Introduction: Roadmaps SURFLOGH (text for full strategy report)

One of the critical elements of the sustainable development of cities is City Logistics. The livability of our cities depends largely on improved air quality, noise reduction, suitable accessibility and road safety. At the same time, we want to benefit from the advantages of city life – entrepreneurs and citizens alike – and continue to receive goods and parcels. The main objective of the Smart Urban Freight Logistics Hubs (SURFLOGH) project, under the Interreg North Sea Region Programme, is to improve the role of logistic hubs and sustainable logistics solutions in the configuration of urban logistics in the North Sea Region.

Since 2017, the SURFLOGH project partners have successfully collaborated to develop, implement and share smart and sustainable solutions with public and private parties concerned with urban logistics. The livability of our cities depends largely on improved air quality, noise reduction, proper accessibility and road safety. At the same time, we want to benefit from the advantages of city life - entrepreneurs and citizens alike - and continue to receive goods and parcels.

The Province of Drenthe (NL), the South East Scotland Transport Partnership (SEStran) (UK), Napier University (UK) and the Cities of Groningen (NL), Mechelen (BE) and Borås (SE) have succeeded in balancing the city logistics conundrum by researching, holding interactive and transnational innovation sessions and consequently testing 17 sustainable transport solutions in medium sized cities in the North Sea Region. Their joint effort has resulted in:

- Collaboration between logistics service providers and retailers, reducing the number of transport movements (i.e. a reduction of more than 150 traffic movements per pilot project);
- The development of logistics city hubs and locker services, in connection with the wide-scale use of electric vehicles and cargo bikes - more than 100,000 parcels have been delivered in a sustainable way;
- The deployment and testing of more than 20 new sustainable vehicles, resulting in a radical reduction in emissions for each pilot project.

These results have contributed to a significantly positive impact on the livability of the inner city zones related to the pilot projects.

In the SURFLOGH project an innovative approach proved to be essential for the long-term prosperity of city hubs. That is why the project set up a specific work package in which several interactive and transnational sessions have been held dealing with innovative urban freight solutions.
The city freight innovation labs functioned as innovation platforms for city hubs and urban and regional logistics. The main role of the city labs was to accelerate innovation from Horizon 1 (process innovation in existing business models) to Horizon 2 (business model innovation) or even Horizon 3 (development of new processes in new business models).

The city labs were organized as open platforms. Target groups from the cities, regions, logistics SMEs, start-ups and service providers were invited to participate in the activities of the platforms and meet and cooperate with all the stakeholders.

The city labs strengthened SURFLOGH efforts to explore and boost new opportunities and business models in urban logistics - combining the mutual knowledge and creativity of urban experts and logistic professionals with the opportunities of the new economy. The city labs brought these different actors together to exchange knowledge, develop pioneering ideas, prepare innovative pilot projects and realize results within policy strategies and the urban logistics system. Each partner organized events and meetings to support these processes in their own regions. .
Results from the city lab activities - such as new business models, ideas for new services and technologies - were used as input for the pilot projects in the cities and regions. Pilot initiators and stakeholders were supported with new tools to boost the success rate of each pilot.
In order to disseminate findings from the city labs (coming from both national and transnational events) to other cities and stakeholders in the North Sea Region, general lessons and insights have been integrated into several Roadmaps, which are elaborated in this document. The roadmaps show different approaches, the do's and don'ts and practical solutions resulting from the activities in the city labs and the SURFLOGH pilots.

The roadmaps are intended to show examples of general approaches that could be applied in different geographies throughout the North Sea Region and beyond.

The roadmaps cover four import themes from the SURFLOGH project:

1. Stakeholder engagement in urban logistics. Engaging with key stakeholders, such as logistics service providers, retailers/shop owners and residents in inner cities, is crucial to the success of any sustainable city distribution policy, concept or project
2. The role of the city or region in sustainable urban logistics. Government bodies can set policies and accelerate sustainable initiatives.
3. The implementation of urban logistics hubs and the use of cargo bikes and electric vehicles. These have shown great potential in the SURFLOGH project
4. The implementation of parcel lockers for the urban last mile. This has proven to be an effective method to contribute to livability and reducing emissions in urban areas.

Each roadmap covers the following aspects:

1. **Why** - the rationale of the theme
2. **What** - the goals and objectives of the theme
3. **How** - different generic approaches from the SURFLOGH project can be applied elsewhere

Each roadmap also includes short descriptions of best practices from the SURFLOGH project partners.

Roadmap 1 – Stakeholder engagement

Why – the rationale:

Engaging with key stakeholders, such as logistics service providers, retailers/shop owners and residents, is crucial to the success of any sustainable city distribution policy, concept or project:

- Key stakeholder opinions and insights are incredibly valuable in the early stages of co-creation, planning and development processes.
- Effective engagement helps translate stakeholder requirements/needs/information into policy or project objectives.
- Effective engagement creates the basis of an effective policy- or project implementation.
- A point of consensus or shared motivation helps stakeholders to arrive at a shared understanding and mutual decision on objectives…
- ….and to share work during the implementation phase of practical trials and projects
- Unique stakeholder perspectives help to discover the strengths and weaknesses of policies or project ideas and provide first-hand knowledge of what is needed to deliver the envisioned outcomes.

What - goals &objectives:

Objectives are connected to a continuum of relevant stakeholder relations. A successful Stakeholder Engagement strategy for city logistics connects the appropriate engagement format to the right stakeholder context (or project phase):

a. Identify: start with the selection of key stakeholders who are linked to critical issues, policy and/or pilot project.
b. Monitor: focus on the beliefs, ideas and actions of key stakeholders. This can be done through scans, searches, conversations and ad-hoc meetings.
c. Message: create and target messages to specific stakeholders.
d. Advocate: enlist support for a specific effort or position.
e. Consult: solicit explicit feedback or input on a project or plan, understand the specific interest of groups of stakeholders and market dynamics.
f. Discuss: initiate or participate in dialogue focused on mutual learning, understanding and/or solutions (including 'co-creation').
g. Commit: aim for mutual agreement/promise to perform certain actions and/or common objectives.
h. Collaborate: share work on common objectives ('co-implementation').

How - 3 different approaches from the perspective of the City /Municipality or Region:

1. <u>Stakeholder engagement through an organized consultation, working group or network, including a strategic plan or City-Logistics covenant</u>:

The city or region can establish a specific City Logistics Working Group or network, with representatives of all key stakeholders. Common objectives (or an agreement to perform certain actions) can result in a mutual strategic plan or covenant. A working group or network focused on

implementation should ideally include all relevant stakeholders, both public and private (logistics service providers, retailers, residents, Municipality and/or Region).

- This approach works best in a situation where:
    - public objectives are clear, including political agreement on the level of the Municipality or Region
    - key stakeholders are known and interested, or committed
- A City Logistics group or network can sometimes be based on another existing consultation format (e.g. City – Shop owners, or City - Residents), or a stakeholder group linked to a specific project (described in approach 3)
- This approach includes stakeholder engagement objectives a, c, d, e, f, g and h

Best practice: '**Focus Group Sustainable Logistics at the City of Groningen**'

In 2017 the Focus Group Sustainable Logistics Groningen was installed, under chairmanship of the Municipality of Groningen. It includes representatives of all relevant interest groups, business associations and institutions like the University of Groningen, related to Urban Logistics. The focus group reflects on policy and projects and liaises with members. The focus group discussed which joint ambitions for sustainable logistics could be defined. An action plan to realize the ambitions has been drawn up and the actions have been assigned to the members of the focus group. Both the ambitions and the action plan were drawn up in the Covenant 'Sustainable Urban Logistics Groningen' that was been signed by all members on 31 October 2018.

2. <u>Strategic cooperation with knowledge institutions with a specialization in logistics and a relationship with the city or region</u>:

An alternative approach is based on learning from logistics systems knowledge already available and the relevant stakeholders. The City or Region use the network or contacts of regional or national knowledge institutions to obtain an overview of logistics companies and stakeholders.

- This approach fits well in a situation where initial objectives are clear (including political agreement) but the City or Region has limited insight in existing networks or stakeholders linked to the objectives
- It includes stakeholder engagement objectives a, b, c, d

Best practice: '**Collaboration with Universities and the Province of Drenthe**'

Our local universities – University of Groningen and NHL Stenden University of Applied Sciences – both have a specialization in logistics: Centre for Operational Excellence and Lectoraat Green Logistics. We have a long term relationship with both universities and cooperate in several projects in the logistics field. Besides excellent knowledge, they have a broad network among stakeholders and logistics companies in our region. Their active involvement, combined with the benefits of their knowledge and practical network, was a key component of our SURFLOGH activities.

3. <u>Project-driven stakeholder engagement, involving stakeholders at the level of an individual pilot-project, without further commitment to broader goals related to city logistics</u>:

A third approach includes the selection of and consultation with a limited group of stakeholders, directly linked to the successful implementation of a pilot or project. The project and its funding are drivers in organizing contacts between actors and stakeholders. One or more successful projects, with several private stakeholders involved, can build the basis for a structural stakeholder engagement format (described in approach 1).

- This approach works best in a situation *without* overall political agreement on a municipality level, and/or a situation where overall goals for city logistics have not yet been clearly defined.
- It Includes stakeholder engagement objectives a, c, d, e, f, h.

Best practice: '**Bottom-up stakeholder approach at the City of Mechelen**'

Our bottom-up approach, involving stakeholders in small pilot projects, has proven successful when establishing a broad network of logistics companies and other stakeholders involved in city distribution and last mile deliveries. By involving and listening to the stakeholders participating in individual projects, we established a logistics working group with 29 retailers, special interest organizations and logistics service providers, committing to a city logistics covenant. The covenant sets a horizon for 2030: zero emission logistics in the inner city of Mechelen. The signatories of the covenant set sub-targets to keep the distant goal in mind.

Roadmap 2 – Role of the City or Region

Why - the rationale:

Taking the lead as a city or region (in policy, practical initiatives or projects regarding sustainable city logistics) is often linked to a broader vision containing objectives for sustainable City Logistics:

- An attractive and liveable city center with benefits for residents, shopkeepers and visitors (e.g., reduction of traffic, less pollution and more space for bicycles and pedestrians)
- A healthy environment for residents, employees and visitors (e.g., reduction of NOX)
- Contribution to mitigation of climate change (e.g., reduction of CO2)
- An accessible and safe city center (e.g., less traffic movements, no double parking, free space for bicycles and pedestrians).

Moreover, policies, regulations and/or restrictions with regard to last-mile logistics create a fair 'level playing field' for sustainable logistics business models (e.g., UCC's in combination with Cargo Bikes, Low- or Zero-emission vehicles(LEVs). The City or Region can also play a pioneering role in disseminating information about sustainable logistics alternatives or projects,.

What - goals & objectives:

Objectives are linked to the quality of life in the city center (and society as a whole), focusing on:

- A significant reduction of transport movements (a decrease in freight traffic in the inner City), in conjunction with:
    - CO2 reduction (mitigation of climate change)
    - NOX reduction (healthy environment in the city center)
    - Less accidents (increased safety for pedestrians and cyclists).
- Open communication to share innovative ideas en practices, bringing potential 'business-partners' for sustainable solutions together.
- Implementation of specific regulations for freight traffic (Low- or Zero Emission zones, time slots for loading/unloading, traffic and parking regulations).

How - 3 different approaches from the perspective of the City, Municipality or Region:

1. Developing supporting policy or practical measures in the field of an attractive and liveable inner city (the '**Carrot**'):

This first approach aims for the implementation of an overarching policy with regard to the quality of life in the inner city. A city or region can connect municipal objectives with the interests and objectives of shopkeepers (attract visitors/customers, create an ultimate shopping experience), residents (healthy environment, safety) and visitors (accessibility, safety, experience). Municipal budgets can be allocated in line with shared objectives, e.g., targeted public investments that encourage private investment from shopkeepers and residents.

- This approach works best in a situation with political consensus and a clear vision on quality in the inner City.

- It has an important link with stakeholder engagement (Roadmap 1), and can be linked to an approach with restrictions for freight traffic (see approach 2).

Best practice: '**Continuous development of city center liveability in the City of Borås'**

Perhaps unusual for a local authority, but Borås does have a high focus and great expertise in logistics/freight transport. Furthermore, the city is currently engaged in several development projects, ranging from regional terminal structures to efficient and emission free transports in the city center. The latter is closely linked with Borås's ambition for a vibrant, green and safe city street environment, whereby the traffic system constitutes an important aspect. The real estate owners play an important part in assessing the potential for different kinds of measures and solutions, as does the retailer's organization of Borås city. The main areas of focus in Borås are central districts that are regulated as pedestrian zones. However, as part of the continuous development, there are a few measures being considered to reduce traffic in certain parts of the city, where length restrictions for vehicles will be the next step.

2. Restrictive policies and/or measures to target conventional last-mile logistics and loading/unloading nuisance in inner cities (**the 'Stick'**):

In this approach, the city or region implements a restrictive policy to limit unwanted (polluting) freight traffic and nuisance from loading and unloading activities. This can be done, for example, by:

A. Implementation of loading/unloading time slots or restrictions, differentiating between sustainable and non-sustainable transport.
B. Implementation of low or zero-emission zones for freight traffic in the inner city, following a number of consecutive steps:
   - ✓ Clearly define a zone and the restrictions within the zone (low emission or zero emission)
   - ✓ Set a realistic date for implementation. Not to soon - it must be feasible and fair for logistics service providers and shopkeepers. Not too late – there must be some sense of urgency for logistics service providers.
   - ✓ Start an open consultation with all stakeholders (logistics service providers, retailers, residents, real estate owners, special interest groups).
   - ✓ Define temporary exception rules for special traffic or small businesses.
   - ✓ Initiate and facilitate alternative (sustainable) services for inner city logistics (link with Roadmap 3 and 4).
   - ✓ Assess all financial implications: investments/CAPEX (Road Signs, Cameras) and OPEX (Cost of operation, communication, enforcement).
   - ✓ Define an implementation strategy, including political support on a municipal level.

- This approach works best in a situation with political consensus and a clear vision on mitigation of climate change (CO2) and reduction of pollution (e.g., NOX)
- It an be linked to an approach focusing on specific policies and investments to enhance the quality of life and the attractiveness of inner cities (see approach 1)
- A national strategy with regard to zero emission zones or climate measures (e.g., Green Deal ZES and the National Climate Agreement in the Netherlands) can be an important driver for municipalities to develop such policies and measures. In the absence of such an overarching

policy at regional or national level, it is often more difficult for cities to independently implement these zones and restrictions.

Best Practice: **'Space for Zero-Emission City Logistics in the City of Groningen'**

More space for you! In a clean and safe city center. That is what the city of Groningen wants to achieve. We take all kinds of measures for logistics traffic. Main goals: reducing the number of trucks and delivery vans in the city center and the remaining logistics traffic must be emission free. We do this, among other things, through stricter rules for deliveries to shops, companies and the hospitality sector. Fewer trucks and delivery vans means more space for pedestrians and cyclists in a more attratctive, lively city center.

Timetable:

2022: Expansion of the area with a time frame for logistics
2022: Stricter exemption policy for traffic in the city center
2022: Enforcement with ANPR cameras around the regulated area
2025: Zero-emission zone for City Logistics

3. Storytelling and matchmaking on Sustainable Urban Logistics ('spread the word'):

The value of storytelling in developing policy concerning sustainable urban logistics is profound, as the concept allows people to gain a greater understanding of the current situation in inner cities, whilst also visualizing the challenges different actors, both public and private, face. Storytelling is a way to spread awareness and call for action. Cities or regions can organize and/or facilitate meetings, presentations, pitches and talk shows to 'showcase' sustainable logistics policies and specific projects. Matchmaking goes one step further: cities can organize and/or facilitate events where stakeholders (and potential partners) in sustainable city logistics can meet, mingle and talk about business opportunities.

- This approach is suitable for many different situations, and in combination with:
    - Projects concerning Logistics City Hubs, Cargo Bike Services, Electric Vehicle deliveries (Roadmap 3)
    - Projects focusing on the implementation of Locker Services (Roadmap 4)
    - Supporting policies on liveable inner cities (this Roadmap, Approach 1).
- In addition, storytelling is also linked to Roadmap 1 (Stakeholder Engagement): create and target messages to specific stakeholder groups.

Best practice: **'The Cargo Bike Talks'**

Groningen aims to be the cargo bike capital of the world. We want to maintain our leading position, while also being the breeding ground for new developments and initiatives in the field of cargo bike policy. This has been underlined by the organization of the Cargo Bike Talks, for example, which is an online broadcast in which we present new cargo-bike concepts like low-nuisance deliveries (PostNL), electric trailers (Nüwiel) and new business models (Go-Fast). Main goals: to highlight the role of the cargo bike in improving the quality of life in our cities, to encourage other cities to adapt their policies and to enable companies to switch to sustainable logistics. With examples from Groningen and other cities, the Cargo Bike Talks attract an international audience, in and beyond European borders. The Cargo Bike Talks are a collaboration between the Municipality of Groningen, SURFLOGH and the International Cargo Bike Festival.

Roadmap 3 – Hubs/UCCs, Cargo Bikes and Electric Vehicles

Why – the rationale:

To stimulate alternatives for conventional modes of transport (truck, delivery van), cities and regions can proactively set up pilots and projects to encourage innovative and sustainable logistics solutions. An urban consolidation center (City Hub or UCC), based near the city center, can serve as a collection point for logistics flows to the inner city. From this collection point, the goods/parcels can be delivered in an efficient and more sustainable manner. Cargo bikes or light electric vehicles can be used for these last mile deliveries, thus contributing greatly to an efficiently coordinated, green supply chain in the inner city.
Successful implementation of the pilots is largely influenced by involving the relevant stakeholders (see Roadmap 1) and policy directed at logistics in the city center (see Roadmap 2). In addition, when setting up pilot projects, it is also important to consider the continuation of projects after the pilot phase. A feasible business model for logistics service providers is crucial, with equal or lower costs for retailers and ensuring the same service standard.

What -goals &objectives:

Objectives are linked to the successful implementation of pilot projects on a strategic, tactical and operational level:

- Strategic: A significant reduction of transport movements- decrease in freight traffic in the inner city - in conjunction with CO2 reduction, NOX reduction (healthier environment in the city center) and less accidents (increased safety for pedestrians and cyclists)
- Tactical: continuation of the initiative after the pilot phase (commercial service)
- Operational: successful implementation of the pilot project-in cooperation with, and with contributions from, all partners involved.

How - 3 different approaches from the perspective of the City, Municipality or Region:

1. Multi-pilot approach:

This approach consists of a number of consecutive short pilot projects to test business models for sustainable city logistics. In this way, knowledge and experience from one project can be used in the next project. Lead time of pilot projects can vary from between 3 months (to get first impressions of a new sustainable logistics concept) to 10-12 months (to properly test the feasibility over a longer period, whereby minor adjustments can also be made during the term of the pilot). In the case of short pilot projects, it is important to properly inform participants (e.g. retailers) about the duration and structure of the pilot, so that expectations are clear. .

- This approach works best in a situation with:
  - A clear overall municipal policy and targets for sustainable city logistics.
  - Clear political commitment.
  - A local network of multiple large logistics service providers + local SMEs, who are willing to participate in several pilot projects.

- This approach has a link with storytelling (Roadmap 2, approach 3): organizing meetings or events that can serve as a creative platform for new project ideas and matchmaking of large logistics service providers and small local start-ups in logistics.

Best practice: **'Cargo Bikes, more pilots = more results'**

Short lead times are a common characteristic of our SURFLOGH pilots – it's a conscious choice to achieve results quickly. As a result, we can build our pilots on the knowledge and experience we gained in earlier ones. This way we quickly adapt and know what works and what doesn't. Through this approach, we have gained insight into a wide range of aspects that influence the business case of cargo-bike logistics. Think, for example, of ICT applications, vehicle size, type of customers, partnerships, business concepts, size of the working area, location of the hub and the city's access policy.

2. Planned UCC pilot approach:

This is a step-by-step approach to identify and test the potential of an Urban Consolidation Center (UCC) or City Hub with sustainable last-mile logistics (through the use of Electric Vehicles and/or Cargo Bikes):

- ✓ *First step*: mapping of current goods flows to and from the inner city (different kind of goods, return flows, volumes, timetables, transport companies involved) in order to find out what the potential volume is for a sustainable last-mile concept involving a UCC. In some cases mapping could be organized in cooperation with knowledge institutions/universities with a local connection
- ✓ *Second step:* dialogue with stakeholders (interviews with retailers, Real Estate owners, logistics service providers, local service providers) to investigate preconditions and requirements set by potential customers
- ✓ *Third step*: Building a preliminary business case (base case) for an in depth understanding of the business potential - before the Municipality starts a competitive dialogue with interested private partners. Simultaneously, the city can investigate and secure options (locations, real-estate) to develop or re-develop an UCC near the City Center;
- ✓ *Fourth step*: Formal competitive dialogue or informal dialogues with logistics service providers , to prepare the formal procurement process and inform interested companies about the upcoming procedure
- ✓ *Fifth step*: Formal procurement process for Logistics Service during UCC pilot phase, including the development of an UCC, the operation of the UCC, and the organization of the sustainable last-mile deliveries
- ✓ *Sixth step*: preparation of the UCC site and start of the UCC pilot
- ✓ *Seventh step*: mid-term evaluation, focusing on operational changes, scale-up opportunities and marketing to attract new (return) flows
- ✓ *Eighth step*: end of pilot phase, consultation with logistics companies involved to continue the project as a commercial service

- Works best in a situation with:
    - A clear overall municipal policy and targets for sustainable city logistics
    - Strong political commitment

- Professional project management (provided by Municipality or Region and the companies involved)
- Presence of multiple large logistics service providers (with own volumes as basis for pilot project)

Best practice: **'A UCC for Good Goods in Boras'**

The objective of the pilot 'Good Goods' was to create solutions for consolidation of goods to the city center, as well as zero emission distribution of goods and waste. As such, the Municipality of Borås, the Merchant Organization Borås City, and the real estate owners association set up a formal procurement procedure to select a suitable logistics service provider. Based on their winning bid, the local service provider Stures Åkeri set up a sustainable logistics service for the SURFLOGH Pilot "Good Goods". During the pilot a secondary revenue flow was established in collaboration with the municipal company Borås Energi och Miljö to provide a collection service for dry waste, hence introducing a two-way flow into the operation. An electric vehicle, designed for goods distribution and waste recycling, was introduced respectively, as well as a consolidation terminal adjacent to the city center. The operation has proven to work very well so far. Given the existing base flows of goods and waste, there are good prerequisites for a commercially sustainable solution in the long term.

- Organic UCC approach:

This approach starts with a clear, high level definition of the problem and potential sustainable logistics solutions for last mile deliveries by the Municipality, with clear political commitment. Based on this, the city or region starts a market dialogue with one or several innovative start-up/scale up companies (i.e. small logistics service providers) with a sustainable business model already tested in a similar environment such as another city or region).

The City/Region select a start-up logistics service provider and start a collaboration based on a basic agreement:

- ✓ In the first phase the pilot project (service) is designed on a small scale (e.g., small city hub, one cargo bike)
- ✓ The start-up uses momentum or ad-hoc chances to grow (e.g., a contract with a large logistics service provider to deliver a small part of their volume by cargo bike)
- ✓ The start-up or scale-up ideally optimizes the logistics operation for each new step (e.g., expansion of the hub, extra cargo bikes)
- ✓ The City or Region only provides public funding (grants or loans) for parts of the operation that are not, or nor yet commercially viable
- ✓ Public funding is reconsidered for every new step and is phased out as the business/volumes grow.

- This approach works best in a situation with high trust between public and private partners. This trust can be built through stakeholder engagement (Roadmap 1) and/or storytelling and matchmaking (Roadmap 2, approach 3)
- It is based on the willingness of one or more start-up companies to cooperate

Best practice: **'Entrepreneurial approach and relationship building in Edinburgh (SEStran)'**

A key part of the success of the Edinburgh pilot has been the entrepreneurial approach and relationship building of the hub director Charlie Mulholland (Zedify). This has been characterised by a classical one to one sales ethos and an agile approach to business development, being able to identify opportunities and move quickly to realise them. For example, Charlie was able to build a core of regular business in Edinburgh with FedEx. Based on a previous discussion that had gone cold, he was able to act when his contact moved to Edinburgh, re-engaging with them to present their potential in Edinburgh with Zedify. The DNA of the hub is also characterised by a 'let's do it' approach to new business and a willingness to accept risk in order to meet customer expectations. This approach is supported by the Zedify franchise team and is very much part of the overall brand identity at Zedify.

Roadmap 4 – Locker Services

Why – the rationale

Parcel deliveries in cities are booming due to e-commerce and online shopping. This has been an ongoing process already for quite some years, but Covid restrictions have proven to be a real accelerator since 2020. Further growth is expected in the future. The deliveries cause additional movements by parcel companies, often operated by van. The extra traffic has a negative effect on environment and road safety, while cities aim at less city logistics movements and less pollution. They strive to improve livability for both residents and visitors. A solution that has proven to be successful within SURFLOGH is setting up a network of parcel lockers, both in inner cities and rural areas. Delivery of parcels in one location (the locker) reduces the number of transport movements in city streets and benefits residents, local businesses and logistics service providers. Moreover, parcel recipients have access to their deliveries at convenient locations and 24/7.

What - goals &objectives

The installation of a parcel locker network can contribute to various policy goals and ambitions.

- Because deliveries are made at one location, the time spent by the van in the city is shortened. Furthermore, the lockers reduce transport movements and ensure less freight traffic, which causes less CO_2 emissions. Less NO_x and fine particle matter is emitted which also contributes to a healthier environment. Road safety is improved because of less traffic and the van does not cause congestion by making a stop every few meters in narrow and busy streets.
- The lockers provide extra services for local residents and businesses in the inner city because they ensure 24/7 accessibility, contactless deliveries and self-service pick-ups and shipments.
- Finally, additional benefits for logistics service providers can be obtained. First, by securing a more efficient trip, delivering all parcels at one location. Second, by mitigating the risk of loss, misplacement or theft.

How 3 different approaches from the perspective of the City, Municipality or Region:

1. Large LSP/service provider in the lead

In the second approach a large logistics service provider, probably a parcel delivery company or parcel locker operator, is responsible for facilitating the entire process. The activities can be seen as business development, hence as part of their business strategy.
Usually the company approaches the municipality or region with a request to install a parcel locker network. The company carries out the whole procedure on their own, sometimes facilitated by the municipality/region who could help with searching for a location or obtaining the necessary permits. The operator is responsible for buying or leasing the lockers. Other logistics service providers, business or retailers cannot use the lockers directly, but only via the parcel network of the service providers who owns the lockers, or in case the owner is a locker operator, via a service agreement.

- This approach is suited if a city or region requires a fast and large scale implementation, with *pro's* (quick and efficient implementation, large scale and network access of logistics service provider) and *cons* (other, and smaller logistics providers can only access the service trough a service agreement with the large logistics company involved)

Best practice: **'Bpost's Ecozone in the City of Mechelen: efficient implementation'**

Bpost's Ecozone is a new logistics concept that was first tested in Mechelen within the SURFLOGH project. Nowadays the concept is expanding to different Belgian cities thanks to the learnings of the Mechelen trial. In an Ecozone, bpost – Belgium's national mail and parcel delivery company – commits itself to zero-emission deliveries to and from an extensive network of parcel lockers. In addition, it nudges the inhabitants to have their parcels delivered in the lockers instead of at home. With the help of SURFLOGH, bpost was able to implement the zone quickly and efficiently on a large scale. A little over a year after the first meetings with the city of Mechelen, 50 parcel lockers were installed (and intensively used). And only a few months after that, bpost was able to switch its fleet to a full zero emission one to serve the entire inner city of Mechelen for every (home) delivery.

2. Municipality or Region in the lead:

The municipality or region can take the lead in the whole process, working on their policy goals. In this case, the entity is responsible for actively searching and approaching market parties or entrepreneurs who can exploit the parcel lockers.
The municipality or region facilitates the process, starting with finding a commercial partner, which could be a large company but also more scale-up like businesses (if they have good contacts and experience with parcel companies and retailers). The governmental body can buy or lease the lockers through a procurement procedure. A way to do this could be a buy and lease back construction, or an investment made by the municipality/region and the market party leasing the locker.
The lockers can be used by several logistics service providers and other businesses/retailers under a white label concept. In this approach, the locker operator is a different party from the parcel delivery companies that make the deliveries in the locker unit.

- The approach fits well if a city or region wants to test a new locker concept with open access for all interested logistics service providers and customers (white label). Implementation of the concept might take longer compared to approach 1 (with a large logistics service provider in the lead), and requires a large(r) effort of the public authority involved

Best practice: **'Lockers at public transport hubs in Drenthe'**

Inspired by the locker pilot initiated by SURFLOGH partner Mechelen, the province of Drenthe decided to start a similar locker pilot. The characteristics of our region are slightly different. Instead of the inner city we focus on the more peripheral areas surrounding the cities. We chose to install the lockers at 3 different public transport hubs. These hubs are strategically placed across the main roads at the entrance of the villages. Besides the effects in terms of bundling and CO_2 reduction, the main goal is to incorporate the lockers in the local economy. In the tender procedure we agreed on the terms and conditions of the use of the lockers by local companies. During the pilot we involved local stakeholders and encouraged them to use the opportunities of the lockers for their businesses. National television broadcasted an item on this initiative.

3. Choosing the right location for lockers

Since parcel lockers have to be installed in public space, it involves some practical and official procedures before they can eventually be found in the streets.
First, a selection process has to be carried out in which the right locations for the lockers have to be found, based on population data, people passing-by, network density and market research. In SURFLOGH it was found that commuter locations could be very useful, both in cities and the rural areas (where lockers could also be combined with mobility hubs).
Basic requirements are also: a location that is 24/7 accessible (public space), accessibility for LSP's (delivering in the lockers), accessibility for customers (nearby, safe location), road safety around the lockers (pedestrians, cyclists) and a location that causes minimal nuisance for residents and nearby shops, cafes and restaurants. Other requirements for larger lockers include electricity and a foundation for the lockers. Also permits may be required as it comes to spatial planning procedures.

- Choosing the right location for lockers has a clear link with Roadmap 1, which concerns stakeholder engagement with residents and businesses in the direct vicinity of the locker location

Best practice: **'Finding the right spot in Mechelen'**

The lockers in the Ecozone were designed to overcome installation challenges that were encountered with the first-generation parcel lockers: they were smaller, needed no anchoring and relied on battery power so no socket was needed. Finding a good spot, however, could still be a challenge since a range of city services had to be consulted before the board of alderman would approve: safety, heritage, urban planning… among others. However, with a little perseverance and a good eye, we managed.