



DECARBOMILE

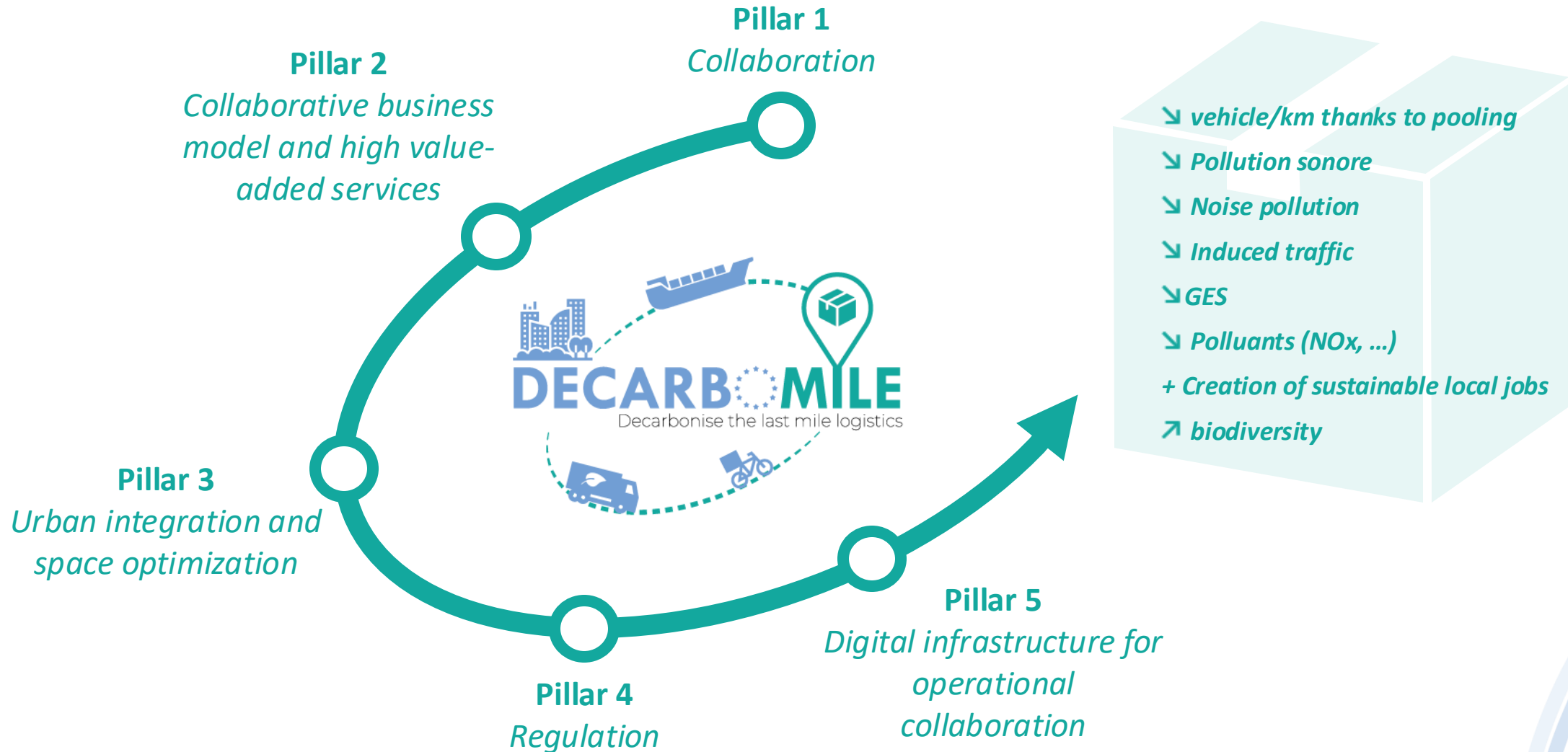
DECARBONIZE THE LAST MILE LOGISTICS

2023-2026



This project has received funding from the European Union's **Horizon 2020** Research and Innovation programme under Grant Agreement No. **101069806**

Overall approach



Overview

- DECARBOMILE is focused on green last-mile logistics for urban goods distribution.
- Gathering 31 partners from 10 different countries, DECARBOMILE aims to trigger an improvement of **the green last mile logistics in Europe**.
- The aim is to develop **improved delivery methods, tools and methodologies**, and implement and test them across Europe to lower carbonization of last mile logistics activities.
- Delivery methods such as (micro) **urban consolidation centers, the use of cargo bikes or waterways and electric barges** for transport will be integrated with a collaborative urban consolidation logistics.

Overview

- The project will develop **4 pilots (living labs)** in Spain, France, Germany, and Turkey.
- Also, it will have **4 satellites** in Estonia, Spain, Bosnia and Herzegovina, and Belgium to test and study the potential of different solutions under different local contexts, involving urban and microurban consolidation centers, cargo bikes, electric barges, etc.



Living Lab Hamburg

About



City of Hamburg: the political frame

2020 Climate Protection Law and corresponding Sustainable Urban Mobility Plan

-> reduction of carbon dioxide emissions until 2030 (-55%) and 2050 (-95%) compared to 1990

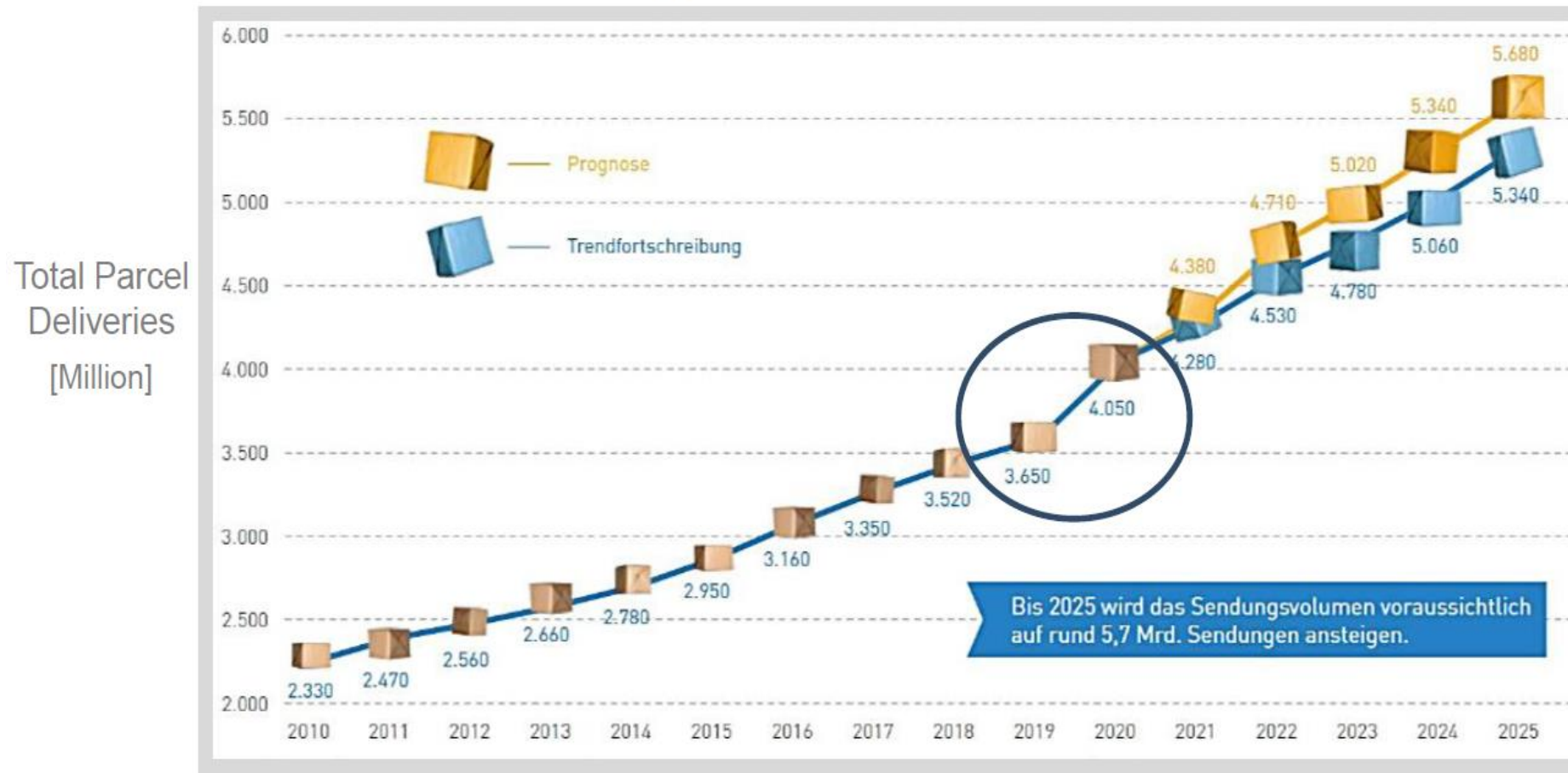
2021 Strategy for decarbonisation in the urban logistics sector

-> lowering emissions on the logistic last mile by 40% until 2030 compared to 2017

-> Establishment of a narrow network of urban consolidation centres, from which parcels and other goods are delivered using cargo bikes, and regulatory measures to incentivize logistics companies

Challenge of parcel delivery in Hamburg

Parcel deliveries in Germany:



Prognosis based on
changed consumer
behaviour

Extrapolation of
pre-2020 growth

City of Hamburg

2017: 95 Mio. parcels

Prognosis 2030:
163 Mio. parcels

Challenge of parcel delivery in Hamburg

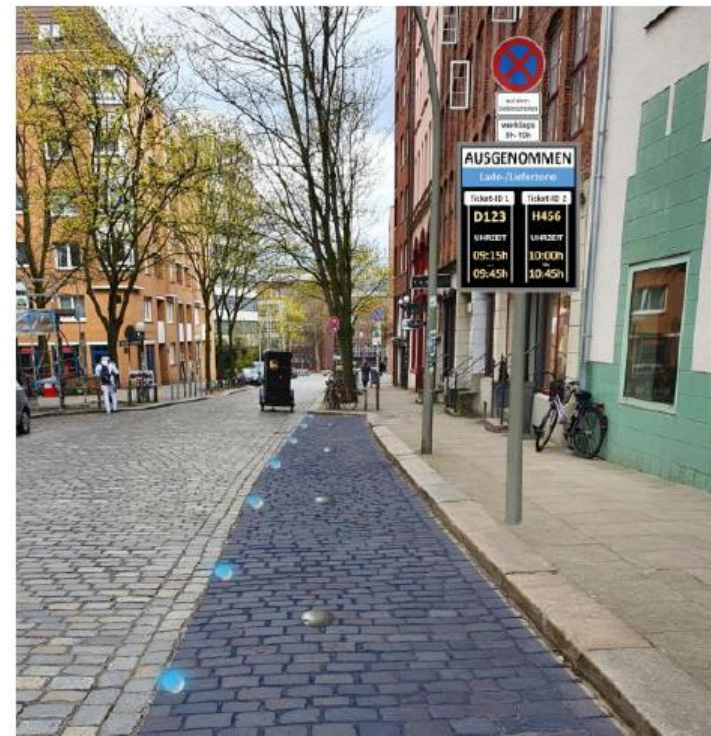
- Delivery traffic big factor in urban emissions
- Share of delivery traffic in Hamburg is 10 to 15% but accounts for 25% of CO2 emissions and 30 to 50% of other emissions (nitric oxides, particulate matter)
- Explanation: in general higher emissions by delivery vans and trucks than by passenger cars + double parking of delivery vehicles causes stop and go traffic for all others

Hamburg Approaches to more sustainability & efficiency

Examples...



Multi-User Micro Hubs



Smart Delivery and Loading Zones

Urban Waterways: Relief for the Last Mile?

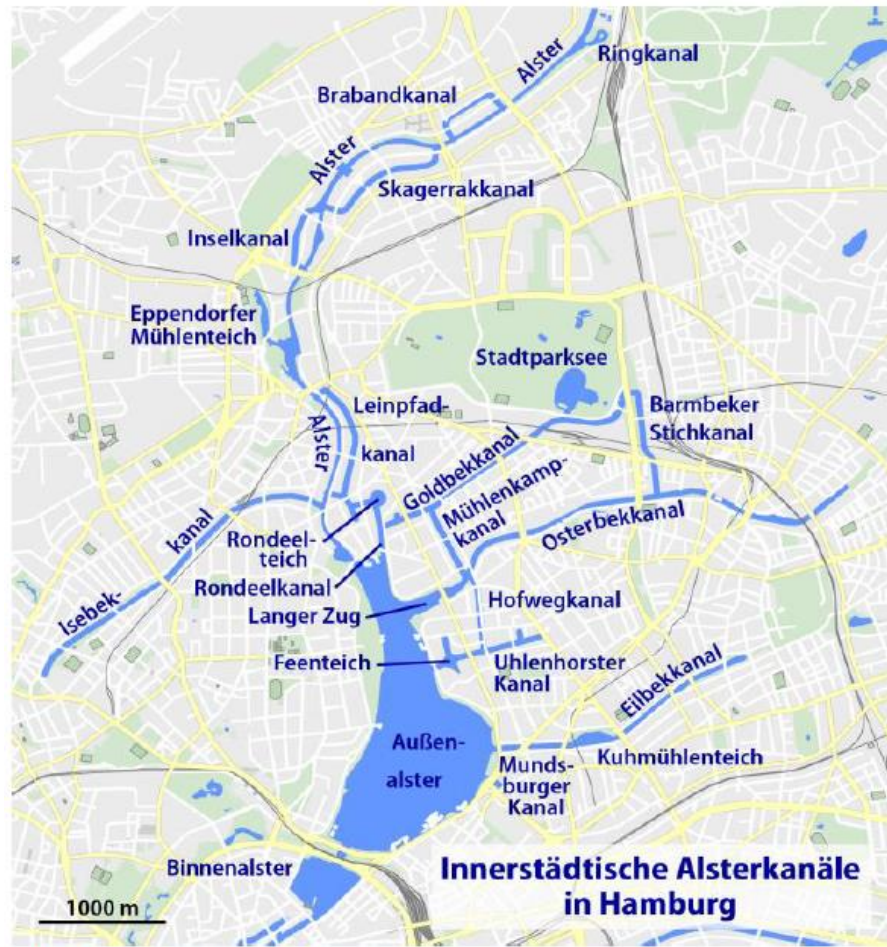


Abbildung 1: Urban Alster channels in Hamburg

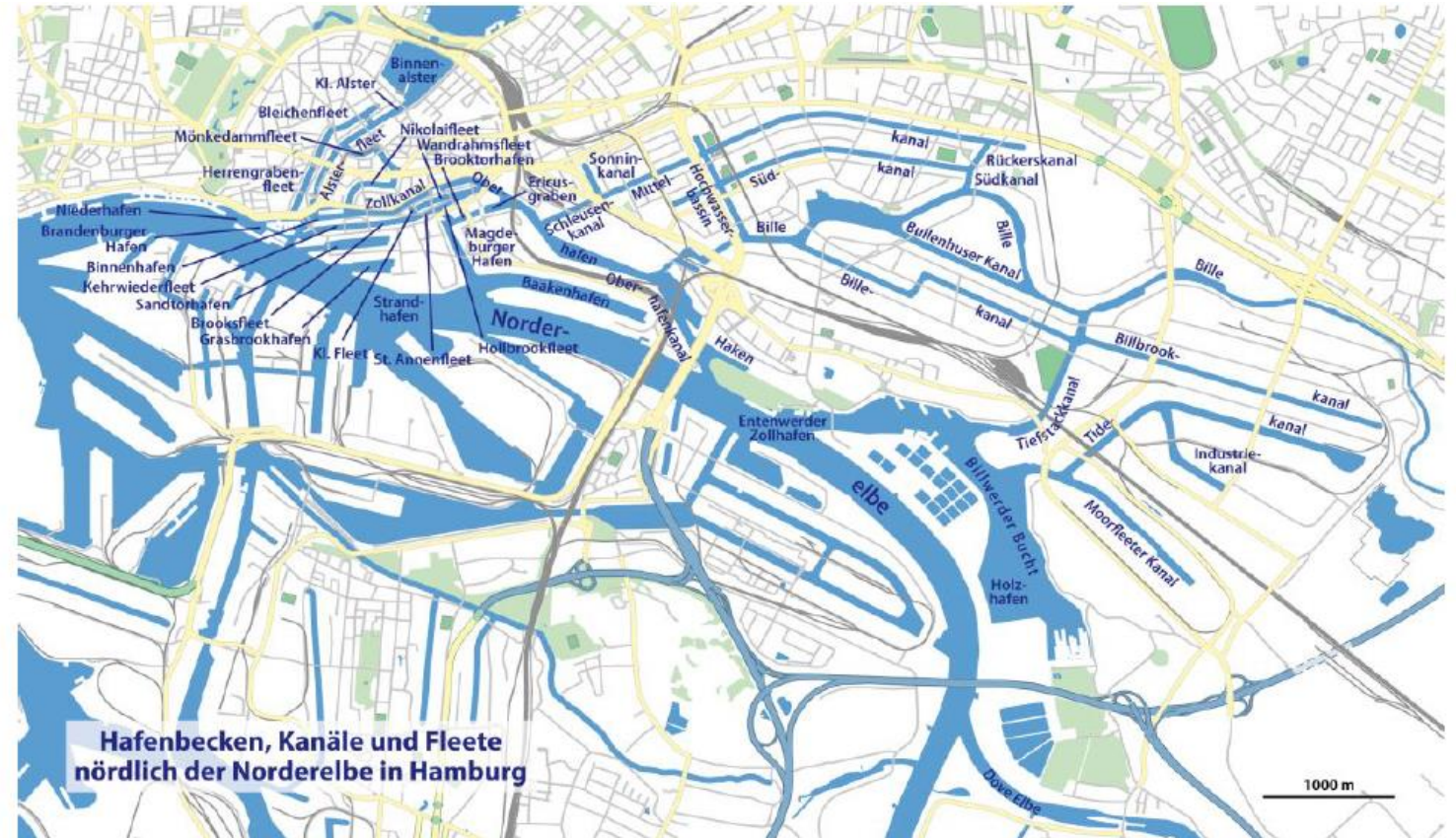


Abbildung 2: Harbour basin and channels in the north of the Elbe river in Hamburg

Quelle: OpenStreetMap.org, Lizenz: Creative Commons (CC-BY-SA 2.0)

Hamburg Use Case

Electric barge planned to be piloted in Hamburg LL & Ghent (satellite city)

- AVATAR vessel is currently under construction and planned to be in the waters within the next months



Its „sister vessel“ the Green Wave is already in the Ghent waters for pilots and tests. *(see left and below)*



Left:
AVATAR
vessel
being
equipped in
Ghent, BE.



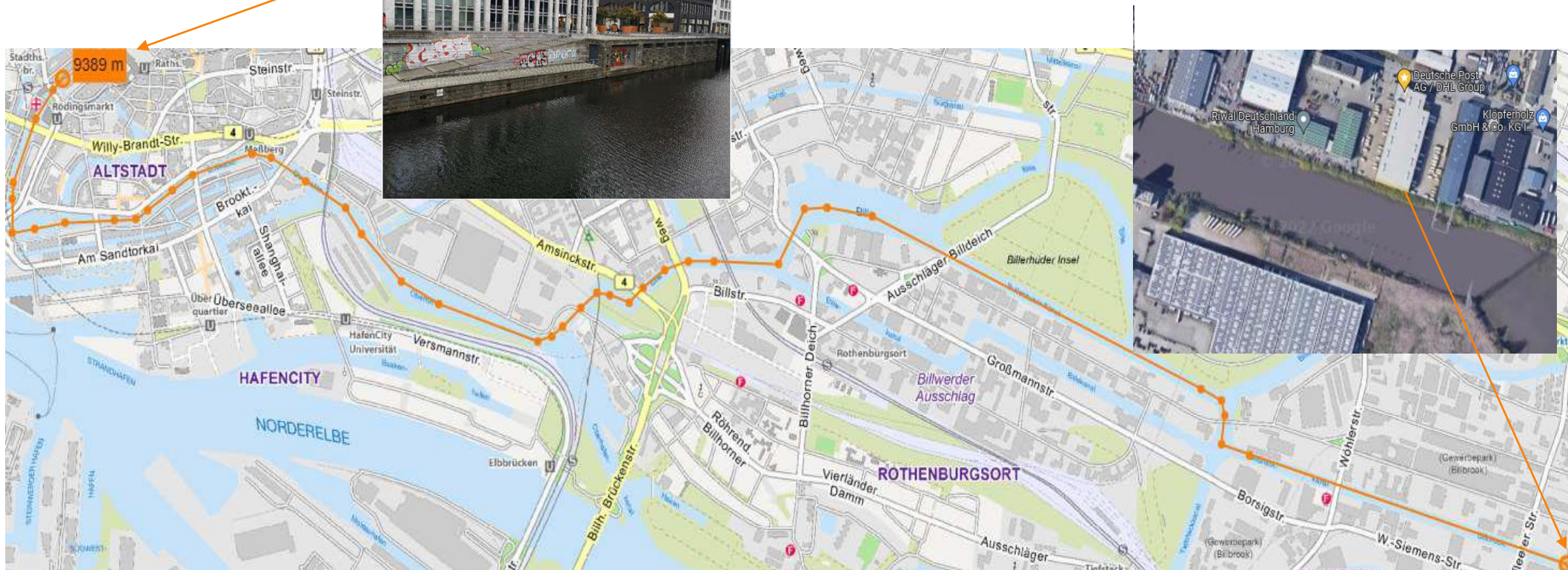
Hamburg Use Case

Proposed route (subject to change) & possible unloading points

Alsterfeet / Neuer Wall incl. existing ramps



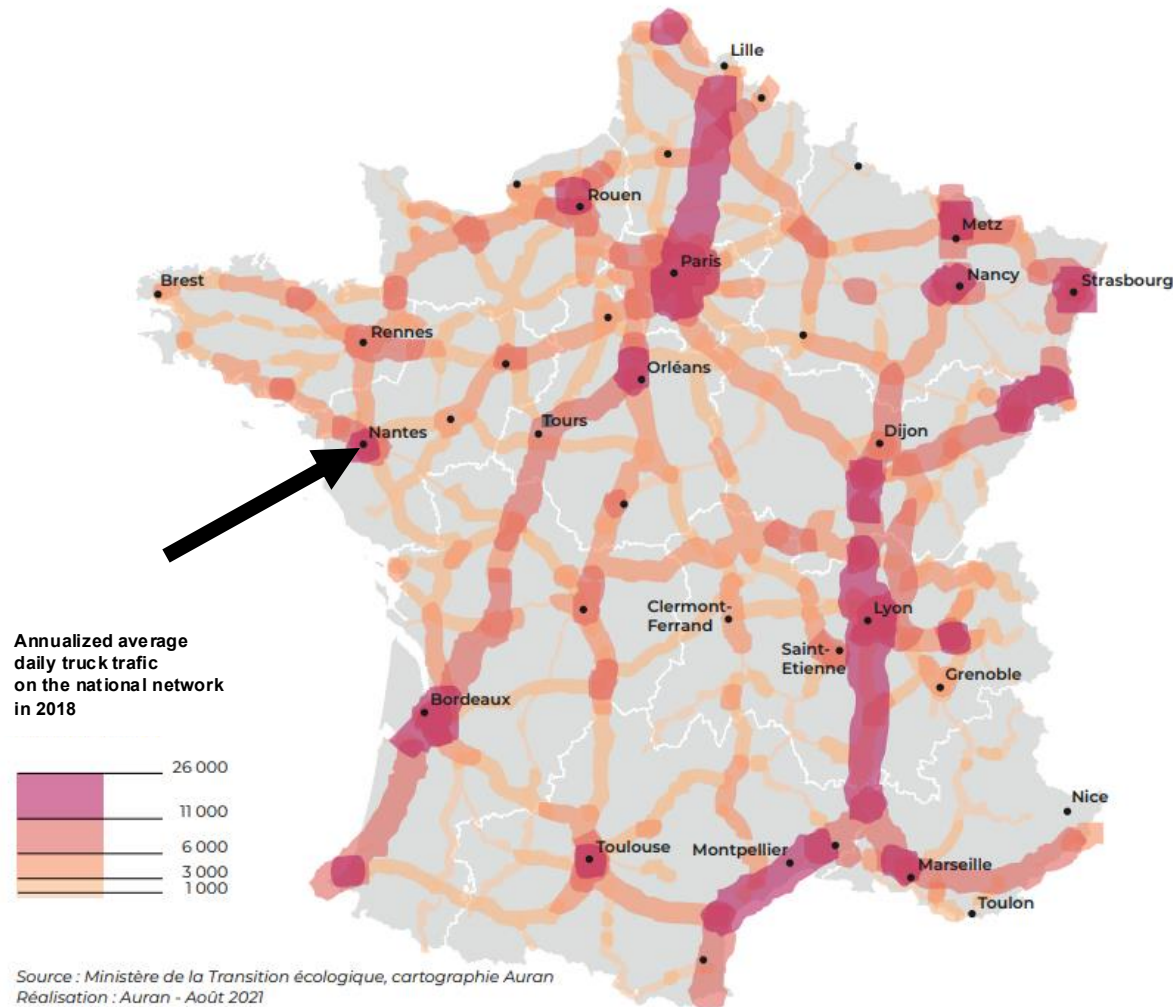
Deutsche Post DHL DC, Werner-Siemens Str., directly located at Tidekanal



NANTES

Presentation of Nantes Metropolis living lab and challenges

General presentation

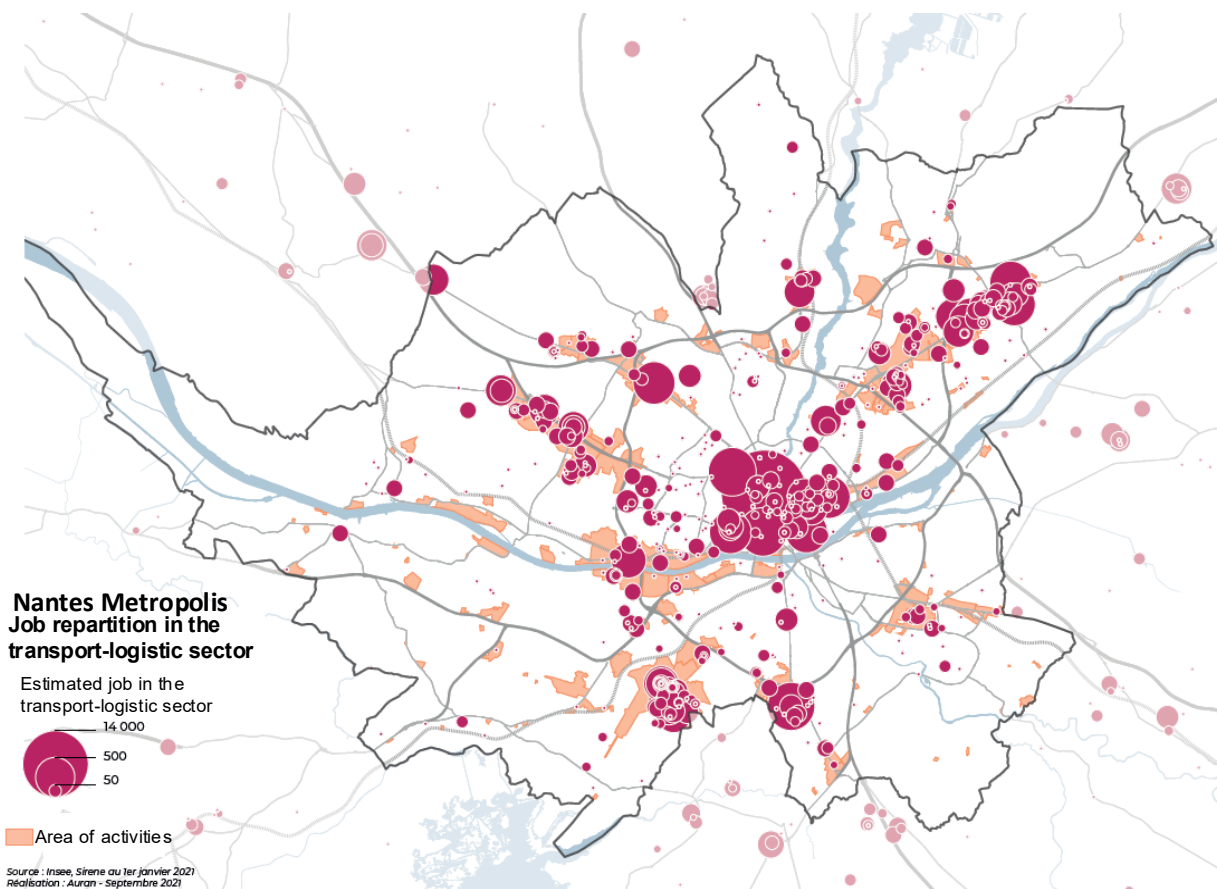


- Geographic informations

- Area of 24 cities for 52 000 hectares
- 655 000 inhabitants and 353 000 jobs
- Strong population growth (+1.4 %/year) and economic too

Nantes-St Nazaire stands out as a logistics pole, because of its demographic and its economic weight and dynamism, and its role as product distributor.

General presentation



Source : Insee-Sirene 2021, cartographie Auran

- Logistics informations

- 50 % of logistic county flow linked to Nantes Metropolis
- Wide variety of logistics flows : sectors, goods, frequency...
- More than half of the weekly movements of goods are carried out in Light Commercial Vehicles (LCVs)
- 97% of vehicles professionals registered since 2000 and located in Nantes Métropole are petrol and diesel

General presentation

Main local freight operators who can be integrated in our projects

Cyclo logistic

Les Triporteurs Nantais
Les boîtes à vélo
Green Course
Les Coursiers Nantais
Bici Courrier



Freight Operator

DB Schenker – related to Les Triporteurs Nantais
Atlantic Boisson
Pomona Terre Azur et Passion Froid
La Poste
Envie 2E 44
Carrefour (Promocash)
U logistique
City Progress

Ally

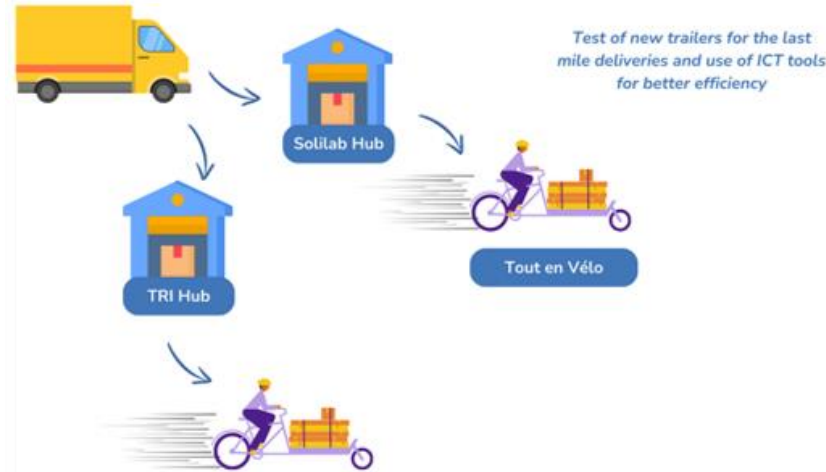
Interprofessionals Organisations, operators
and consulars chambers

CCI et CMA
CAPEB
FFB
FDMC
TLF
FNTR
CGI
SEMMINN
Plein Centre
VNF
GPM
NGE

T 7.3 Update of Nantes LL – 3 to 4 Use Cases

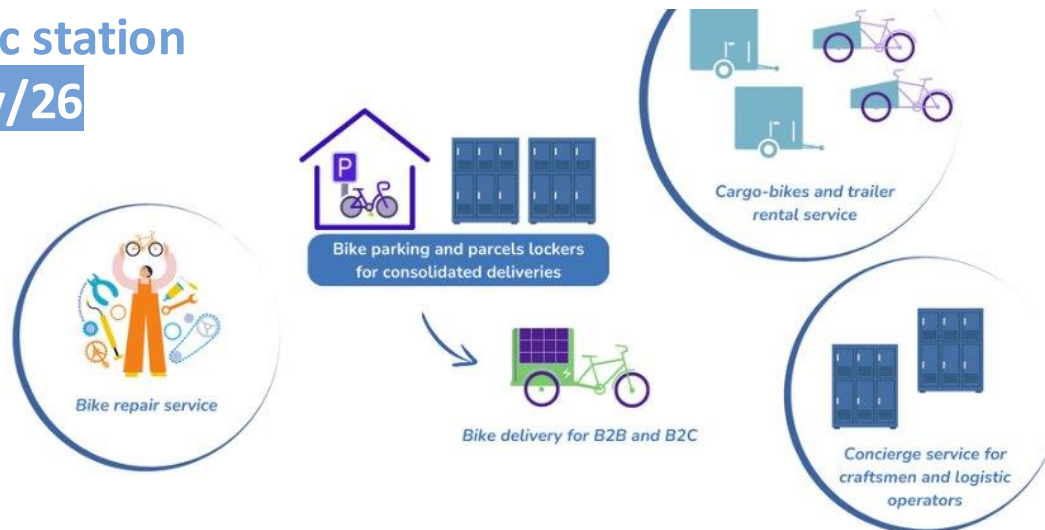
Leveraging existing logistics hubs and processes

Ongoing since Nov/24



Hybrid logistic station

ETS : January/26

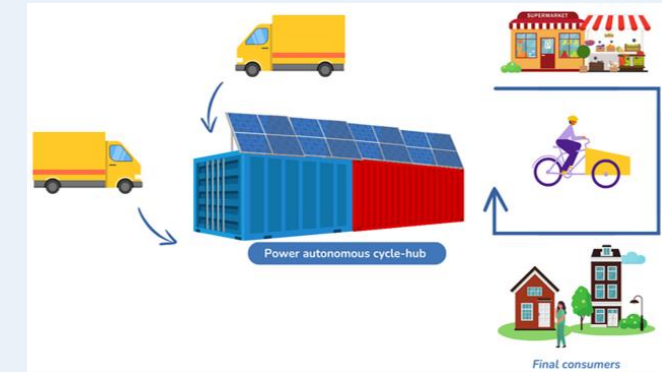


www.c

TRI hub for cycle-logistics last-mile deliveries on public space

On hold

Dependency on grant response



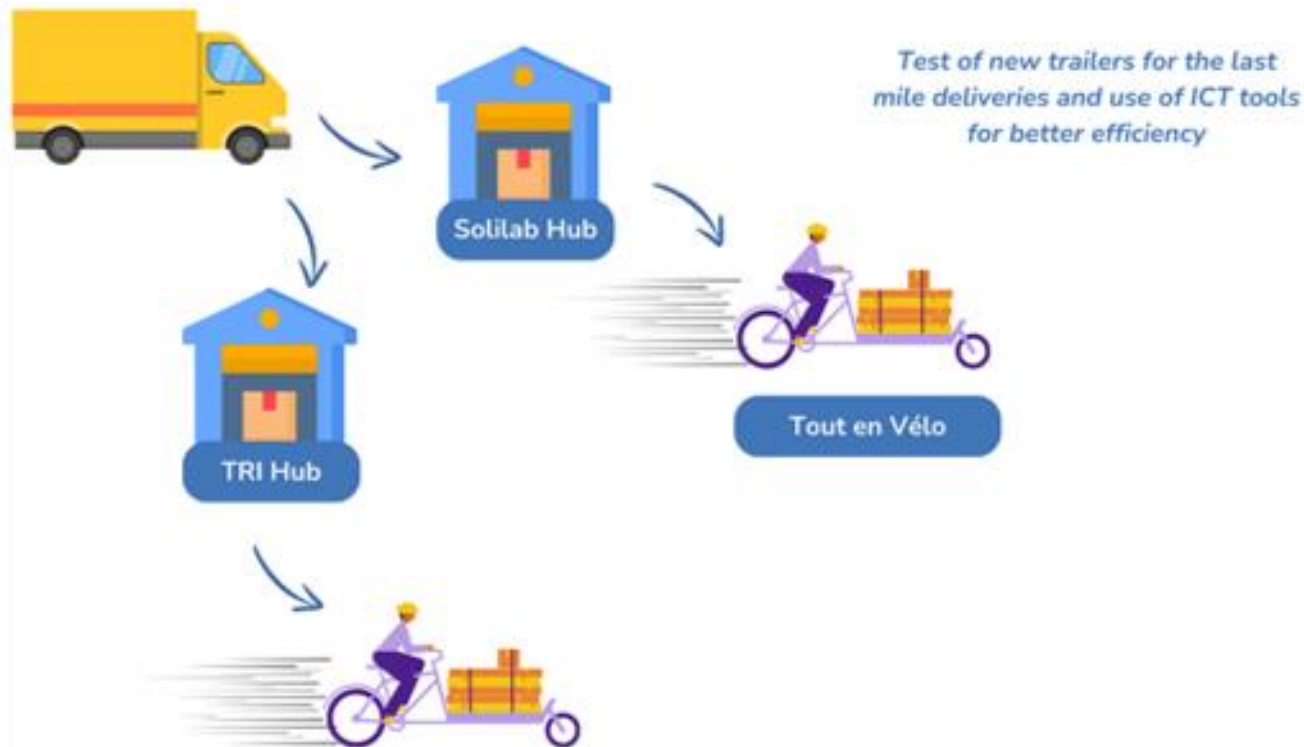
Mobile hub on public parking space

ETS : December/25



T 7.3 Update of Nantes LL – 3 Use Cases

1/ Leveraging existing logistics hubs and processes – on going since Nov/24

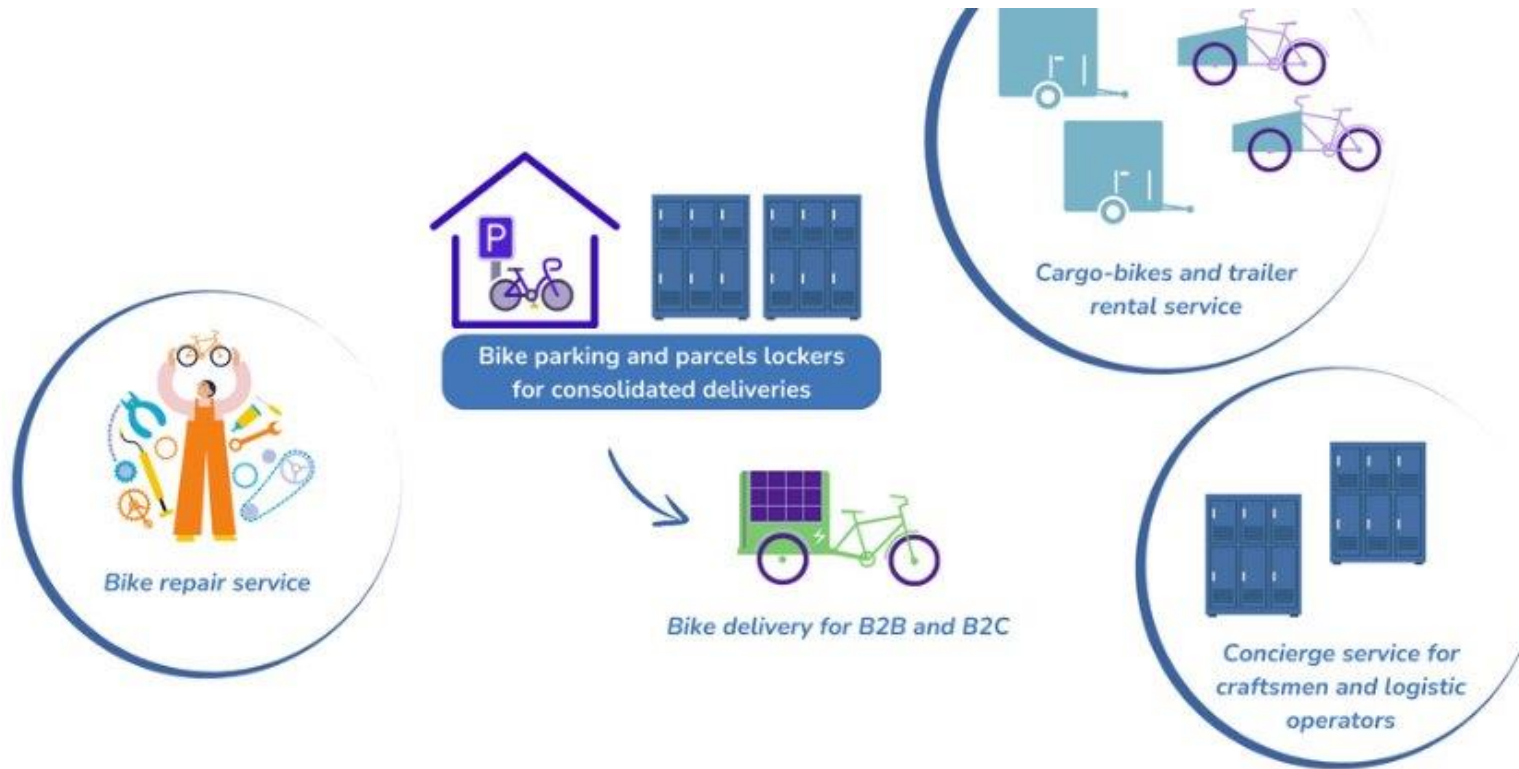


Lessons learned :

- Difficulty on engaging stakeholders that are not in the project (that don't have constraints);
- Indirect result from the project: new networking and contracts between cycle logistics and big delivery companies (tout en Vélo > Heppner > Kuhne&Nagel).
- Logistics volume influences use case

T 7.3 Update of Nantes LL – 3 Use Cases

2/ Hybrid logistic station – ETS : January/26



Status :

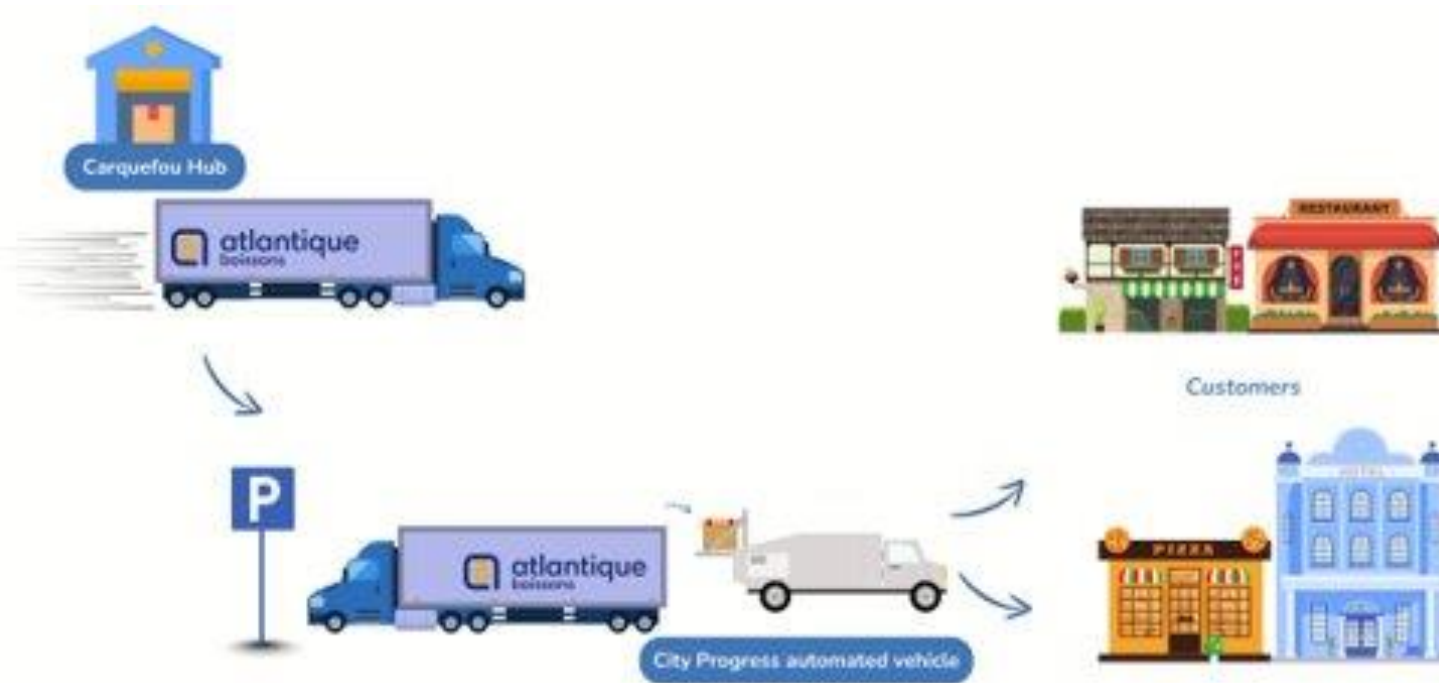
- Planned by beginning of 2026;
- Main stakeholders already defined;
- In partnership with a local project "SOLUCE" that encourage craftsmen to change from termical vehicles to cargo-bikes.

Lessons learned :

- Discussions with actors – individual and in group helps to unlock certain aspects;
- Combine the calendar of public policies with the european project;
- Understand the needs of actors involved in the implementation.

T 7.3 Update of Nantes LL – 3 Use Cases

3b/ Mobile Hub on public space – ETS : December/25



Status :

- Planned by the end of 2025;
- Finalizing contracts and on-site works.

Lessons learned :

- Opportunity of the european project to highlight and unlock a long run project ;
- Be careful on implementation in public spaces – a lot of agreements from different departments;
- Constant dialogue with stakeholders (from the project and external actors as well) - articulation can be challenging;
- Time to achieve the final model – it has to be functional since the beginning (no time for "crash tests").

T 7.3 Update of Nantes LL – 3 Use Cases

3b/ Mobile Hub on public space – ETS : December/26





Logroño

Presentation of Logroño living lab and challenges

General presentation



Logroño

15 min



General presentation



Logroño

15 min



POPULATION:
150.211 inhabitants

General presentation



Logroño

15 min



Main URBAN AREA

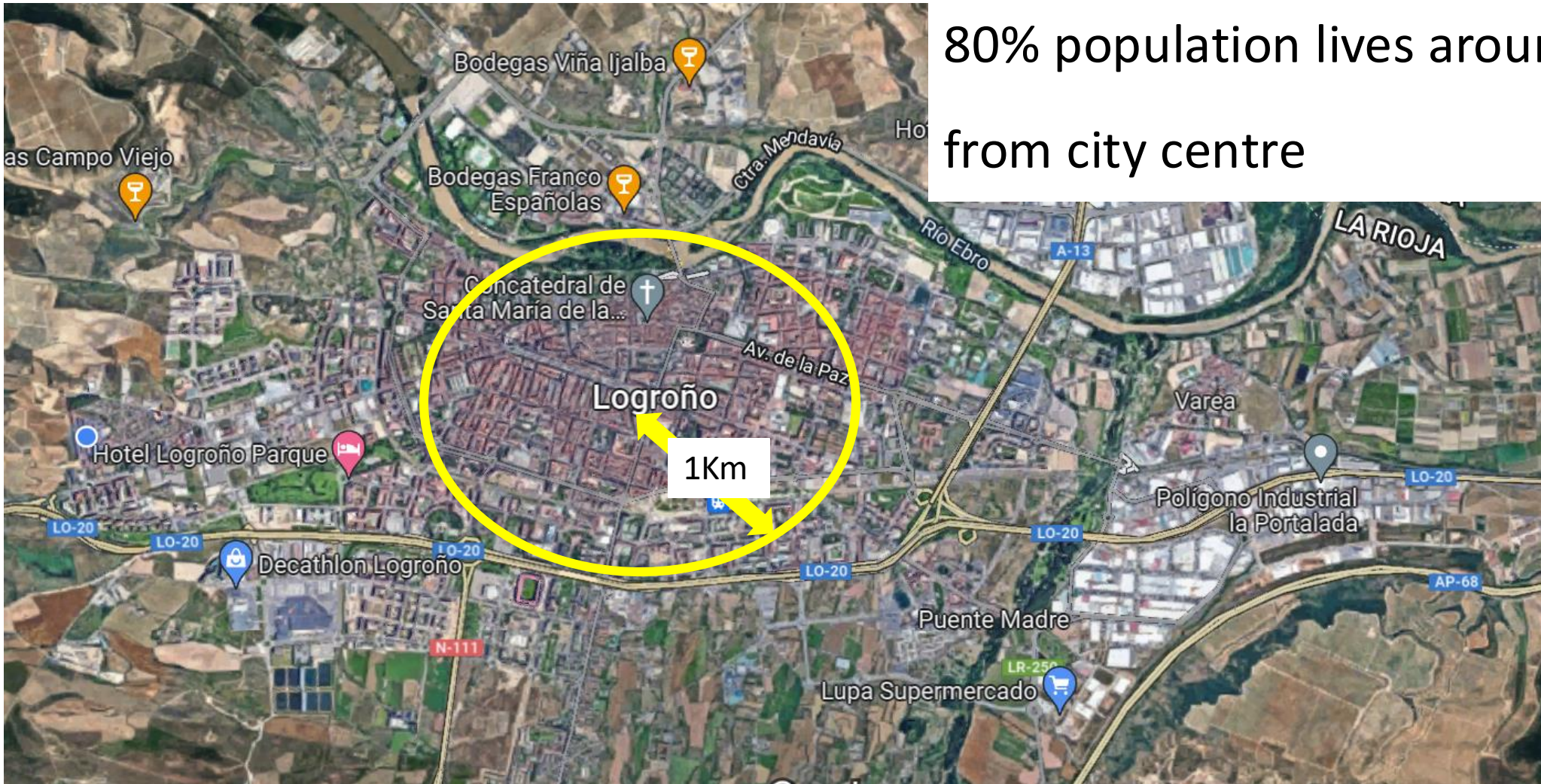
General presentation



Logroño

15 min

80% population lives around 1km
from city centre



General presentation



Logroño

15 min

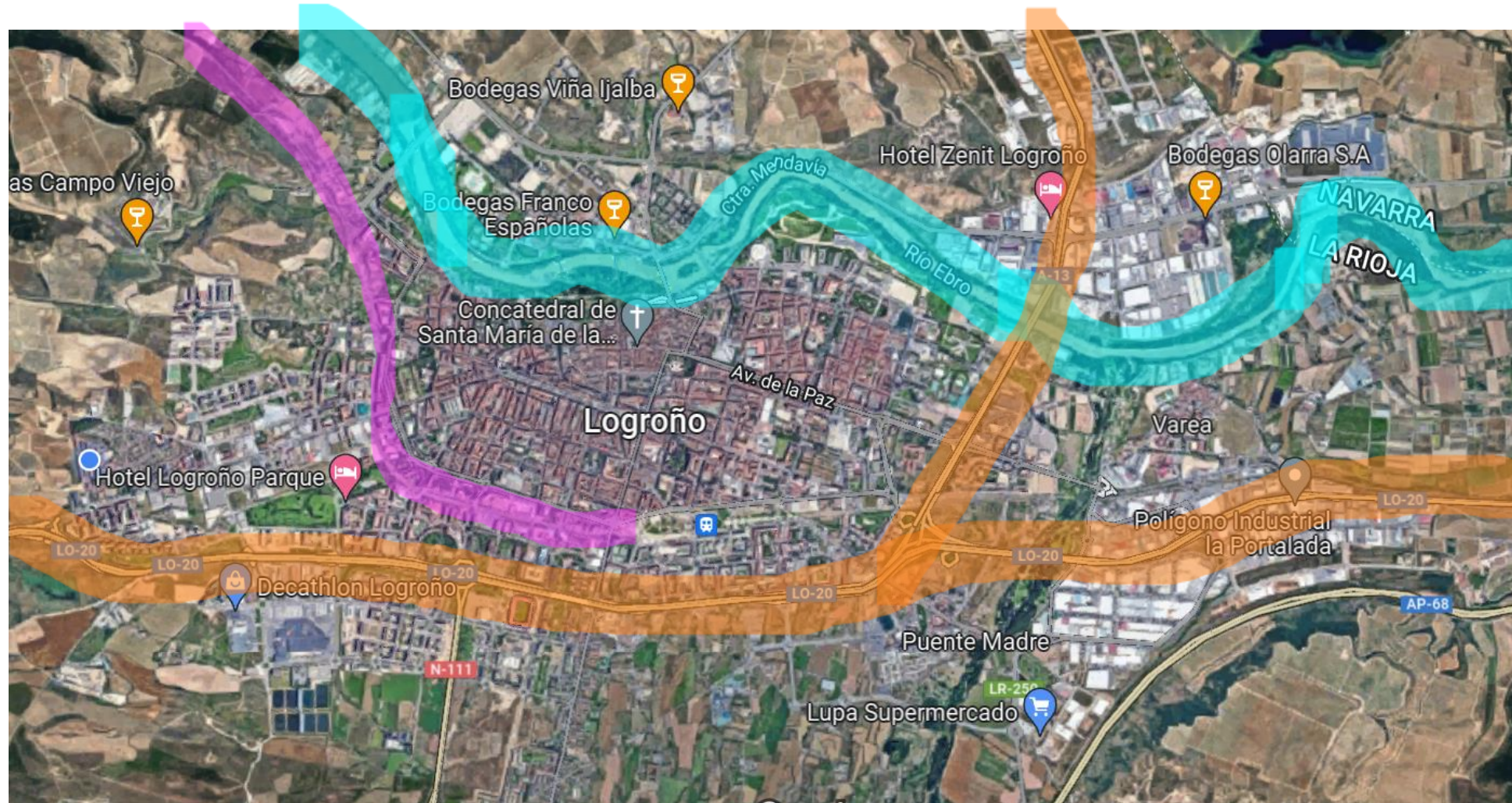


General presentation



Logroño

15 min

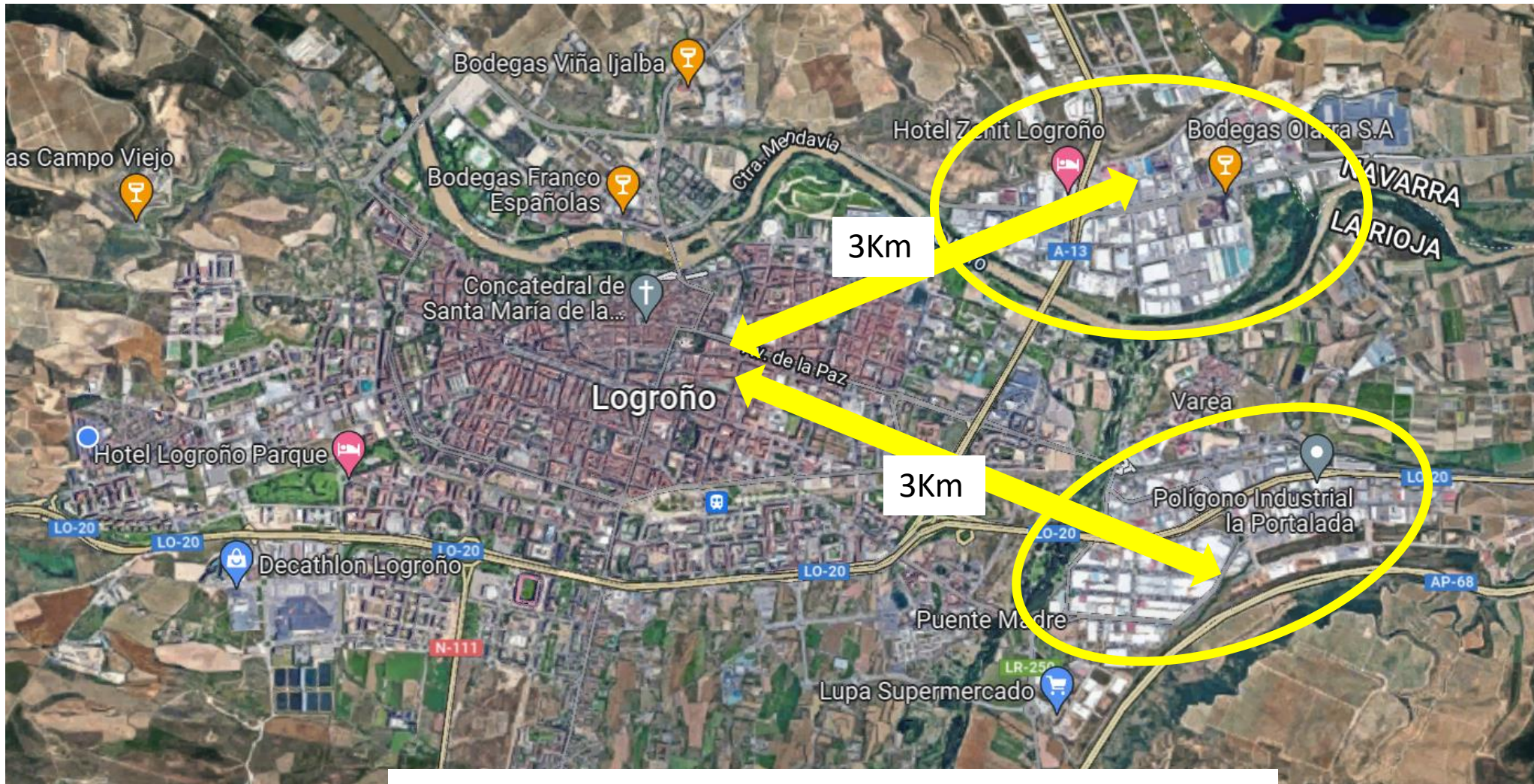


General presentation



Logroño

15 min

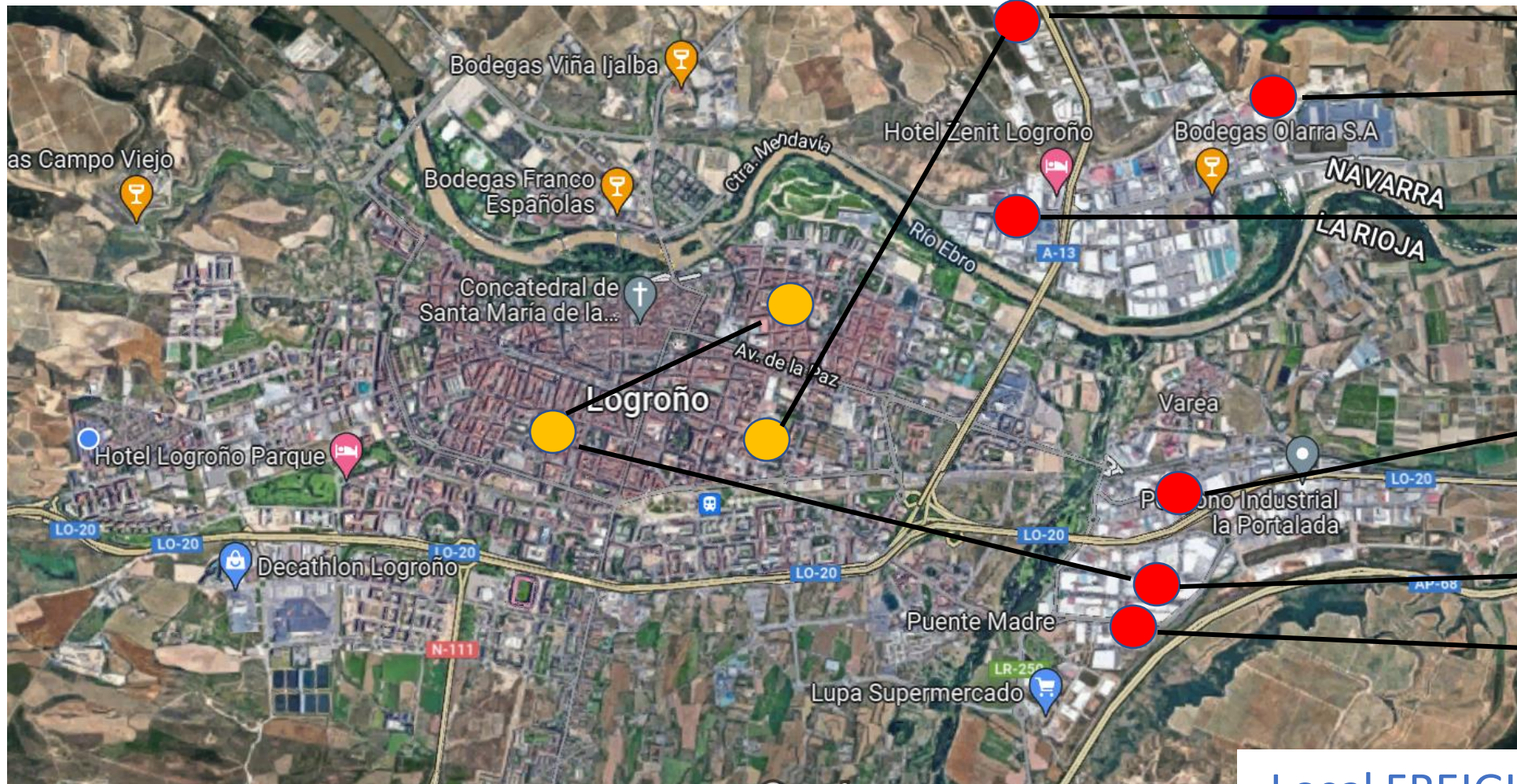


General presentation



Logroño

15 min



MRW

SEUR

VIGUERA
CBL - TIPSA

TRANSLOGROÑO

GLS

DHL

Local FREIGHT OPERATORS

General presentation



Logroño

15 min



Other Local
OPERATORS

Parcel delivery and
shipment

General presentation

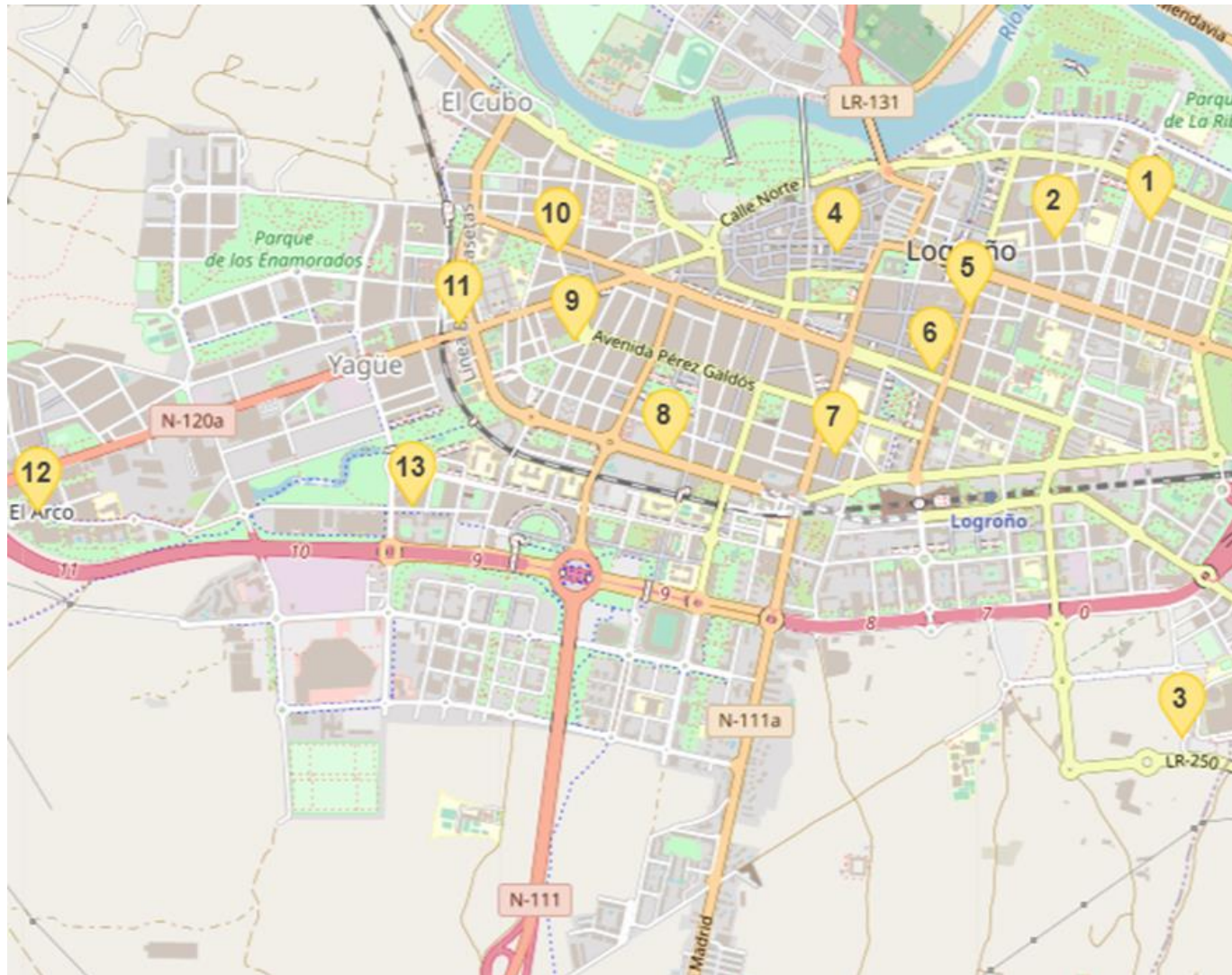


Logroño



Parcel delivery and shipment

Logroño: 13 local shops



General presentation



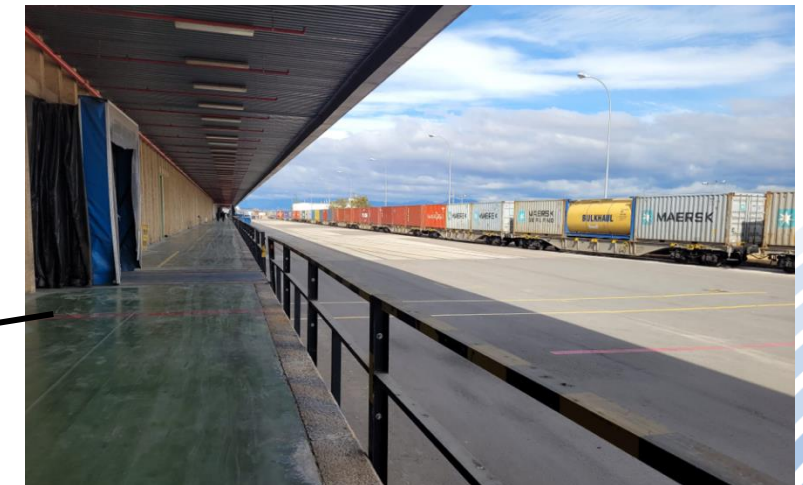
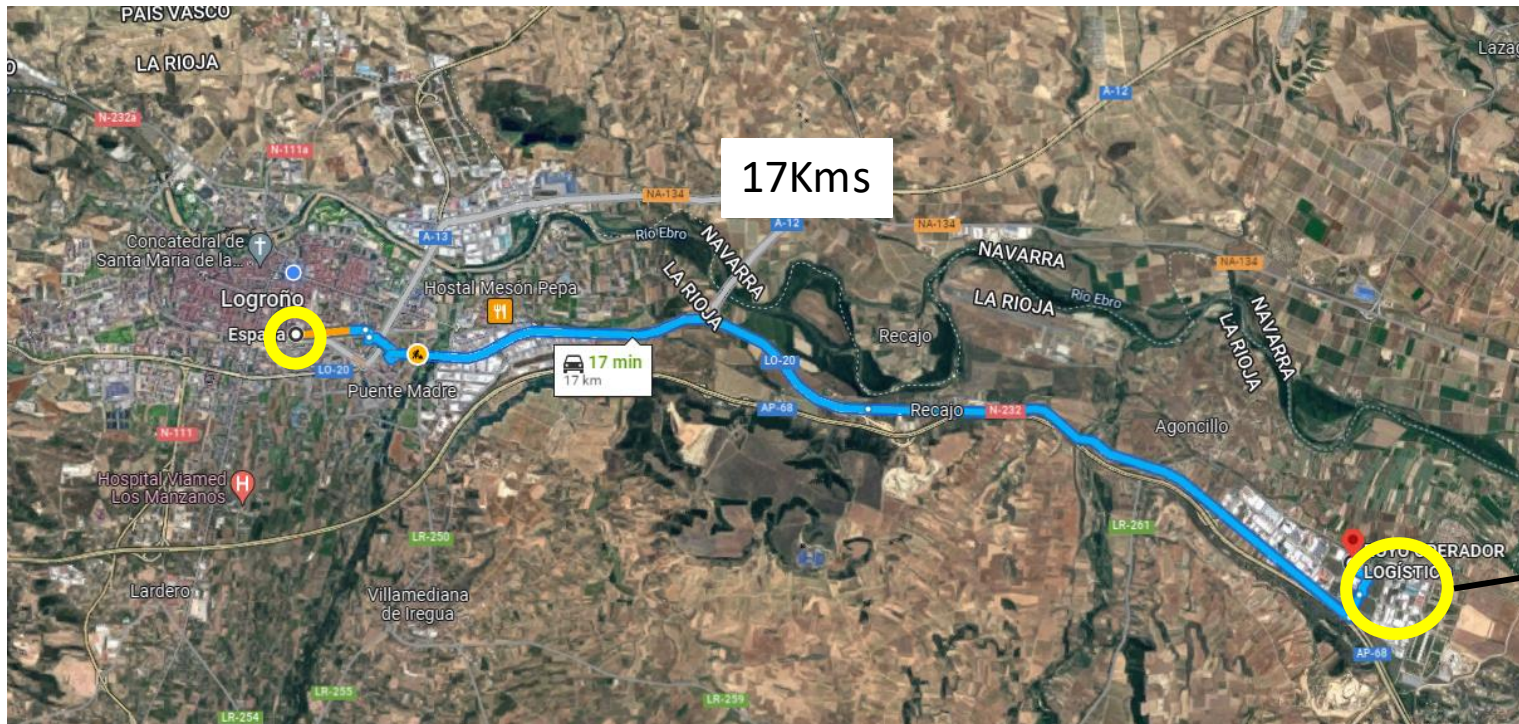
Micro Consolidation Centre (MCC) location

General presentation



Logroño

15 min



New intermodal HUB connected with Barcelona port

T7.3 Update on Logroño LL - UC1



Visit on-site with partners and external stakeholders



Operative since Feb. 2025 till Aug. 2026

- INT nano-hub
- INT app

T7.3 Update on Logroño LL - UC1



Municipal cargobike available since July 2025

- NGS sensors installed
- INT app
- Communication action:
55 digital totems



Informative session – Test with DHL



Video of the logistics process recorded during the test:
[UC1 DHL test \(ES\)](#)



www.decarbomile.eu

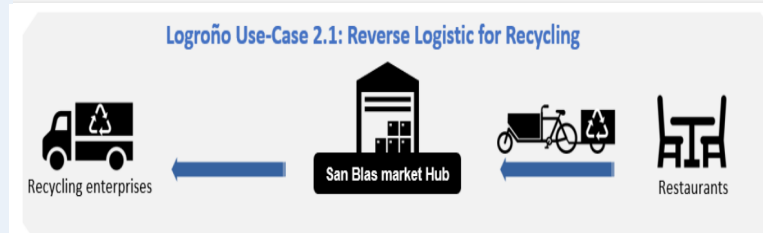
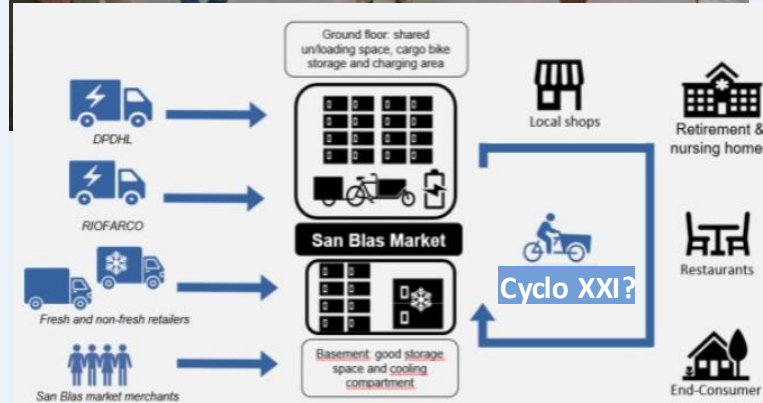
www.decarbomile.eu

T7.3 Update on Logroño LL – 3 use cases

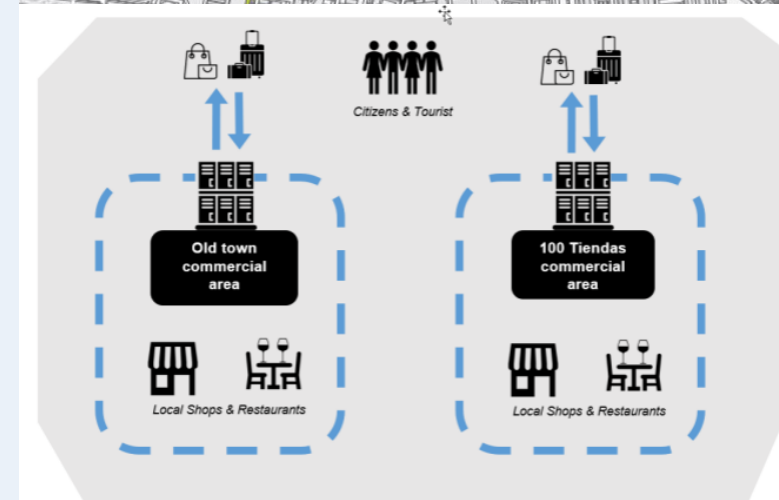
Consolidated flows at a nano-hub



Operations at San Blas market



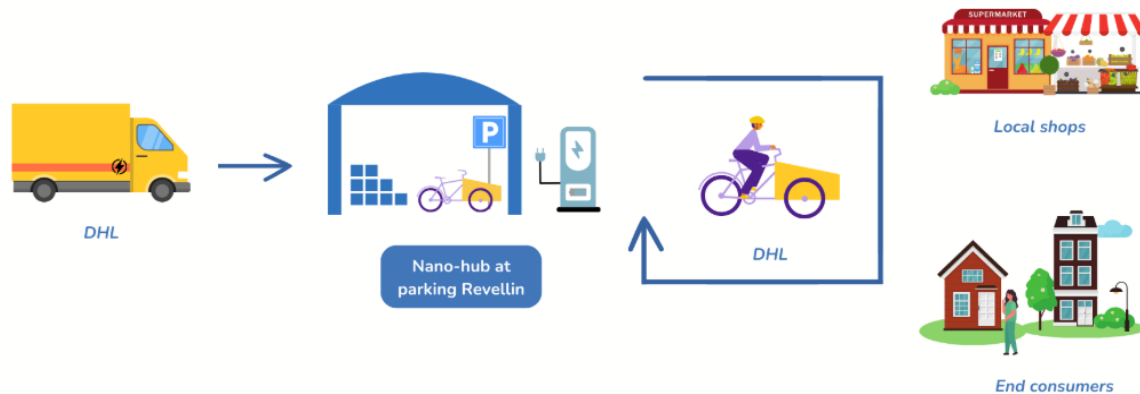
Smart lockers network



T7.3 Update on Logroño LL – 3 Uses Cases

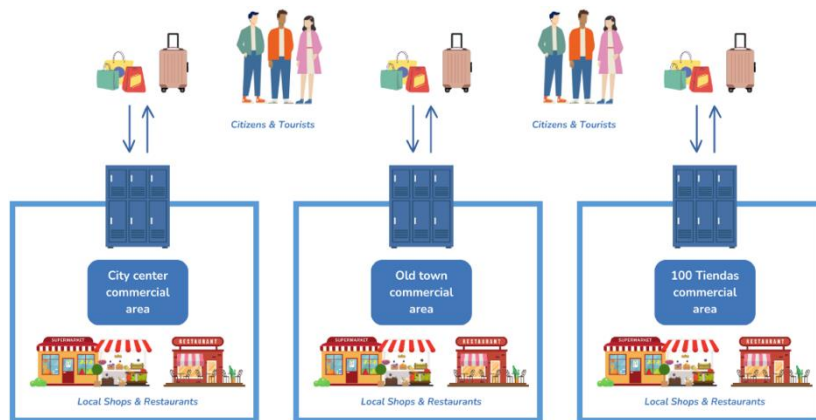
UC1: Consolidated flows at a nano-hub

Nano-hub ongoing since Feb.25 and cargo bike since Jul.25



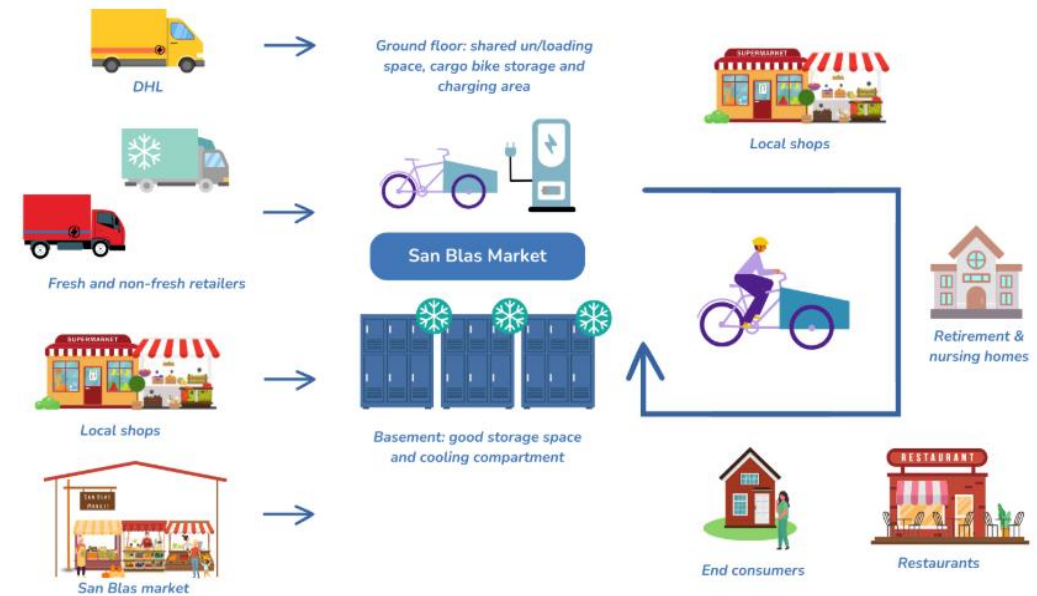
UC3: Smart locker network

Planned to start in Dec.25 till Aug.26



UC2: UCC at San Blas Market

Planned to start in Dec.25 till May26

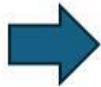


UC2.1: Reverse logistics for recycling

Planned to start in Dec.25 till May26



Test with spice store from San Blas Market



T7.3 Update on Logroño LL - UC2



- Several **on-site visits** with partners and external stakeholders.
- **Tender** for providing a delivery service, including reverse logistics, **ongoing**. A first attempt done in July.
- **Planned to start in Dec. till May.**

T7.3 Update on Logroño LL - UC2



- **Rehabilitation** of market's premises.
- Municipal **cargobike** available



**MiGROS**

ISTANBUL

Presentation of Istanbul living lab and challenges

Istanbul



Istanbul, also known as the City on Seven Hills, is a very sloping city.



Turkey's largest metropolis with a population of over **16 million** in a total area of **5,343 km²**. Larger than **38** countries and most crowded city in Europe.



60 percent of Turkey's annual logistics movements take place in Istanbul. The densest vertical urbanization is a significant factor increasing the rate **of logistics traffic/trips per mile** considerably.



Share (collaboration) of logistics resources mainly managed **by the private sector itself own**.



There are about **30 million** daily trips in Istanbul. The number of daily trips will be **38 million** in the 2040s. **15,800** new cars entering into road traffic per month.



Turkey received a total investment of **1.55 billion dollars** in 2021. **1.49 billion dollars** of this investment was spent solely on Istanbul.

Istanbul's Mobility in Numbers



%28

Public transport



~9,8 M

Daily ride on public transport



~1,4 M

Daily intercontinental trips



Trips on foot **%40,5**

Trips by bike **<%0,5**



45

Number of electric vehicles on the islands



6533

Bus number



Ferry number **66**

Sea taxi number **45**



Metro line number **10**

Tram line number **5**



262,15 km

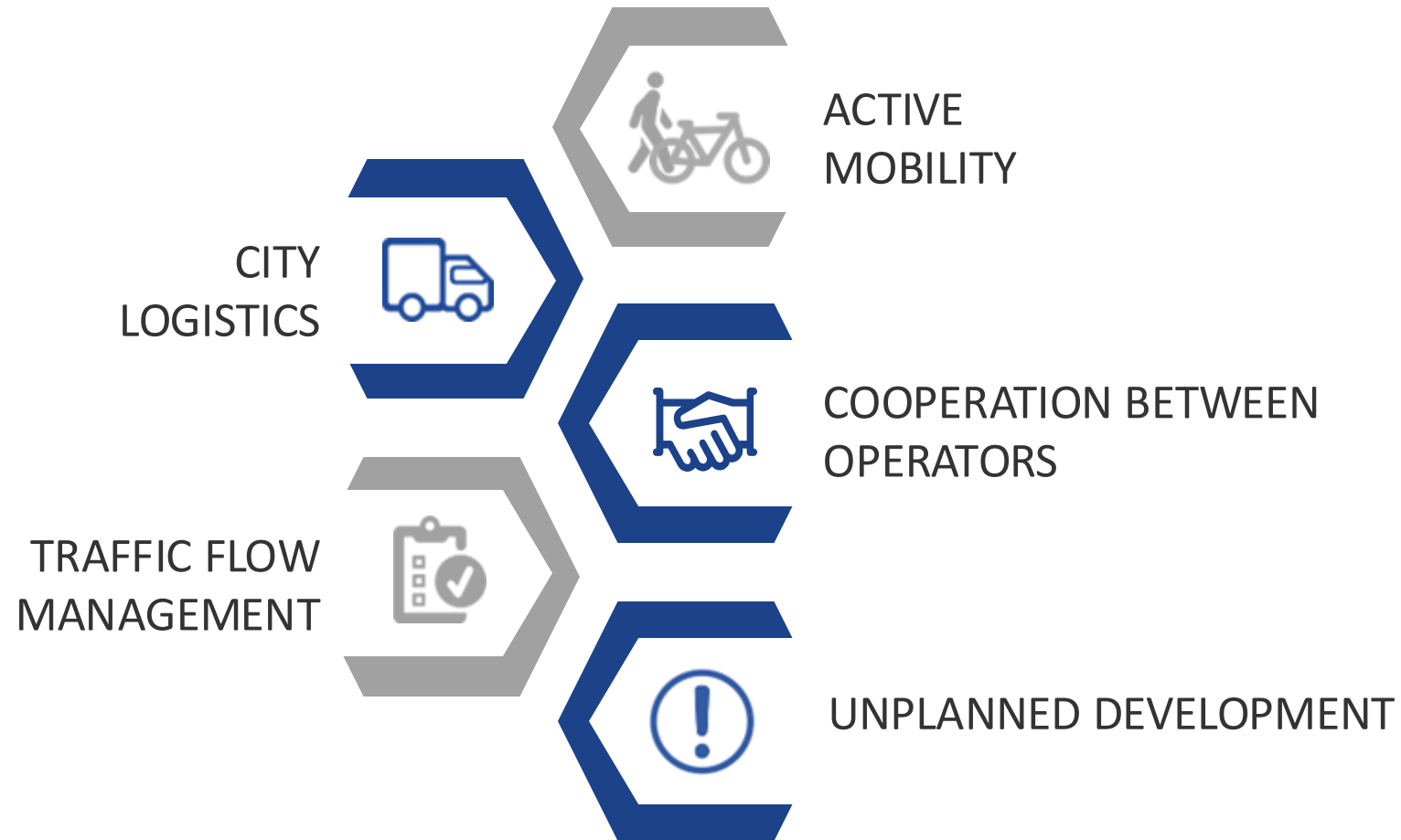
Rail system



~765 K

Number of daily passengers in metrobuses (BRT)

Urban Mobility Challenges



Urban Mobility Challenges

ACTIVE MOBILITY



Walking

- Too much walking time
- Less accessibility to daily amenities
- Poor connectivity between rail systems

Micromobility

- Hilly topography
- Unexpected behaviour - choosing scooters instead of bicycles
- Lack of infrastructure and design for micromobility
- Increasing micro-mobility usage
- Large young population
- Isbike – IMM support

Urban Mobility Challenges

CITY LOGISTICS



Consolidation Centers

- Not public example yet - at the planning stage
- Logistics Management Center will be established
- Key stakeholders (county municipalities, warehouses such as textile, construction etc.)

Prince Island Logistic Consolidation Pilot Project

- Istanbul's first %100 electric transportation area
- %100 e-logistics for year 2025
- %100 e-transit for all PT vehicle completed in 2020
- Green energy resources are more important

Last Mile

- Relatively weak public and private partnership
- Low use of sea and rail system delivery
- Increasing use of last mile delivery e-cargo micromobilities
- Increasing road occupation from the increasing traffic of on-demand last mile (instant) delivery initiatives

Urban Mobility Challenges

UNPLANNED DEVELOPMENT



Land-use and Transportation

- Growing city
- Insufficiency of the metro network
- Disadvantages of linear form
- Bottlenecks

Opportunity Areas

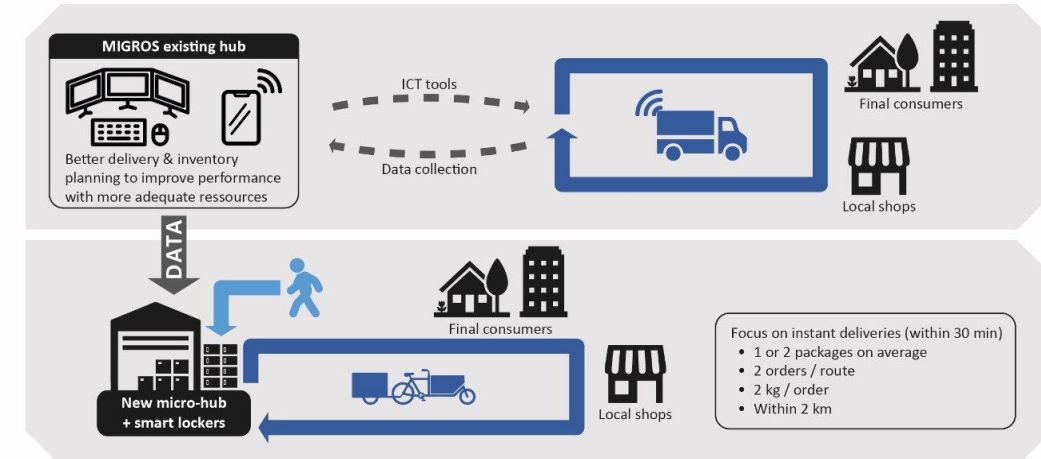
- Urban transformation
- Creating TOD projects in metro station
- Park and Ride spots out of city centre
- Reduce the use of automobile
- Supporting micromobility around metro station

T 7.3 Update on IST LL – 3 Use Cases

• USE CASE – 2: Enhancing Migros LMD Operation with e-Bikes

- New MCC in the proximity of the existing one from use case 1
- Only Migros operates
- MJET Bahariye (Avg. 3000 SKU, 156 m² sales area, 325m² warehouse, avg 6 motorbikes per day, avg.210 order before pilot)
- Operation:
 - Initially started with hybrid operation: multiple motorbikes and 4 e-bikes
 - Currently, 7 e-bikes in use (implemented sensors to 6 of them)
 - Parallely, 2 motorbikes in operation (for long distance and heavier orders)
 - Planning to have 9 e-bikes
 - Around 200 - 210 deliveries per day
 - 40 km/h speed
 - 900 meters – 1 km per order

Istanbul use cases 1 – 2
Improving operations in existing hub and design of a new MCC based on experiences and data



T 7.3 Update on IST LL – 3 Use Cases

- USE CASE – 2: Enhancing Migros LMD Operation with Load Pooling
 - Test of SCU's digital tool for optimized delivery tour
 - By taking additional orders through customer communication for vehicles that will be distributed with low capacity
 - Some indicators decided to measure/track :
 - Increase in average operating revenue
 - Average load factor of a vehicle during deliveries
 - Number of delivery points per trip
 - Use of public land (road) by vehicles
 - Migros time-slot delivery operation
 - First, Meydan AVM MMM Migros decided to use, then planned store has changed – Caddebostan MMM Migros
 - Big-E Electrical Vehicle will be planned to use: <https://big-e.com.tr/en>



T 7.3 Update on IST LL – 3 Use Cases

- USE CASE – 3 Urban Consolidation Centre used by MIGROS & ILETMEN

- Operators will then operate their own fleet of e-bikes for delivery
 - MIGROS will be working with its delivery partner Paket Taxi.
 - Iletmen will be making distribution with its own employees.
- Parcels will be stored in the UCC
- Companies will have separate storage areas within the UCC.
- 500m² - 800 m² area
 - Most of the places will be used by MIGROS.
- Smart lockers located near the consolidation center
- EV charging station will

