freight is not only about traffic flows and vehicles, but also type of goods transported, loading processes, and storage. The identification of needs for the essential dataset is the first action to enable an EU-wide common approach for data collection for SULPs. Some examples from EU cities below:

In Bologna, in order to evaluate the current situation about freight transport flows for SULP, interviews to traders and transport operators have been conducted. LDVs Origin Destination (OD) matrix has been developed based on Floating Vehicle Data. Data on construction logistics and waste collection has not been included. Therefore, it is not possible to understand percentage of such freight traffic flow account for the total freight transport flow.

Faced with a lack of reliable, exhaustive, and available data, the State and the Regional Council of Ile-de-France, with the technical support of the Paris Region Institute (PRI), have created an observatory to enable the collection of all available freight and logistics resources in order to produce, share and enhance knowledge between the actors in the sector and to inform political decision-making and assess its impact.

In Barcelona, the municipal application AreaDUM allows the city to retrieve real-time information, that can also be used by scholars for the analysis of urban freight mobility¹⁴. The available data, aggregated and anonymised, provide information about delivery zone, type of vehicle, type of activity, day, and time.

Action R1.2: Initiate pilots in different types of cities to create best practices and knowledge in data collection and sharing for SULPs

Cities can act as living laboratories where innovations are experimented and introduced progressively. Living Labs (LLs) are open innovation ecosystems in real-life environments that can be useful for SULPs implementation, as they focus on co-creation, testing and scaling-up innovations. They often are permanent working groups where stakeholders discuss policy

¹³ https://urban-mobility-observatory.transport.ec.europa.eu/index_en

¹⁴ <https://www.lvmt.fr/wp-content/uploads/2019/10/Theme-3.-Nouvelles-donnees-cas-detude-de-Barcelone.pdf>

proposals, share their own opinions and needs while gaining insight into those of others, and actively participate in the implementation of the solutions¹⁵.

Current SULP guidelines make a reference to the needs for standards, governance models, and trusted body to enable data sharing. However, such principles remain at a theoretical level without concrete steps to advance data availability for developing, implementing and monitoring a SULP. There is a lack of real-life demonstrations to implement an holistic approach of data collection to use all existing methodologies and knowledge to make data available and projects, research and discussions on data sharing for SULPs. Projects that demonstrate good practices in a diverse types of cities to collect, analyse data are essential for SULP implementation.

Using floating vehicle data (FVD) to analyse movement is one of many way to collect data to understand freight movement. The city of Stockholm is working with Scania to share data supporting e-mobility planning and freight optimization. Purchasing FVD from private owners or seeking agreement with data owners can be time-consuming and costly.

Other data collection methods, e.g. use Automatic Number Plate Recognition (ANPR) cameras to identify movement. A case study of the analysis of such a data source, with augmented ANPR camera data for the police district of Mechelen - Willebroek (Belgium) shows that 122 ANPR cameras can cover a district of 92,6 square kilometres to enable analysis movements of LDVs and HGVs¹⁶.

Action R1.3: Form a guideline for data collection for SULPs, including types of data needed, methodology to collect and use data for policy development and impact monitoring

Data collection and sharing with freight stakeholders is an increasingly important topic. Retailers and delivery companies should provide data about logistic flows to municipalities, while municipalities need to feed companies involved in urban logistics with updated information on local regulations on traffic, parking, delivery areas, delivery time windows, or the forecasting of road works and street or lane closures.

Guidelines for data collection for SULPs are needed to address the lack of a holistic approach to collect data. A new strategy in this sense should be aligned with the European data strategy and the Sustainable and Smart Mobility Strategy, and coherent with other initiatives towards a common European mobility data space. The guidelines shall make reference to data collection approaches, data purchasing agreements from various stakeholders, how to use the data, and analysis models or tools.

In the Netherlands, freight operators' data sharing has been accelerated by a national provision. More than 40 Dutch cities are required to establish zero-emission zones by 2025, which would include freight. As part of this process, a shared data model with possible advantages like privileged access for enterprises providing data is being planned.

Action R1.4: Form a guideline for local authorities to communicate benefits of data sharing to various types of private sectors

Establish long-term partnerships with logistics operators, e-retailers, and delivery apps could be a good way forward for local authorities to retrieve regularly data and information. Currently, policy makers and urban planners interested in operators' data go operator per operator (non-disclosure agreements and memorandums of understanding need to be carefully crafted),

¹⁵ Nesterova, N., and Quak, H. (2016). A city logistics living lab: A methodological approach. Transportation Research Procedia, 16.

¹⁶ [Analyzing passenger and freight vehicle movements from automatic-Number plate recognition camera data | European Transport Research Review | Full Text \(springeropen.com\)](#)

which makes the process very slow. Moreover, companies are reluctant to provide their data, key to their business models.

Currently, each EU country has its own legal requirements in this context, which has an impact on the possibility of data collection in commercial transactions. Therefore, targeted guidelines should be harmonised at EU level. They should provide clear instructions to local authorities on how to better communicate with various stakeholders of the private sector – e.g. different communication strategies for local SMEs and international businesses to address different needs and expectations. Moreover, local authorities would save time and energy to understand needs of various stakeholders and adopt the guideline for local specifications to foster efficient cooperation with local stakeholders.

R2: Update existing Sulp guidance and include new elements

Currently, Sulp guidelines do not address latest innovation and need to be updated with important elements. Although drafting regulations and testing vehicles occur simultaneously, large-scale implementation of vehicle automation still requires developments of the regulatory framework.

Automation (i.e., autonomous surface and aerial delivery vehicles) might contribute towards the achievement of environmental benefits through replacing or integrating with current delivery systems, including providing the “last mile,” in urban areas.

Another example, energy provision has not been considered and energy providers are not one of among stakeholders covered by current Sulp guidelines. Renewed and updated guidelines should leverage digitalisation tools like Digital Twins, blockchain, artificial intelligence (AI), and Data Spaces as able to generate strategic data for freight-related network planning, investment, and policy formulation more effectively and economically than traditional methods.

An increase attention to the real estate market, with a view to better land-use management (densification and verticalisation of logistics, e.g. urban logistics hotels) or the pooling of already urbanised and multimodal spaces. Regulations and planning play an essential role for supporting these developments and innovations. Sulp should also be an enabler for cities to support, implement, test and upscale innovation and technologies that can greatly contribute to decarbonise urban freight.

Action R2.1: Integrate urban logistics in local strategies and city policies beyond mobility and transport sector

The initial focus of the concept of Sustainable Urban Mobility Plans (Sump) focused on passenger transport and personal mobility. Integrating Sulp with Sump has been recommended by the current guide and by the subgroup on Sump of the Expert Group on Urban Mobility (EGUM).

However, in order to support updates of innovative solutions and use of zero emission vehicles for freight transport, Sulp should consider renewable energy planning, e.g. a sufficiently dense suitable network of charging/ refuelling infrastructures for all sizes logistics vehicles. Urban space planning and land use, e.g. integration of cargo bikes needs, management of construction sites logistics, identifying (public owned) sites to be potentially transformed into logistics hubs, charging/refuelling facilities, or energy generation, flexible use of street space.

Action R2.2: Support consumer engagement including raising awareness on delivery choices and pick-up choices with active mobility

New guidelines shall include elements on how to increase consumer awareness and develop sustainable delivery choices and proper management of returns. SULPs can work with local residents and businesses to set up pick-up choices to enable residents to walk or cycling for picking up their parcels.

The digitalisation of reverse flows should become more circular. Trials and experimentation in Sweden to engage retailers in a digital transformation process, with new capabilities, cost reduction, efficiency in handling returns, etc.

Action R2.3: Include measures that can support circular economy

The need to pursue more sustainable practices has led to the application of circular economy approaches based on 'closed loop' systems that are intended to minimise waste with an emphasis on efficient resource use.

New Sulp guidelines shall consider measures that can support circular economy¹⁷, e.g. waste management, "*refuse, reduce, rethink, reuse, repair, repurpose, recycle*" approach, logistics of re-usable packaging, etc.

The current SULPs guidelines do not address return flows. Cities should address solid return mechanism in combination with the private sector, retailers but also waste collection entities (private or public). SULPs can help cities support return flows for disposed goods (electronic devices, clothes, etc.) by embedding returns in the forward flows (home delivery and pick-up), organise pick-up days and /or embed return, repair and waste into urban service centers.

Action R2.4 Considering setting up urban service centres

Urban service centers / mobility hubs are an extension of urban logistics centers where various shared mobility services are bundled in one place, including logistics services (return, repair, refurbishment, waste management, etc). Cities should encourage and promote the set up of this kind of services.

The combination of passenger and freight mobility services require the cooperation of different types of stakeholders which are not used to cooperate. For the local authorities, this implies some challenges in setting up new forms of cooperation and partnerships between the more traditional public transport operators, the newer mobility services providers, and logistics operators. Recent examples that go in this direction are the mobility hotels opened in 2024 In Oslo and Gothenburg (MOVE21 project).

Sulp guidelines may provide indications on potential options that cities can use (locations, types of buildings) in which urban service centers can be developed and this for both local (smaller) and more general (regional, national) initiatives. The absence of a common starting point for mobility hub projects and the need to build up efforts from the ground level were noted.

Action R2.5: Support on monitoring and evaluation of SULPs' implementation paths and impacts

New guidelines should identify relevant Key Performance Indicators (KPIs) that can be used to evaluate the impacts of SULPs on medium to long term. KPIs should also support policy makers to identify actions needed for future planning and essential datasets needed to for the KPIs. They should be aligned also at the EU and national level to ensure as much as possible consistency and comparison between different geographical areas.

¹⁷ The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended. (Source: European Parliament).

R3: Provide expert support and training to local authorities on urban logistics

The EC has been providing support to local authorities through research and innovation projects, the ELTIS and CIVITAS initiative, and other funding programmes. ELTIS and CIVITAS enabled the collection of all available freight and logistics resources in order to produce, share and enhance knowledge between the actors in the sector and to inform political decision-making and assess its impact. Some of the EU-funded projects provide the technical training and capacity buildings, policy recommendations whilst other projects helped cities directly in implementing SULPs (e.g. the SULPITER project funded by Interreg Programme, and many others).

Action R3.1: To develop training and technical supports on how to develop a comprehensive understanding of the urban freight flows and eco-systems;

The digital revolution has accelerated logistics planning and execution in urban settings. New urban logistics services have emerged thanks to advancements in technology. Local authorities should fully embrace opportunities offered by digitalisation and promote partnerships and dialogue with the private logistics operators to set up common mechanisms and procedures that allow a better knowledge of incoming and outgoing freight flows. Local authorities should also be able to develop adequate skills in data gathering and analysis, to fully assess and manage the quality of data and information gathered (ideally in aggregated and anonymised forms).

Action R3.2: To provide training on how to integrate policies of urban logistics with other policies

Urban freight, often overlooked in mobility strategies, can benefit from initiatives that aim to integrate various aspects of urban planning and mobility. A comprehensive and integrated approach to urban mobility planning is essential to effectively harmonise various aspects of urban mobility, such as city logistics. Multi-level collaboration plays a crucial role, as the need for different national / regional / local government levels need to work together effectively to align policies from the EU to the local level, and corresponding climate goals.

At the EU level, specific calls for capacity building initiatives could be linked to the SUMP National Sump Support Programmes, or capacity building initiatives within the ELTIS and CIVITAS Programmes. At domestic level, national ministries also have various programmes to support cities in developing SULPs, such as the InTerLUD ongoing programme in France.

Action R3.3: To provide expert support in monitoring impact of policy measures on urban logistics and fully integrate policies of urban logistics and propose actions to mitigate negative impacts.

The development or reinforcement of educational and training programmes – especially at university level - for the numerous jobs that urban logistics represents may prove beneficial for both local and national stakeholders. Increasing the attractiveness of carriers in the industry should be one of the main goals of the private sector, and as a way to recruit more easily professionals with technical expertise on urban freight. Local authorities would also greatly benefit from technical experts with skills in urban logistics and supply chain management that are employed full-time and with long-term contracts in the mobility departments.

This would facilitate a continuous monitoring of the actions and measures taken and assess concrete impacts and trends through time, and a regular interaction and exchange with logistics players. Remedial actions could be more easily taken whether the expected outcomes would not be achieved. A guidance on selected KPIs to be tracked and monitored could be useful to local authorities in the long term to facilitate comparisons at EU level.

R4: Set a policy framework at national level to ensure safety, social sustainability, and good working conditions of all workers of the logistics sector

Most likely higher delivery frequencies of smaller orders, typical for online shoppers, generate negative impacts on traffic flows, road safety, loading factors and air quality. Moreover, there are new options of logistics services, e.g. off-peak deliveries, low and zero emission freight vehicles of new generation, the different types of cargo bikes.

As an example, drivers of cargo-bikes may not receive appropriate training on safety, as they are larger and heavier than other cycles and riders require additional skills, and they may be hired through collaborative economy platforms without insurance etc.

Setting a national policy framework to ensure safety and social sustainability addressed to better represent worker categories in the logistics sector is necessary. It should be set at national level policy as restrictive interventions in this sense from a single local authority may result in withdrawing services from a given city or region.

R5: Set a policy framework to encourage collaborative logistics to share vehicles and assets

Cities through SULPs to create a policy framework to encourage business (shippers) and logistics service providers to cooperate to facilitate collaborative logistics that can maximise use of all resources (e.g. reducing empty runs). Cities can be a facilitator to connect businesses and provide incentives schemes.

Hubs appear to be the best option for cities to better organise supplies and enhance liveability. Less vehicles would be required to move the same volume in and out of cities by consolidating various logistic flows into hubs outside of them. However, the recent experiences coming from many EU-funded projects showed that urban consolidation centres (UCCs) were in most cases not continuing their operations after the end of public funding, due to lack of economic viability. Therefore, alternative ways and business models should be tested and explored.

Successful urban collaborative logistics has been operated in Antwerp via the CULT (Collaborative Urban Logistics & Transport) initiative. and will soon be operated in Brussels. In Antwerp, 14 distributors have been collaborating using the same delivery options through the TRI-VIZOR platform. The implementation has been in operation since 2022¹⁸. It can reduce vehicle mileage (driving) by 25% and emissions by 90% through combined city deliveries.

In cities in Sweden, iBoxen has deployed a nationwide infrastructure of delivery boxes to pick up, return and ship packages. The new infrastructure creates sustainable conditions for economic growth. The open, independent and national wide infrastructure for the delivery, return and shipping of parcels across Sweden has been supported by 2 large publicly traded property investment companies - Fastighets AB Balder and SBB Norden AB. It has been seen

¹⁸ cultcitylogistics.be

as an important step in supporting the growth of e-commerce while protecting the environment¹⁹.

Action R5.1: Encourage and facilitate vehicles and logistics assets (e.g. microhubs, parcel lockers) sharing through standardised processes, load units, digital platforms and data spaces.

The adoption of 'white label' hubs might assist logistics service providers to become more sustainable and to provide a significant contribution to zero-emission. The main challenge is to make the micro hub concept profitable, as margins in the sector are small. Therefore, efforts from the local sector should strive to (i) develop a sustainable financing model, (ii) a well thought-out design of the micro hub, which is crucial for efficient use and therefore success, (iii) build micro hubs on the right locations in the city. In this way, white labels is an option but there are other ways (e.g. allowing companies to distribute in districts when they have a minimum volume to distribute in that district or others, e.g. Physical Internet).

Action R5.2: Ensure pick-up points, micro-hubs and parcel lockers can be accessed by residents within 15 minutes walking in most urban areas and can be used by various e-commerce actors.

Micro hubs are placed close to urban consolidation centres, and vehicles are deployed to them on regular routes throughout the day to ensure time-definite delivery windows. Different kinds of micro-hubs have been tested in different cities, also within several EU-funded research projects. However, key challenges of those models rely on stakeholder collaboration, competition issues, infrastructure and resource availability.

Studies in the Netherlands, Italy and Poland reveal that parcel lockers generate a considerable reduction in vehicle-miles travelled and carbon emissions²⁰. Parcel lockers have been in use in Finland since 2011. Their use is very popular and over the years the locker network has expanded to cover the whole country. Most of the parcel lockers are located indoors, usually in stores, kiosks or in shopping centres. Parcel lockers from several operators are often located at the same point.

Action R5.3: Go beyond the urban scale, cities as complex nodes

Many urban regions are net importers of products given the quantity of retail, leisure, commercial firms and public facilities. Urban goods transit often starts and ends at a commercial freight facility. Facilities include depots, warehouses, logistics hubs / fulfillment centres, and intermodal terminals. They are major drivers of goods vehicle activity.

The recently adopted revision of the TEN-T Directive will require urban nodes to (i) develop multimodal passenger hubs and appropriate connections with multimodal freight terminals by 2030 and (ii) have at least one multimodal passenger hub and one multimodal freight terminal by 2040. New generation SULPs should take into account not only the local dimension of urban freight but reflect also planning on a regional scale and ensure alignment with regional, national and TEN-T scale policies.

¹⁹ <https://news.cision.com/iboxen-infrastruktur/r/a-nationwide-infrastructure-of-delivery-boxes-to-be-launched-in-sweden,c3287628>

²⁰ Iwan, S. Kijewska, K. and Lemke, J. (2016) Analysis of Parcel Lockers' Efficiency as the Last Mile Delivery Solution – The Results of the Research in Poland. Transportation Research Procedia, 12, 644–655. <https://doi.org/10.1016/j.trpro.2016.02.018>.

R6: Strengthen the collaboration between local authorities and private sector, establish or maintain effective partners to ensure various actors' contributions to policy making

Cities may consider to build a long term mechanism to facilitate public and private dialogues focused on urban freight. Since many freight operators and business wish to be able to deliver efficiently in cities, to develop an understanding of freight transport issues and needs to form constructive solutions is essential to ensure cities' prosperity.

Freight partnerships are long term partnerships between freight stakeholders concerned with urban freight, that on a formal or informal basis meet regularly to seek solutions to problems and discuss issues that occur in the urban area. It is a partnership between the local government, the freight industry, local businesses, the local community, environmental groups and others with an interest in freight. Some examples are the Flemish 'Green Deal Sustainable Urban Logistics', Brussels's Urban Logistics Green Deal, Rotterdam's Logistiek010, Central London Freight Quality Partnership.

While building such partnerships or initiate dialogues, it is important to ensure the widest participation possible also of the HoReCa²¹ sector and local small and medium enterprises (SMEs), who may lack resources and experience in joining such public-private dialogues.

R7: Develop awareness campaigns and incentive schemes to encourage sustainable e-commerce activities from business and citizens

According to EU's 2023 survey²², 93% of EU citizens believe that climate change is a serious problem. However, many of them are much less aware of environmental impacts of their e-commerce shipping options nor have opportunities to take actions to reduce associated emissions associated with their purchases.

Their acceptability is greatly enhanced by adequate stakeholder engagement, understood as the participation of various interested parties (producers and shippers, freight transport and logistics operators, recipients, residents, local public authorities, and others) in the decision-making process.

Action R7.1: Awareness campaigns to citizens on impacts of e-commerce on environment

When customers are given additional knowledge about how their actions can have an impact on sustainability, it has a favourable influence on their purchasing decisions. This concept is at the core of the CountEmissions EU regulation proposal, which will provide a multimodal, door-to-door harmonised framework to calculate and disclose Well-To-Wheel GHG emissions of transport services.²³ Consumers and operators will be able to shift their choices towards the most environmentally friendly logistics solutions. Retailers may positively contribute to the process by giving more information about the impact upon the environment of single purchases, and proposed alternative options for greener deliveries. Customers are asking for more and more details on the delivery of their purchases. Customers who do not currently have a simple method to grasp the implications of their actions must be given consistent information.

²¹ Hotel, restaurant and café.

²² https://climate.ec.europa.eu/citizens/citizen-support-climate-action_en

²³ [COM/2023/441 final](#)

Action R7.2: Propose more sustainable delivery options to consumers

Retailers may provide and encourage more sustainable delivery practices. Alternative delivery options to customers should not be causing additional flow fragmentation, as this might have negative impacts (e.g., having the standard vehicle and the low- or zero-emissions vehicle deliver). Free returns typically result in extra transportation, which must be handled carefully. Despite the public sector has limited powers in this regard, it could encourage

Action R7.3: Setting up incentive measures to award those who choose sustainable deliveries

There is a limited role so far from governments and cities to nudge consumers decisions on sustainable deliveries. One-off attempts have been made to charge large companies for the use of public space of large e-commerce businesses. However, such an approach towards taxation has found mixed opinions from the public and private sectors about its effectiveness in the medium-long term²⁴. Incentive schemes encouraging businesses to provide various options and information to consumers to enable them to choose the most sustainable options are an alternative.

²⁴ <https://www.etp-logistics.eu/polis-and-alice-webinar-series-2023/>

1. Summary of recommendations (toolkits)

Recommendations	Actions	By whom			
		EC	National ministry of member state	Local authority	Private sector
R1: Develop an EU-wide common approach for data collection and voluntary data sharing for Sulp	Action R1.1: Identify needs for the essential dataset for Sulp	✓	✓	✓	
	Action R1.2: Initiate pilots in diverse types of cities to create best practices and knowledge in data collection and sharing for Sulp			✓	✓
	Action R1.3: Form a guideline for data collection for Sulp including types of data needed, methodology to collect and use data for policy development and impact monitoring	✓	✓	✓	
	Action R1.4: Form a guideline for local authorities to communicate benefits of data sharing to various types of private sectors	✓		✓	
R2: Update existing Sulp guidance and include new elements	Action R2.1: Integrate urban logistics in local strategies and city policies beyond mobility and transport sector		✓	✓	
	Action R2.2: Support consumer engagement including raising awareness on delivery choices and pick-up choices with active mobility		✓	✓	✓

	Action R2.3: Measures that can support circular economy			✓	✓
	Action R2.4 Considering setting up urban service centres			✓	✓
	Action R2.5: Support on monitoring and evaluation of SULPs' implementation paths and impacts	✓	✓		
R3: Provide expert support and training to local authorities on urban logistics	Action R3.1: To develop training and technical supports on how to develop a comprehensive understanding of the urban freight flows and eco-systems		✓	✓	✓
	Action R3.2: To provide training on how to integrate policies of urban logistics with other policies				
	Action R3.3: To provide expert support in monitoring impact of policy measures on urban logistics and fully integrate policies of urban logistics and propose actions to mitigate negative impacts.				
R4: Set a policy framework at national level to ensure safety, social sustainability, and good working conditions of all workers of the logistics sector		✓	✓		
R5: Set a policy framework to encourage collaborative	Action 5.1 Encourage white label logistics vehicles through standardised load units and digital platforms.			✓	✓

logistics to share vehicles and assets	Action 5.2: Ensure pick-up points and micro-hubs be accessed by residents within 15 minutes walking in most urban areas and can be used by various e-commerce actors.			✓	✓
	Action 5.3: Go beyond the urban scale, cities as complex nodes			✓	✓
R6: Strengthen the collaboration between local authorities and private sector, establish or maintain effective partners to ensure various actors' contributions to policy making				✓	✓
R7: Develop awareness campaigns and incentive schemes to encourage sustainable e-commerce activities from busienss and citizens	Action 7.1 Awareness campaigns to citizens on impacts of e-commerce on environment				✓
	Action 7.2 Propose more sustainable delivery options to consumers				✓
	Action 7.3 Setting up incentive measure to award those who choose sustainable delivery				✓

Annex – additional information

List of acronyms and abbreviations

Acronym	Full name
ANPR	Automatic Number Plate Recognition
B2B	Business to Business
B2C	Business to Consumer
CEF	Connecting Europe Facility
CBD	Central Business District
EC	European Commission
EGUM	Expert Group on Urban Mobility
GHG	Green House Gases
HDV	Heavy-Duty Vehicle
HoReCa	Hotellerie – Restaurant - Café
LDV	Light-Duty Vehicle
LEV	Low-Emission Vehicle
LEZ	Low-Emission Zone
LL	Living Lab
KPI	Key Performance Indicators
OEM	Original Equipment Manufacturer
R&I	Research and Innovation
SULP	Sustainable Urban Logistics Plans
SUMP	Sustainable Urban Mobility Plans
UCC	Urban Consolidation Center
UMF	Urban Mobility Framework
ZEZ	Zero-Emission Zones

About the group

The Subgroup 4 of Expert Group on Urban Mobility (EGUM) is dedicated to urban logistics. It is composed by twelve national ministries of EU member states, seven regional governments and city authorities, and ten associations/organizations. This Subgroup is coordinated by ALICE, POLIS and ACEA.

This Subgroup aims to developing a set of recommendations for taking actions to advance the implementation of the Urban Mobility Framework. This document has been jointly developed by the members of the Subgroup 4. The group believes that the recommended actions would ensure a better and improved quality of life in European cities, contribute to climate actions, sustain economic growth and enhance competitiveness of European business.

Inputs were collected from the members of the Subgroup 4 and EGUM plenary through online meetings, in-person meetings and workshops, online questionnaires, online discussion tools (e.g. using Miro board). Members of the Subgroup 4 have exchanged information on policy development, technology developments, market insights, common challenges, and current practices. Results, good practices, and lessons learned from past and ongoing EU funded research and innovation (R&I) projects and relevant Living Labs (LLs) have been taken into consideration.

List of organisations participating to the subgroup

Subgroup leaders
Alliance for Logistics Innovation through Collaboration in Europe, ALICE AISBL European Automobile Manufacturers Association, ACEA POLIS
Cities and Regions
Barcelona Metropolitan Area Bremen Ile-de-France Region Karditsa Stockholm The Hague Toulouse Métropole
Member States
Austria Belgium Czechia Finland France Italy Latvia Lithuania The Netherlands Poland Portugal Spain

Organisations

AVERE - The European Association For Electromobility
Community of European Railway and Infrastructure Companies - CER aisbl
Council of European Municipalities and Regions - CEMR
Cycling industries Europe aisbl (CIE)
European Cyclists Federation (ECF)
European Transport Workers Federation - ETF-Europe
Eurocities
International Road Transport Union - IRU
LEVA-EU
MaaS Alliance

Observers

JRC – Joint Research Centre of the European Commission