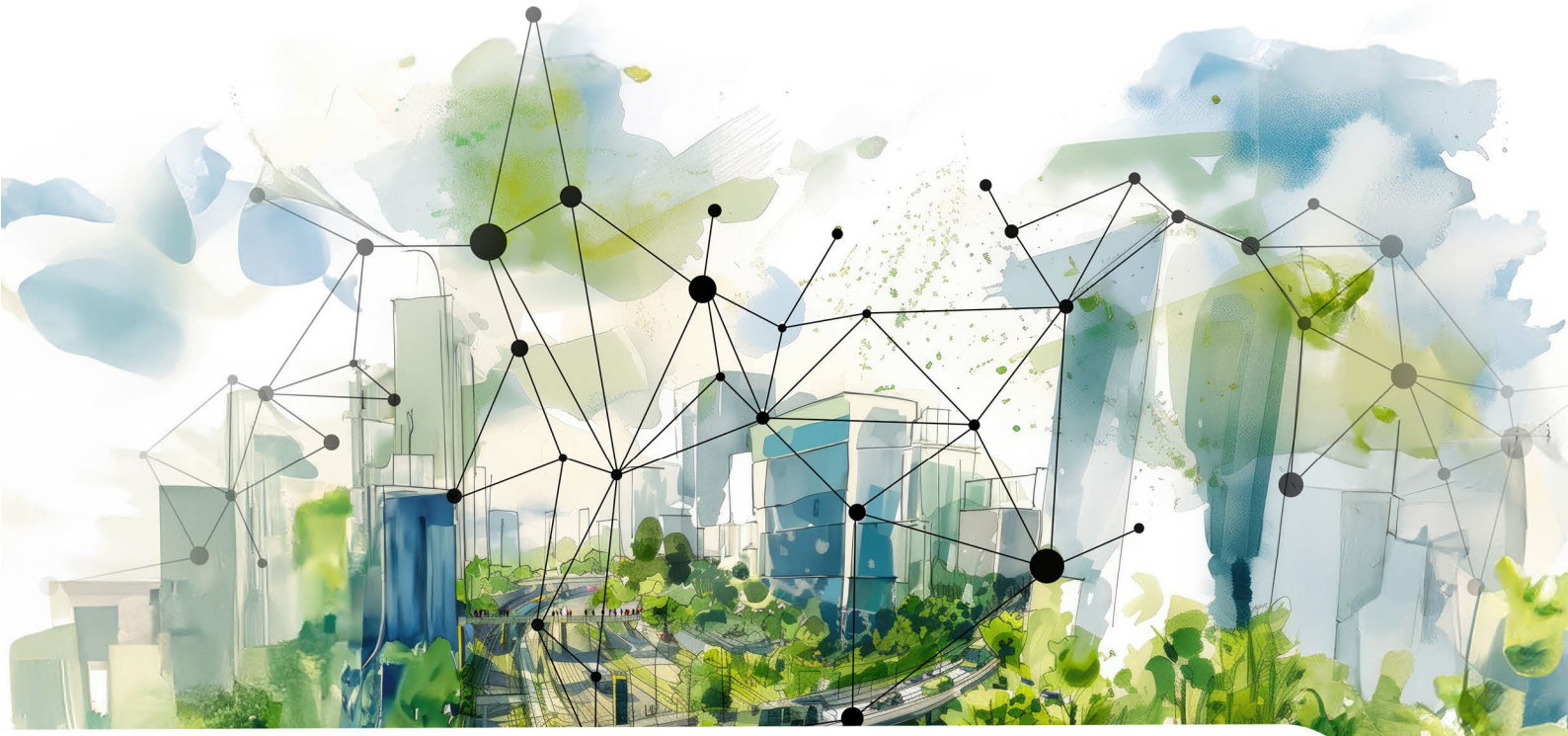
MOBILITIES FOR EU



NEW MOBILITY SOLUTIONS FOR CLIMATE NEUTRALITY IN EU CITIES:

FLYING URBAN MOBILITY LAB (FLUM) IN GDANSK, POLAND

PERIODIC OFFICIAL REPORT (M1-M18)

BENEFITIARY PERIODIC OFFICIAL RAPORT

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ACRONYM	DESCRIPTION
FLUM	Flying Urban Mobility Lab – a name of local UT-LAB in Gdansk
LC	Leading Cities – Madrid and Dresden
RC	Replication Cities incl. Gdansk
PKM	Pomorska Kolej Metropolitalna – sub-regional railway
SKM	Szybka Kolej Miejska – metropolitan railway
UG	University of Gdansk
PG	Politechnika Gdanska – Gdansk University of Technology
OBC	Olivia Business Centre – an office complex

Publishable summary

The City of Gdansk has become a beneficiary of the Mobilities for EU project to improve the quality of life of its residents and the resilience of its urban system to crises, including those related to climate change. This will be achieved by implementing sustainable mobility solutions in the pilot area of Nowa Oliwa.

The Municipality of Gdansk project partners include the University of Gdansk, Gdansk University of Technology, Olivia Centre, Oliva District Council, Gdansk Roads and Greenery Management and the Infrastructure Department of the Marshal's Office of the Pomorskie Voivodeship. The UT-LAB is also attended by the main stakeholders of the pilot area, including NGOs, residents, students and entrepreneurs.

This report covers the activities of the Gdansk UT-LAB from January 2024 to June 2025. It discusses the process of identifying the main problems and opportunities for transforming the problem area through extensive introductory analyses and linking these to existing Gdansk urban policies. Additionally, it describes the preparation process for constructing the Gdansk Urban Transport Lab and outlines the creation process. The report also describes the first dissemination and educational activities undertaken by the FLUT, including workshops on urban logistics, an open day, and an information booth at a neighbourhood festival.

Participation in the work and project will bring many benefits for Gdansk citizens. At the forefront, the creation of the Gdansk UT-LAB will facilitate ongoing monitoring of urban mobility transformation processes. In addition, by participating in WP5 of the project, the city of Gdansk will gain the opportunity to imply modern transportation solutions developed by Leading Cities such as autonomous vehicles or a smart charging system for electric vehicles.

Co-funded by the European Union

1. Introduction

1.1. Purpose, scope and target group

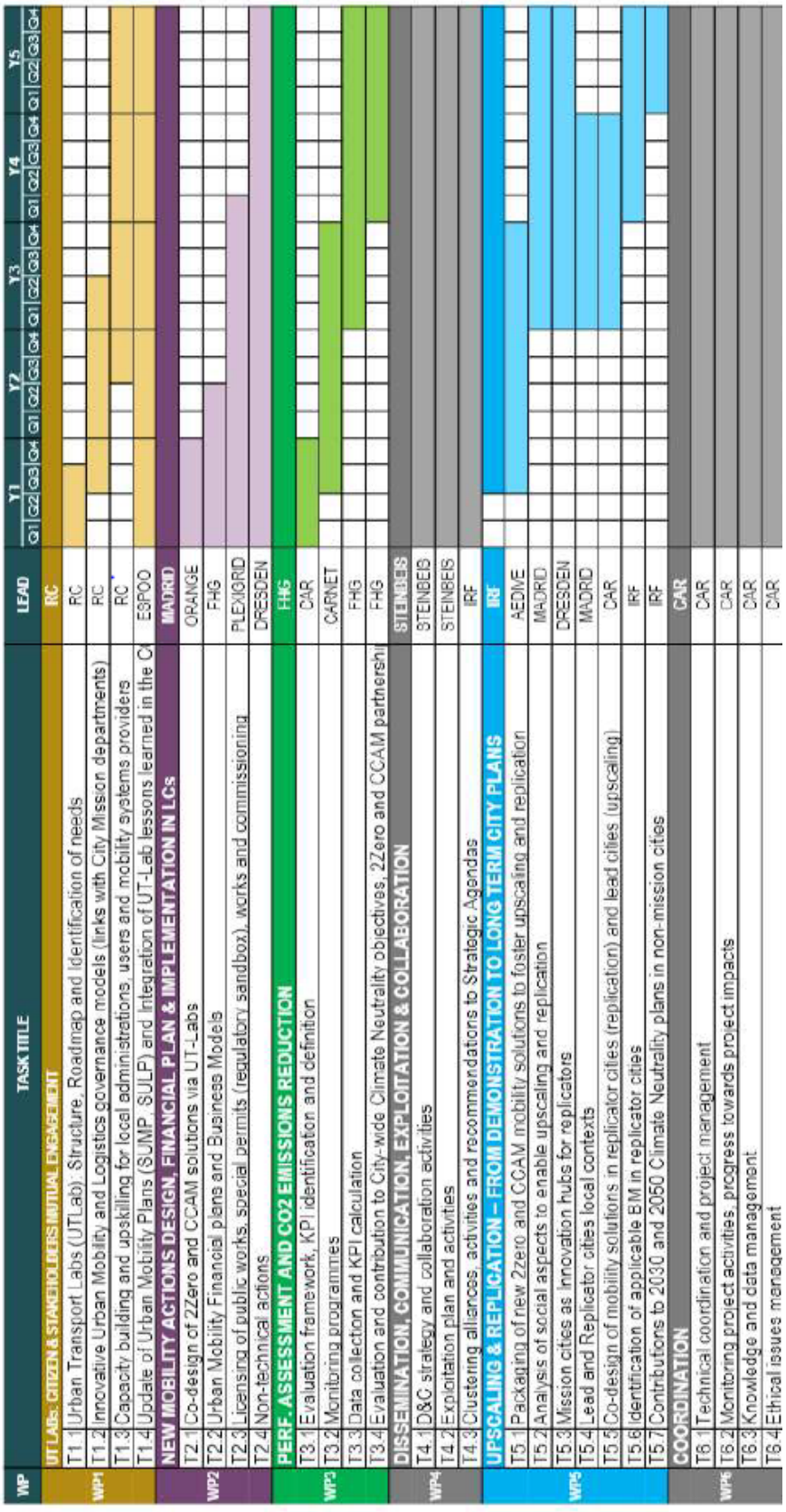
Participation in the project

MOBILITIES for EU is a new project that is part of the Horizon Europe program. The goal is to implement new concepts of mobility and freight transport in the European Union. The project, which approaches to implementing the European Green Deal, was initiated in January 2024 by the two leading cities of Madrid (Spain) and Dresden (Germany). The replication cities include Ioannina (Greece), Trenčín (Slovakia), Espoo (Finland), Sarajevo (Bosnia and Herzegovina) and Gdansk (Poland) – represented in the Figure 1. below.

Figure 1 Seven UT Labs in MOBILITIES FOR EU project. Source: UT-LABS STRUCTURE, ROADMAP AND NEEDS IDENTIFIED 2024: 9

Urban Transport Labs (UT Labs) have been established in all seven project cities. UT-Labs acts as an Innovation Centres, with the goal of supporting the rapid expansion of innovative solutions and replicability at EU level. The labs are involved in all phases of the project from piloting, to planning the scale of operations, to replicating the solutions after the project is completed. All to ensure that the new urban mobility solutions are able to meet the needs of city residents and other local contributors.

The project agreement was signed by Municipality of Gdansk on January 2024. The city of Gdansk would participate as a replicating city in the work of two Work Packages: WP1 “Urban Transport Lab: citizens and stakeholders mutual engagement” lead by WERIGHTCLICK and WP5 “Upscaling & Replication - from demonstration to long term city plans” lead by AEDIVE and IEF. By the end of the 18-month period, three tasks from WP1 and one from WP5 were already open (Table 1.).



WP	TASK TITLE	LEAD	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4
WP1	**UT LABs: CITIZEN & STAKEHOLDERS MUTUAL ENGAGEMENT**	RC																				
	T1.1 Urban Transport Labs (UTLab): Structure, Roadmap and identification of needs	RC																				
	T1.2 Innovative Urban Mobility and Logistics governance models (links with City Mission departments)	RC																				
	T1.3 Capacity building and upskilling for local administrations, users and mobility systems providers	RC																				
	T1.4 Update of Urban Mobility Plans (SUMP, SULP) and Integration of UT-Lab lessons learned in the C	ESPOO																				
WP2	**NEW MOBILITY ACTIONS DESIGN, FINANCIAL PLAN & IMPLEMENTATION IN LCs**	MADRID																				
	T2.1 Co-design of 2Zero and CCAM solutions via UT-Labs	ORANGE																				
	T2.2 Urban Mobility Financial plans and Business Models	FHG																				
	T2.3 Licensing of public works, special permits (regulatory sandbox), works and commissioning	PLEXIGRID																				
	T2.4 Non-technical actions	DRESDEN																				
WP3	**PERF. ASSESSMENT AND CO2 EMISSIONS REDUCTION**	FHG																				
	T3.1 Evaluation framework, KPI identification and definition	CAR																				
	T3.2 Monitoring programmes	CARNET																				
	T3.3 Data collection and KPI calculation	FHG																				
	T3.4 Evaluation and contribution to City-wide Climate Neutrality objectives, 2Zero and CCAM partnershi	FHG																				
WP4	**DISSEMINATION, COMMUNICATION, EXPLOITATION & COLLABORATION**	STEINBEIS																				
	T4.1 D&C strategy and collaboration activities	STEINBEIS																				
	T4.2 Exploitation plan and activities	STEINBEIS																				
	T4.3 Clustering alliances, activities and recommendations to Strategic Agendas	IRF																				
WP5	**UPSCALING & REPLICATION – FROM DEMONSTRATION TO LONG TERM CITY PLANS**	IRF																				
	T5.1 Packaging of new 2zero and CCAM mobility solutions to foster upscaling and replication	AEDIVE																				
	T5.2 Analysis of social aspects to enable upscaling and replication	MADRID																				
	T5.3 Mission cities as Innovation hubs for replicators	DRESDEN																				
	T5.4 Lead and Replicator cities local contexts	MADRID																				
	T5.5 Co-design of mobility solutions in replicator cities (replication) and lead cities (upscaling)	CAR																				
	T5.6 Identification of applicable BM in replicator cities	IRF																				
	T5.7 Contributions to 2030 and 2050 Climate Neutrality plans in non-mission cities	IRF																				
WP6	**COORDINATION**	CAR																				
	T6.1 Technical coordination and project management	CAR																				
	T6.2 Monitoring project activities, progress towards project impacts	CAR																				
	T6.3 Knowledge and data management	CAR																				
	T6.4 Ethical issues management	CAR																				

Table 1 Timeline of Mobilities for EU project activities - Gdansk is taking part in WP1 and WP5. Source: Mobility for EU DOA: Quality and Efficiency of Implementation, 35

In the first period of WP1 (M1–M18), Gdansk should develop a strategy for cooperation and interaction in urban mobility and logistics planning and operations and support the facilitation of co-creation practices in urban transport labs (UT Labs) by engaging with researchers, investors, and experts.

The goal is also to implement training activities that will increase the capacity building and upskilling of local and regional authorities, local stakeholders, and solution users. All of this is being done in preparation for the rollout of innovative smart mobility solutions and related connectivity infrastructure, which will lower energy demand.

In terms of WP5, the Municipality of Gdansk cooperated so far in the implementation of Task 5.1 Packaging of new 2zero and CCam mobility solutions to foster upscaling and replication.
The main tasks were:

- Capacity building to develop assumptions for CCC.
- Familiarization with existing documents of this type in Poland.
- Recognizing the national legal regulations related to autonomous vehicles
- Meetings with stakeholders to learn about their needs and points of view.
- Selecting the area in which CCAM could potentially operate.
- Waiting for list of solutions sheets from IRF and AEDIVE.

As part of WP1, RC Gdansk had the opportunity to work with the WERIGHTCLICK leader to accomplish three tasks:

- Task 1.1 Urban Transport Labs (UTLab): Structure, Roadmap and Identyfication of needs
- Task 1.2 Innovative Urban Mobility and Logistics governance models (links with City Mission departments)
- Task 1.4 Update of Urban Mobility Plans (SUMP, SULP) and Integration of UT-Lab lessons learned

The wide range of activities undertaken in the reported period within the framework of the above-mentioned tasks is described in Part Three.

The city of Gdansk

Gdansk, the largest city in the Pomerania region of northern Poland, has a thousand-year history at the crossroads of important trade and communication routes. It currently has a population of about 487,000 and 262 km^2 of land area.

Gdansk is a city marked by history like few others, known as the site where one of the most tragic chapters in human history began: the World War II. This conflict, in which two great totalitarianisms clashed, caused the loss of the legacy of the work of numerous generations, including magnificent works of architecture.

Inter-war Gdansk was on the other hand a field of conceptual work of prominent early modernist urban planners. Residential neighbourhoods full of space and greenery were designed and public transport was developed for a perspective as distant as 1960, when the city was expected to approach one million residents. Unfortunately, the Nazi rise into power followed by the war destruction and then the Stalinist period have made the implementation of most of their ideas impossible. In the decades following the war, Gdansk saw various incomplete urban reconstruction efforts. These included the attempts at restoring its former shape of the 1950s, brutal modernisation of the 1960s and the rapid population growth of the 1970s followed by a huge crisis of the 1980s resulting in the collapse of the Eastern Block.

The legacy of these post-war processes was a depopulated city centre and overpopulated suburbs. The city is to this day characterised by long commuting distances and cut by roads that divide rather than connect. These issues made Gdansk difficult to manage and maintain. In the present study we will refer to an even more peculiar case - a district that emerged following the incorporation of the suburban borough of Oliwa into the city of Gdansk in 1926. The void that separated the densely built-up areas of the two centres: a modern city and a suburb retaining a strongly pre-industrial appearance, has never received a substantial planning study. It was exclusively along the railway tracks that development took place, including mainly industrial plants benefiting from the easy access to transport and vast storage areas. The large housing developments of the communist period were carried out on the farther outskirts of the district, and as a result mainly single-family detached housing has been preserved in its centre, patched up with some prefabricated blocks of flats, single or in small groups, often randomly located amongst the pre-war villa gardens.

All of these conditions have contributed to the complex, fragmented functional and spatial structure of the city of Gdansk, with numerous constraints on the implementation of innovative sustainable mobility solutions Figure 2).

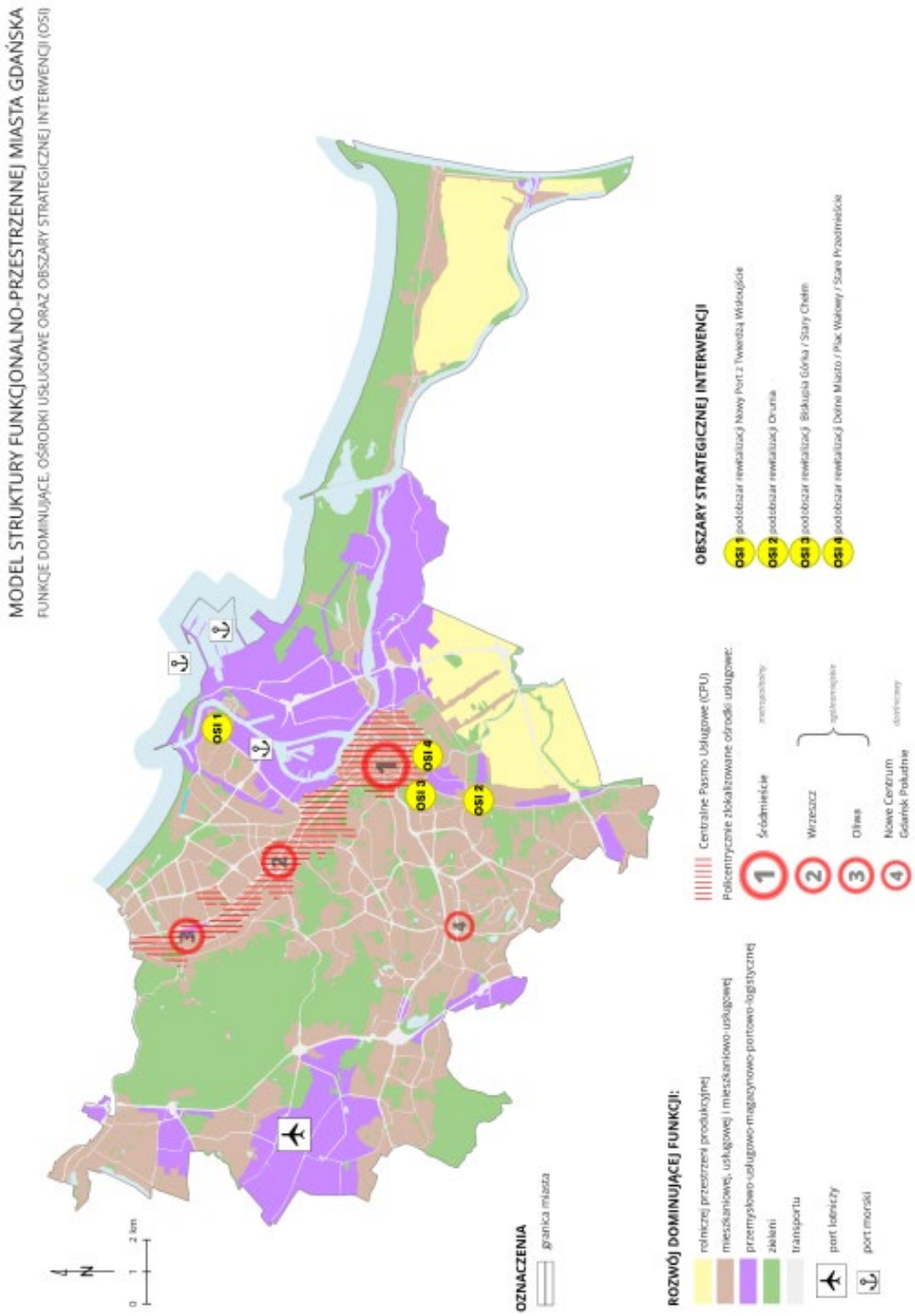


Figure 2 Model of the functional and spatial structure of the city of Gdansk. Source: Gdansk 2030: Development Strategy of the City of Gdansk, 41

The replication area

The local project, focused of new mobility solutions for Nowa Oliwa, aims to increase modern, environmentally friendly and efficient mobility in a new part of the historic Oliwa district. The study area brings together most of the city's problems related to urban mobility.

In 1970 a huge undeveloped grassland in the middle of the area was decided to be handed to the university. However, the university has not been able to fill it with educational facilities to this day. The areas surrounding the faculty buildings have been developed with provisional buildings including car showrooms, drive-in restaurants, gas stations and supermarkets with extensive car parks. At the turn of the 21th century, most of the industrial plants and storage facilities gave way to office centres, which began to grow rapidly along the main transport axis (Figure 3).

However, this process has been slowed down by successive economic crises, and changes in the organisation of work brought by the pandemic put a halt to many already announced office projects. Existing planning regulations do not allow residential development in these areas causing another period of stagnation. However, it may be an opportunity to sort out urban problems that have accumulated over the years, including the challenges of passenger and freight transport which will only increase with further investments once they are finally launched.

Figure 3 Gdansk Replication Area - Nowa Oliwa – at the beginning of XX century (up) and now (down). On the front, historical buildings of the formerly separate town, now a district of Gdansk Oliwa. Source: Archive of the Office of the Architect of the City of Gdansk

The study area is consistently of great interest to investors due to its exceptionally favorable location and the availability of numerous investment opportunities. It is located along the central transportation corridor of Gdansk and the entire Tri-City region (Gdansk, Gdynia, Sopot) - Grunwaldzka Avenue (Figure 4).

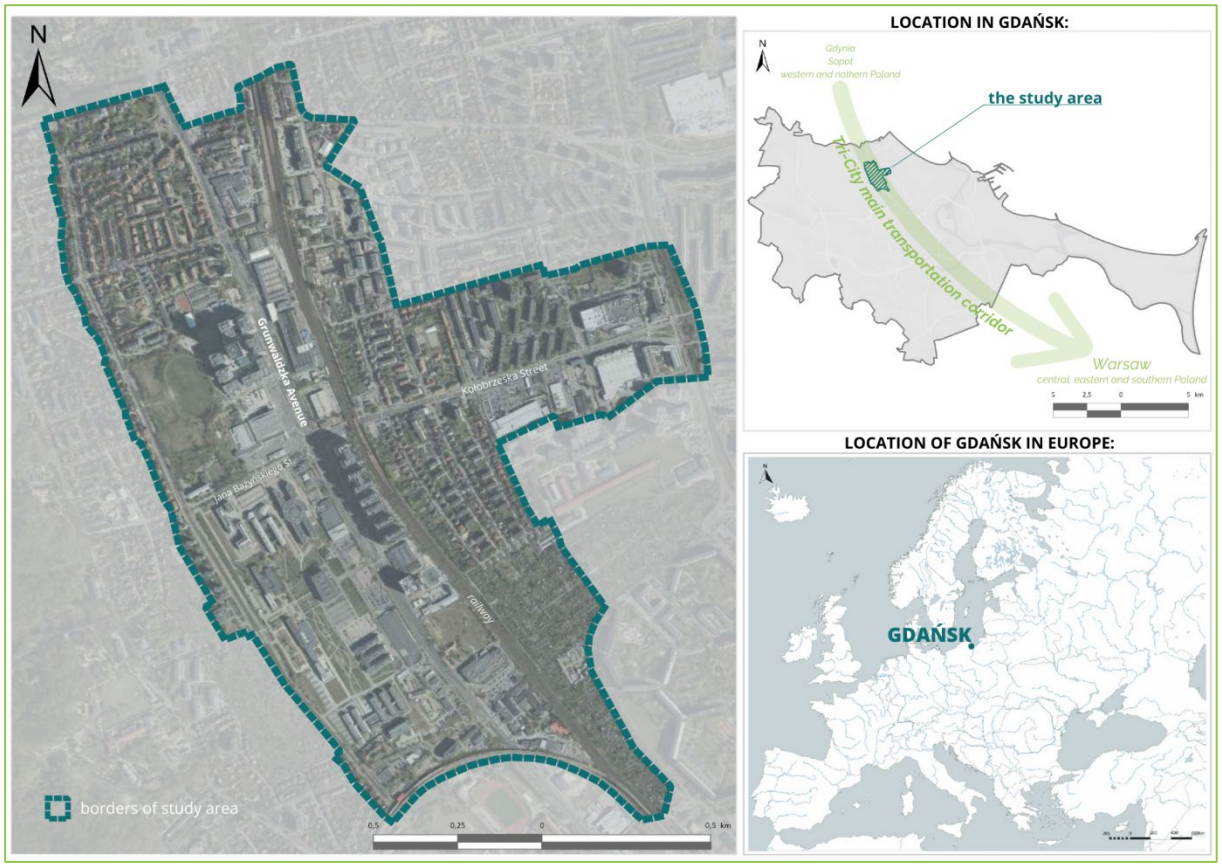


Figure 4 Location of the study area on the aerial photograph and locating it in relation to the area of the City of Gdansk and its location in Europe.

The study area – Nowa Oliwa - covers an area of approximately 100 hectares. The diversity of development within the study area, i.e. the distinctive parts - northern: historical, central: business, and eastern: residential and commercial, constitutes both its richness and a major design challenge. Study area also includes some of the last industrial areas on the central axis of Gdansk - the remains of the "Bałtyk" confectionery factory on Droszyńskiego Street, the buildings between the railway tracks and Śląska Streets, and the complexes of the Federal-Mogul Bimet SA (Grunwaldzka Avenue) and the Ship Technology Centre (Szczecińska Street). In total, this is about 20 hectares of land, which may be transformed in the near future.

The street system of the study area includes a main road (Grunwaldzka avenue), collector roads (Kolobrzeska, Bażyńskiego, Wita Stwosza streets) supplemented by a network of local and access roads. The main streets in New Oliva are characterized by heavy traffic, especially evident during rush hour, when congestion reaches adjacent intersections. Traffic is generated not only by destinations located in the area (offices, university, shopping malls, etc.), but also by transit traffic between agglomeration cities.

The center of the study area is the city's largest concentration of office buildings represented by the three largest complexes: Olivia Business Centre, Alchemia and Arkońska Business Park. The total built-up area of office buildings is about half a million square meters. It is also home to the Baltic Campus of the University of Gdansk with an area of about 27 hectares and a total built-up area of buildings of about 280,000 sqm. Interestingly, there is not a single residential building in the center of the analysis area - in addition to the aforementioned office,

industrial and university buildings, mostly commercial and service buildings appear here, mostly of supra-local stature - mainly car dealerships (e.g., Lexus, Nissan) and construction hypermarkets (Castorama, Leroy Meroy).

The eastern part of the area is dominated by residential development: near the railroad tracks mainly single-family and cooperative housing (the so-called Little Warsaw and cooperative housing estate SM Kolejarz) and in the depth of Kołobrzeska Street new multi-family complexes (four partially enclosed residential complexes: University Quarter, Solvo, Mezzo and the largest: Albatross Towers). The total built-up area of residential buildings in the subarea is about 138,000 sq. m. The relatively large number of dwellings (about 1,600) in a small area illustrates well the presence of intensive residential development in the character of an island. In fact, in the immediate vicinity of the area, south of Szczecińska and Krynicka Streets, there are three separate family allotment gardens (in Polish, abbreviated as ROD): ROD “Pilotów”, ROD “Przymorze” and ROD “Kolejarz”. All of them are fenced in and closed to the public, which is currently a significant spatial barrier. Another characteristic of Kolobrzeska Street is the fact that in such a small area there are up to four large retail stores: CH Alfa, Auchan, Lidl and Obi. The total area of retail and service buildings is approximately 105,000 square meters, which is the second largest concentration of retail space in the entire Grunwadzka Avenue corridor (Przeworska et al 2022) .

In the northern part of the area, the area known as Old Oliva also has its own character. It is a fragment of the historical urban system of a suburban villa estate with buildings from the nineteenth century. The residential development is accompanied by squares and mini-parks (e.g. a square on Husa Street), social services - schools, kindergartens, nurseries and basic retail and services.

This diversity and the concentration of the many faces of Gdansk's urban fabric in one place determined the decision to make Nowa Oliwa the area of research and analysis of the Gdansk UT LAB. Gdansk UT-Lab creates project concepts as local solutions to real problems identified through a broad group of stakeholders invited to participate in this project.

In previous years, the area has been the subject of detailed analysis as part of a multi-phase holistic study (including Kucharczak, Zgórska 2022, Przeworska el al. 2022, Kluz 2022 and more). These workshops on the development of this area helped local authorities and urban planners to understand the expectations and needs of residents regarding the appearance and functionality of this area. The conclusions are compiled later in the report.

1.2. Contribution from Partners

The local project in Gdansk involves a group of experts from fields ranging from sociology to transportation management, as well as urban planners, architects, local government officials and community activists. The team's activities are coordinated by the office of the Architect of the City of Gdansk, represented by Paulina Borysewicz.

Table 2. Partners of Gdansk UT Lab.

PARTNER SHORT NAME	CONTRIBUTIONS
Oliwa District Council	Help promote events, activate local community
Oliva Business Centre	Provides venue for events and meetings, helps promote project activities
Pomeranian Marshall Office	Substantive support, participation in events as experts
Plans for Urban Mobility Actions (URBACT network) PUMA	Cooperation within the framework of similar topics, exchange of expertise
Gdansk City Transit Authority	Participate in events, provide data on urban transportation.
University of Gdansk	Scientific support, participation in events as experts, providing venues
Gdansk University of Technology	Scientific support, participation in events as experts
Gdansk Development Agency	Provide data on the area of analysis, potential for future design cooperation.

2. Objectives and expected impact

2.1. Objectives

This deliverable contributes to the objectives of WP1 (*Urban Transport Lab: Citizens and Stakeholders Mutual Engagement*) and Task 1.2 (*Innovative Urban Mobility and Logistics Governance Models*), by documenting the establishment, operation, and outcomes of the Flying Urban Mobility Lab (FLUM) in Gdansk. The overarching aim is to test and advance governance models that integrate citizens and stakeholders in the co-creation of innovative solutions for urban mobility and logistics, contributing to the European Green Deal and climate neutrality goals.

Specific objectives of this deliverable include:

- Engaging local stakeholders and citizens in diagnosing mobility and logistics challenges in the Nowa Oliwa district.
- Co-creating innovative, feasible, and locally appropriate solutions addressing urban freight, last-mile delivery, and public space quality.
- Building capacity and fostering partnerships among municipal departments, private sector actors, academia, and local communities.
- Creating a replicable model of participatory governance in urban logistics planning (in the form of an outline for a Sustainable Urban Logistics Plan — SULP).

With the delivery of this report, the following objectives have been achieved:

- Launch of the Gdansk FLUM as a functional innovation hub, providing a platform for collaborative problem-solving.
- Organization of participatory activities (roundtables, working meetings, open workshops) that actively engaged diverse stakeholders.
- Diagnosis of logistical challenges and opportunities in Nowa Oliwa, informed by socio-economic, spatial, and transport analyses.
- Development of actionable proposals for logistics hubs, shared infrastructure, last-mile delivery improvements, and public space enhancements.
- Documentation of lessons learned and recommendations for future urban logistics planning and policy development.

2.2. Expected Impact

The expected impact of this deliverable and the broader Gdansk FLUM activities includes:

- Enhanced local capacity to address urban logistics in line with climate and liveability goals.
- Reduction of greenhouse gas emissions and improvement in the efficiency of goods delivery through innovative and shared solutions.
- Stronger stakeholder ownership and support for sustainable urban mobility and logistics strategies, ensuring higher acceptance and long-term sustainability.
- Provision of evidence and a replicable governance model for other European cities facing similar challenges.
- Contribution to EU-level objectives, particularly those articulated in the European Green Deal, the Urban Mobility Framework, and the Sustainable and Smart Mobility Strategy, by demonstrating integrated, citizen-driven approaches to urban logistics.

This deliverable also lays the groundwork for future pilot implementations and further research, supporting the scaling and replication of solutions across the EU.

3. Description of technical/scientific activities

3.1. Introductory characteristics of the development trends of modern freight transport in Poland, Polish main cities and the city of Gdansk

The basis for the consideration of innovative cargo transport in Nowa Oliwa in Gdansk was an introductory analysis of the main trends in the development of modern cargo transport in Poland, with particular emphasis on cities that are the capitals of regions such as Gdansk.

Freight transportation in Polish cities is a serious problem. Truck traffic is a nuisance for residents. Reducing these nuisances is a major challenge but is widely expected by residents. A nationwide systemic solution from 2018 is to allow zero-emission cars to drive on bus lanes. Such a possibility has been enshrined in the Traffic Law on the basis of the Law on Electromobility and Alternative Fuels. This gives an incentive for courier companies to purchase and operate zero-emission cars (mostly electric). The greater the number and length of bus lanes, the more time they can save, and therefore the greater the attractiveness of this solution. This measure reduces exhaust emissions and noise. However, it does not reduce the occupancy of roads and parking lots (an electric car and a combustion engine take up about the same amount of space). Unfortunately, in Gdansk, the length of bus lanes is small, amounting to about 4.7 km. Instead of increasing their length, we have a regression - in the last year the length of bus lanes was reduced by 0.4 km. Despite this, in Gdansk, some delivery vans are electric. The leader in the length of bus lanes is the capital - Warsaw, which already has more than 85 km of them.

The very limited number of places available for unloading poses a major challenge for courier companies. Not least of these challenges are the limited time windows for deliveries. This causes such problems as delivery trucks blocking sidewalks and roadways, making deliveries with delays. Hence the idea of setting up micro transshipment centres. The vans of courier companies are to come here and reload parcels onto greener and zero-emission transport (e.g. bicycle carts, small electric vehicles). The leader in this issue is Wroclaw, where the country's first reloading microcenter has been created. In Gdansk, a similar solution has not yet been introduced.

In order to reduce the inconvenience of freight transport, Polish cities are also introducing tonnage restrictions. The leader is Warsaw, where trucks with a permissible gross vehicle weight (hereafter: GVW) of more than 16 tons are banned from 7:00-10:00 a.m. and 4:00-8:00 p.m. Inside this zone are smaller zones limiting entry to 10t and 5t GVW. These restrictions are in effect 24 hours a day. In certain cases, it is possible to obtain an identification for vehicles with a DMC of more than 16t. However, its validity is limited to 6 months, and the time for its issuance is 30 days. The introduction of restrictions based on DMC (rather than actual weight) is a very deliberate measure. DMC restrictions are designed to limit (eliminate) a particular type of vehicle (truck). Information on GVW is available on the vehicle registration certificate - it is easily and indisputably verifiable by the police.

[Restriction based on actual weight would be much more difficult to enforce - it would require weighing of vehicles with approved scales in places adapted for this purpose. In the city, the possibility of organizing such places is limited, and the volume of traffic means that a negligible number of vehicles could be checked. The system would be leaky and thus bogus]. In Gdansk, the tonnage restrictions are quite liberal - designated in the downtown area, for vehicles with a GVW of 27t and over, applies 24 hours a day.

Another trend in urban logistics in Polish cities is automation. The goal is to significantly reduce costs and eliminate errors due to the human factor. Automated systems are expected to optimize supply chain management. Autonomous delivery vehicles are already being used in warehouses. Legal and, for the time being, technological limitations do not allow the use of autonomous vehicles on public roads. Companies are beginning to see the need to reduce their carbon footprint. Therefore, they are betting on sustainability as part of building trust with customers. The use of renewable energy sources, energy storage, investment in electric vehicles, optimization of processes for ecology (e.g. route optimization) are becoming more common. These are business

decisions of private entrepreneurs - cities still have limited influence, although they can try to introduce incentive systems for selected activities.

Sustainable urban logistics is an important aspect of sustainable development and gas emission reduction. Polish cities use various technological, regulatory, infrastructural and organizational tools to reduce the negative impact of supply on urban areas (Matusiewicz 2024). The table illustrates the level of involvement of the Tri-City cities of Gdansk, Gdynia and Sopot in shaping sustainable urban logistics against the background of selected Polish cities.

Table 3Urban logistics tools used by Polish cities Source: Matusiewicz 2024: 236

City	Transport policy defined in the urban strategy	SUMP	SULP	Limited tonnage	Limited time	Emission Restrictions /Restricted Zones	Loading /unloading bays	Parcel locker	Cargo Bikes	Certification	Projects	Sum
GDAŃSK	✓	✓	–	✓	–	✓	–	300	–	✓	–	5
SOPOT	–	–	–	✓	–	–	–	9	–	–	–	2
GDYNIA	✓	✓	–	✓	✓	✓	✓	200	✓	✓	1*	9
Wrocław	✓	–	–	✓	–	–	✓	600	–	–	2**	6
Kielce	–	–	–	✓	✓	–	–	150	–	do 2023 r.	–	4
Poznań	✓	✓	✓	✓	–	✓	✓	1200	✓	–	3***	10
Warszawa	–	–	–	✓	–	✓	–	1400	–	–	1****	3
Rzeszów	✓	–	–	✓	–	–	–	123	–	–	–	3
Bydgoszcz	–	–	–	✓	–	✓	✓	230	✓	–	–	5
Lublin	–	✓	–	✓	–	–	✓	400	–	–	–	4
Kraków	–	–	–	✓	✓	✓	–	1760	–	–	–	4
Szczecin	–	–	–	✓	–	✓	✓	715	–	–	1*****	5
Olsztyn	–	–	–	✓	–	–	–	283	–	–	–	2
Katowice	–	–	–	✓	–	–	–	1300	–	–	–	2
Łódź	–	–	–	✓	✓	–	–	520	✓	–	–	2
Toruń	–	–	–	✓	–	–	–	152	✓	–	–	2
Zielona Góra	–	–	–	✓	✓	–	–	91	–	–	–	3

Uwagi: * Freight TAILS; ** Zrównoważona logistyka miejska ostatniej mili (NCN); logistyka w strategiach rozwoju miast (NCN); *** ENCLOSE, SULPiTER, IoT EIT Urban Mobility, GRETA; **** RESOLVE; ***** C-LIEGE ; SUMP – Plan Zrównoważonej Mobilności Miejskiej (ang. Sustainable Urban Mobility Plan); SULP – Zrównoważone Plany Logistyki Miejskiej (ang. Sustainable Urban Logistics Plan).

In the city of Gdansk itself, many modern solutions widespread in major Polish cities have already been implemented. Since 2021 DHL and DPD has been delivering parcels in Gdansk using cargo bicycles (Figure 5). The sight of a courier delivering parcels on a bicycle is no longer unusual on the streets of Gdansk. It is facilitated by an extensive cycling infrastructure - Gdansk for years has been in the lead of cities with the longest network of cycling routes and continuously extends the system of facilities for cyclists. One of such element will be velostrades - called in Gdansk ecostrades - which are cycling routes of higher technical standards for fast everyday journeys. One of the main axes of the network of velostrades in Gdansk will be the one designed along the railway tracks, parallel to Grunwaldzka Avenue, crossing in the north-south axis of the analysed area of Nowa Oliwa (Figure 6).

Figure 5 Delivery bike of the DPD courier company in front of the Marshal's Office of the Pomeranian Voivodeship in Gdansk. Photo: Wojciech Lemański

Figure 6 Former land reserve for the Red Road project - now the future site of a velostrade along Gdansk's main transport axis. Source: Trojmiasto.pl

In Gdansk, there is a network of shared parcel lockers, Orlen Paczka. Since the COVID-19 pandemic, the e-commerce market in Poland, and consequently the parcel vending industry, has become highly competitive, making it difficult for courier companies to acquire attractive locations for their infrastructure. These are mostly occupied by the national leader in the industry, InPost. The other side of the same coin is the phenomenon of 'parcel lockers walls behind every window[1]', which represents the placement of numerous parcel lockers from different companies in the most convenient locations, which is neither visually nor functionally beneficial to the urban space (Figure 7). Shared parcel lockers, which can be used by multiple delivery companies, are a solution that benefits both the quality of the urban space and the delivery process. To meet consumer expectations and changing market needs, Orlen has made it possible for other logistics companies to also use its parcel machines. The first partner to use Orlen Paczka machines is General Logistics Systems Poland (GLS). Such a shared parcel machine is also located in Nowa Oliwa, in the central part of the area by the Alchemia office complex and Grunwaldzka Avenue.

Figure 7 The problem of unregulated location of parcel machines in Gdansk, often placed in long walls along sidewalks, is less an aesthetic problem than a logistical one - deliveries without bays block traffic. Photo: Anna Gralewska

In Gdansk, there are also several interesting solutions related to the shaping of road infrastructure, especially connected with the realisation of large investments that generate car traffic, including traffic related to the delivery of goods. One example is the construction of a large-scale shopping facility in the main city district. Deliveries take place there via a road tunnel built under the shopping centre, which is also accessible by car (Nowe Podwale Grodzkie Street). In this way, the transport of goods to the shopping centre is less of a burden on the critical road infrastructure in the city centre. In addition, the new road connection, which is also accessible to private drivers, relieves congestion on the main arteries of the city centre during rush hour (Figure 8). Lessons learnt from the implementation of this solution can be applied to new transport solutions in the socially anticipated redevelopment along Grunwaldzka Avenue in Nowa Oliwa.

[1] https://trojmiasto.wyborcza.pl/trojmiasto/7,35612,26953489,paczkomaty-zalaly-gdansk-radny-apeluje-by-je-okielznac.html

Figure 8 Road tunnel built in 2018 for the delivery of goods to a shopping centre in the historic center of Gdansk, also accessible to citizens. Photo: Anna Gralewska

In summary, the City of Gdansk is the beneficiary of many innovative solutions in the field of cargo delivery which are being implemented throughout Poland. Furthermore, the local government has the ambition to gradually implement modern solutions aimed at reducing transport emissions, including cargo transport. The actions of the local UT-LAB- FLUT are one of the elements of a system of measures consisting of a number of soft measures (e.g. education and shaping pro-ecological attitudes among residents, traffic forecasting and modelling, administrative restrictions) and hard measures (e.g. development of cycling and pedestrian infrastructure, construction of a network of roads of various classes using the urban street standard).

3.2. In-depth analysis of conditions for transforming the Nowa Oliwa area

3.2.1. ANALYSIS OF LOCAL POLICY DOCUMENTS AND REVIEW OF SCIENTIFIC LITERATURE ON CARGO TRANSPORT CONDITIONS IN GDANSK

One of the first steps taken before the official launch of the project was a comprehensive study of the conditions that would affect the realisation of the project's objectives. This was based on internal analyses carried out by the Office of the Architect of the City of Gdansk in cooperation with the Gdansk Development Agency and summarised in the reports of the Grunwaldzka Avenue Study (Kucharczak Zgórska 2022, Przeworska et al. 2022, Kluz 2022). It also drew on the results of the recent Gdansk Traffic Study, carried out by. ... commissioned by the Gdansk Development Agency.

The Grunwaldzka Avenue Study is a strategic document initiated as a result of the Gdansk Mayor's Order No. 713/22 dated April 15, 2022. The study's objectives included defining the architectural and urban vision for the area and developing proposals for future urban design. The Grunwaldzka Avenue Corridor is named for the section of the city encompassing the city's main transportation axis, part of the Central Service Corridor of Gdansk (CPU) and the Metropolitan Service Corridor Services (MPU) of the Gdansk-Gdynia-Sopot Metropolitan Area (OMGGS) (Figure 9).

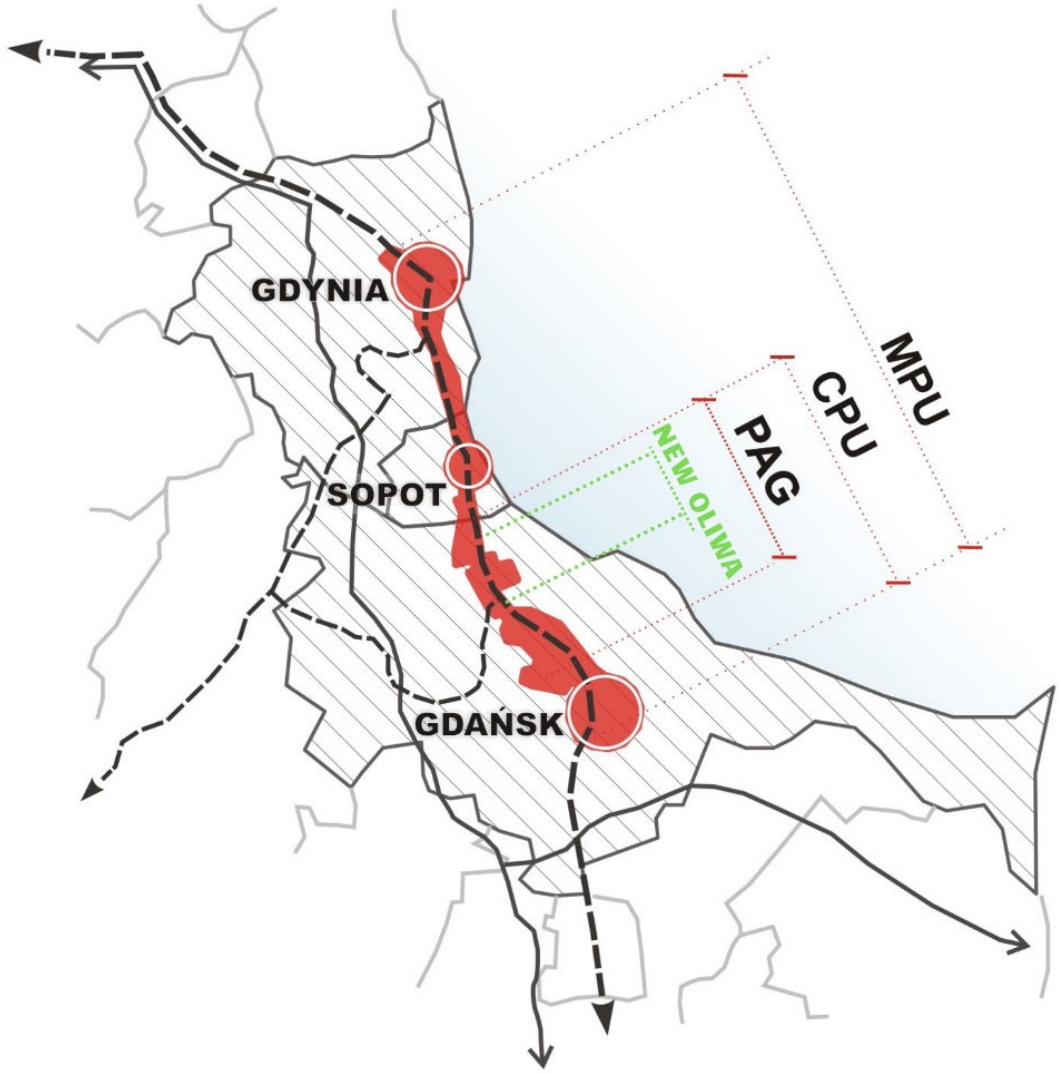


Figure 9 Spatial reference of the study area with the subject of the Grunwaldzka Avenue Study (PAG). Abbreviations used: CPU: central service corridor MPU: metropolitan service corridor of the Tri-city. Source: own compilation based on Kucharczak, Zgórska 2022, 8

Dynamic economic processes, modern concepts of urban design, transit-oriented development, compact city, 15-minute city, as well as the experience of the pandemic have forced a re-examination of the vision for the development of Gdansk, especially its core, the Grunwaldzka Avenue. A number of individual applications and initiatives by private investors, as well as the potential of previously extensively used areas, prompted a broader discussion of the vision not only for the development, but also for the functional, social, cultural and transportation aspects of the area. The result of the study was a series of expert analyses, mainly focused on the Nowa Oliwa area. The study itself repeatedly leans into the features of New Oliva's transportation system, pointing out the development directions planned so far in Gdansk's transportation policies.

The study identifies several important transportation reserves located in the New Oliva area. These include the Red Road corridor projected on the eastern side of the railroad embankment and the planned so-called New Abrahama Street, connecting the upper and lower terraces of Gdansk. The expansion of the public transport network will complement the overall transportation system, with a priority on tram services. This includes new tram lines along the planned Nowa Abrahama Street and potentially along Bażyńskiego Street, Kołobrzeska

Street, and/or Grunwaldzka Avenue. The study also envisions the continued expansion of the cycling infrastructure network. Given its location, the most critical cycling infrastructure in Nowa Oliwa includes the main cycling route along Grunwaldzka Avenue, complemented by a primary route along the planned Nowa Abrahama Street and velostrade in Red Road, further enhanced by cross-connections at both the local and collector levels. According to the study, the Nowa Oliwa area is also characterized by excellent access to public transportation. Pedestrian accessibility analyses indicate that access to rail transport, trams, and buses is at a very high level (Figure 10). Further improvement in the accessibility and attractiveness of public transport will be achieved by creating new cross-connections over the railway tracks and enhancing access to transit stops, including the development of hubs that integrate various forms of mobility.

The Grunwaldzka Avenue Study identifies several main challenges and development directions relevant to Nowa Oliwa:

1. Preserving land reserves to secure future transportation connections in line with sustainable mobility principles. Various options are being analysed, including an velostrade, a new street network, and a tram line.
2. Reducing individual and transit traffic along Grunwaldzka Avenue.
3. Coordinating individual investor proposals for the development of road infrastructure segments.
4. Continuing the expansion of pedestrian and cycling networks.
5. Enhancing the integration of PKM and SKM railway lines to improve the efficiency and effectiveness of the metropolitan transport system.
6. Establishing a regional (integrated) station in Gdansk Przymorze for PKM and PKP lines to optimize passenger transport usage.
7. Gradually lowering parking space ratios to reduce car dependency in the city and enhance the efficiency of public transportation.

This analysis was complemented by a review of publications, e.g. in the field of geography or economics, on scientific research conducted over the years on the specifics of freight transport in Gdansk and its sub-region (e.g. Chaberek 2011, 2021; Matusiewicz 2024).

The issue of parcel lockers in Gdansk is not only discussed by the public. In 2021, Dr. Grazyna Chaberek from the University of Gdansk conducted a survey (sent to 600 Gdansk residents) to study behaviours related to using parcel lockers and pickup points for online shopping. The research showed that consumers choose parcel pickup methods based on several factors, including respectively: 1. Availability and convenience, 2. Travel time (23% of respondents want to travel a maximum of 5 minutes to the pickup point, and more than half (56%) are willing to travel up to 10 minutes). 3. Combination of trips: Many respondents combine parcel pickups with other trips, meaning they do not travel specifically to pick up a parcel but rather collect it on the way to work, shopping, or other activities.

This suggests that respondents in Gdansk, from the customer's perspective, primarily expect good accessibility. The location of pickup points (e.g., parcel lockers) should be planned with overall transportation accessibility in mind. In areas with high pedestrian and bicycle accessibility, residents are more likely to reduce car usage, which supports the sustainable development of cities (Chaberek 2021, 6).As the data collected by the geographer shows, this will not be too difficult in the urban tissue of Gdansk, considering that the majority of the surveyed parcel lockers are already within walking distance from residential areas (Figure 10). The key remains to link them with convenient infrastructure for both delivery drivers and recipients, while maintaining spatial order.

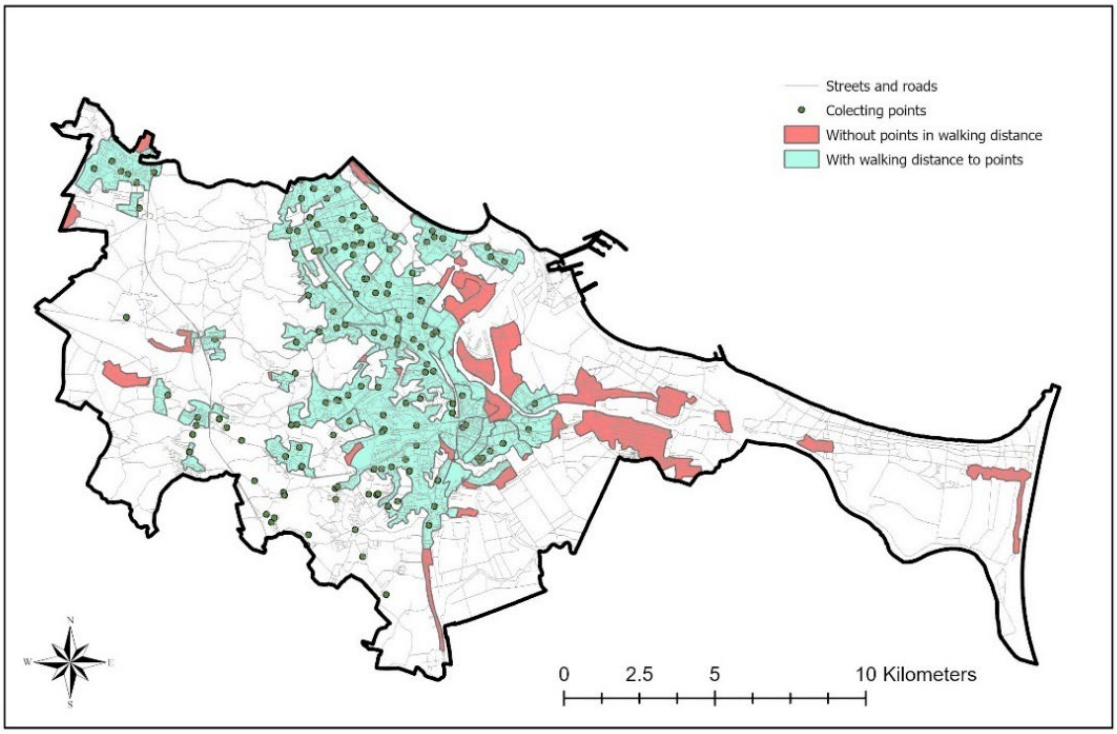


Figure 10 The accessibility of parcel collecting points in Gdansk. (Chaberek 2021, 9)

3.2.2. REPLICATION AREA NOWA OLIWA SOCIO-ECONOMIC STUDY

The next step was to commission the Socio-economic study of Nowa Oliwa (Szmytkowska 2024). Magdalena Szmytkowska, PHD, an expert in socio-economic geography, conducted a socio-economic analysis of Nowa Oliwa based on statistical and spatial data provided by the Gdansk Development Agency and available statistical information in four groups: population, buildings, economy and labour market.

The study shows that the study area is inhabited by 8056 people, which is 1.7% of the population of Gdansk. However, the author emphasises that the question of the actual size of the area's population is complicated by the fact that it is significantly underestimated, partly because a large proportion of young people do not register their place of residence. This is a nationwide problem, which translates into the issue of unreliable statistical data as a basis for analysis and forecasting, including traffic analysis. In the context of the area, this can be a key issue given the proximity of universities (particularly the University of Gdansk) and businesses located in two large business centres in Nowa Oliwa: Olivia Business Centre and Alchemia. The residential zone is concentrated in the northern and eastern parts of the area (Figure 11).

Figure 11 Population distribution in the Nowa Oliwa area. Source: Szmytkowska 2024, 4

The problem of non-registration of residence by young people, including temporary residents, is also reflected in the data on the age structure of the population. According to the registration data on which the analysis is based, the age structure of the residents of Nowa Oliwa - compared to the whole of the city of Gdansk - is marked by more advanced ageing processes, which is mainly manifested by a high share of people in the post-working age (32%) and a low share of children and young people (15%). The feminisation coefficient is 121. The outflow of residents (112 people) was almost twice as high as the inflow of new residents (69 people), indicating a negative migration balance for the area.

The study pays considerable attention to the functional structure of the existing development in the area. Both the distribution and the degree of concentration of buildings vary considerably within the area. The highest concentration of buildings is in the northern part of the area with historic residential buildings and the northeastern area of Kołobrzeska Street. In the case of the first area, the buildings are characterised by significant compactness and heights of up to 4 storeys. In the case of the second area, two sub-areas of development can be distinguished depending on the height and compactness of the buildings: along Grunwaldzka Avenue (mainly low-rise buildings up to 4 storeys supplemented by two rows of 5 to 12-storey buildings along Pucka and Malborska Streets) and in the eastern part of the area where high-rise buildings dominate. On the other hand, the lowest concentration of buildings can be found in the western and southern parts of the study area, where service buildings dominate (Figure 12).

Figure 12 Nowa Oliwa business distribution and concentration. Source: Szmytkowska 2024, 8

This is because there are clearly defined functional clusters in the area:

- *residential* - the northern and north-eastern part of the area;
- *office* - office complexes Olivia Bussiness Centre, Alchemia (along Grunwaldzka Avenue) and Arkońska Office Park (in the north-eastern part of the area);
- *industrial* - on the southern and northeastern edges of the area and along the western part of Grunwaldzka Avenue;
- *educational and scientific* - the most extensive area, connected with the location of the University of Gdansk campus and the Oliwa Hall area, as well as educational facilities, located within the residential areas of the Oliwa and Przymorze Małe districts
- and smaller *retail and service clusters* - dispersed throughout the area, which is typical of the retail function, with the exception of large-format retail in the eastern and southern ends of the area and along Grunwaldzka Avenue itself.

This clustered structure of development has a significant impact on traffic flows and the transport of goods to certain subdistricts of the Nowa Oliwa area.

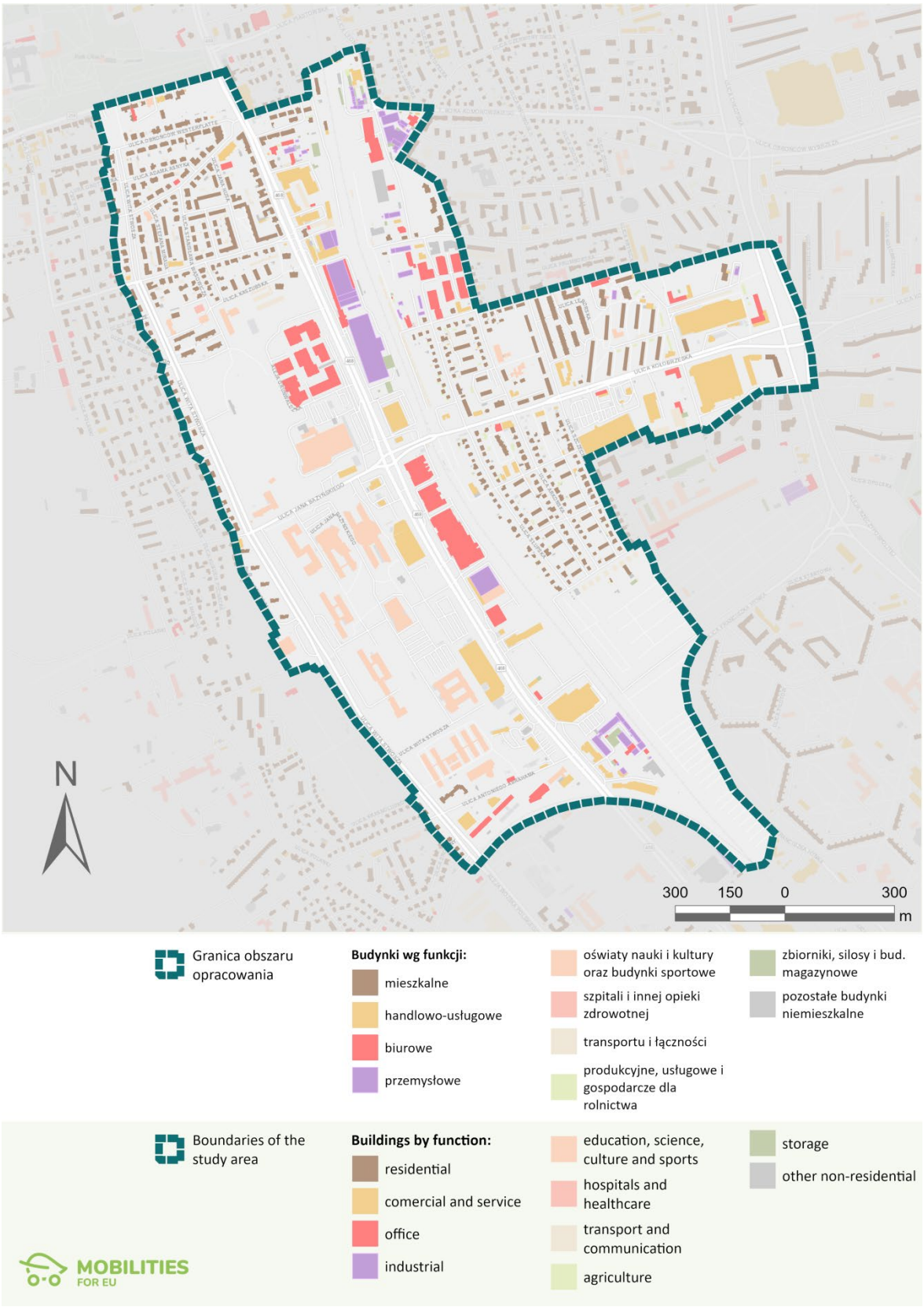


Figure 13 Functional structure of buildings in Nowa Oliwa. Source: Own study based on the database of the Municipal Office in Gdansk

The area of Nowa Oliwa lies in a zone of high concentration of services and businesses. In Nowa Oliwa alone 3.3% of business entities registered in Gdansk are located. Their distribution and places of concentration are mainly in the central part of Nowa Oliwa, on both sides of Grunwaldzka Avenue (Figure 13). The structure of business entities is dominated (2/3 of registered companies) by those less than 15 years old. According to the pattern observed nationwide, microenterprises dominate (95.2%). In the generic structure of economic entities, the largest share (16% of the total) is held by professional, scientific and technical activities (R&D sector), i.e. the key section included in the creative sector, which also includes information and telecommunications (IT sector), represented by 12% of the total number of economic entities. The second most active sector is trade (15%). More than 10% of entities are represented by the real estate activities section, as well as public services, which includes the education, health care and social assistance and culture, entertainment and recreation sections (a total of 12% of all entities).

The Nowa Oliwa area is undoubtedly very diverse in socio-economic terms. As the analysis has shown, demographically it is an area with an age structure that is relatively older than the average in Gdansk, with a negative migration balance, which may be due to rising property prices in the area and fairly intensive internal migration. In the development structure, there is a clear functional-spatial zoning of the area with strongly distinguishable clusters of dominant residential, office or production development. On the other hand, in terms of business structure, the area has a distinctly post-industrial character, where service functions dominate, with particular emphasis on the significant development of the so-called creative environment, which is manifested mainly in the participation of economic sectors from the R&D and IT sectors or real estate activities.

The socio-economic study of Nowa Oliwa provided a range of useful information for achieving the project objectives. The knowledge of the current socio-economic situation in a strictly local perspective allowed a better adaptation of the design concept to the local conditions. The synthesis and presentation of the conditions at the design workshop event provided the participants with a range of useful information on the current state of the area.

3.3. The conceptual stage of the Gdansk UT-LAB

As part of their participation in the project, representatives of the Gdansk Municipality had the opportunity to take part in project meetings to facilitate the development of the idea and implementation of the Gdansk UT-Lab. There were three General Assembly of the project in Madrid, Dresden and Ioannina during which the main objectives for the activities of the Gdansk unit were clarified.

First GA in Madrid (January 30 – February 01, 2024)

The MOBILITIES FOR EU kick-off meeting has two different parts with different general objectives. The two first days, 30th and 31st January, are aimed at gathering all project partners and establishing a common understanding of the project background, objectives and expected results as well as coordinating, planning and launching the first activities to be implemented in its first months.

During the Gdansk presentation on the meeting, the followed questions were discussed:

- How to deal in a systematic way with Logistics within the main transformation areas?
- What new technical solutions may be used to service the contemporary mixed-use, central areas?
- How an outline of SULP can be developed? What should be discussed/included?
- To what extend different stakeholders may be involved in the participatory proces?
- How the participatory proces may be organized in order to deal with SULP outlines for the selected area?

At the outset, the Madrid meeting Jan/Feb 2024 facilitated the identification of the main stakeholders in the implementation of design solutions and their roles and interrelationships in the success of the implementation of the objectives. Even if the original list of potential stakeholders (Figure 14) has changed, it has given clear direction in defining the target group (Figure 15).

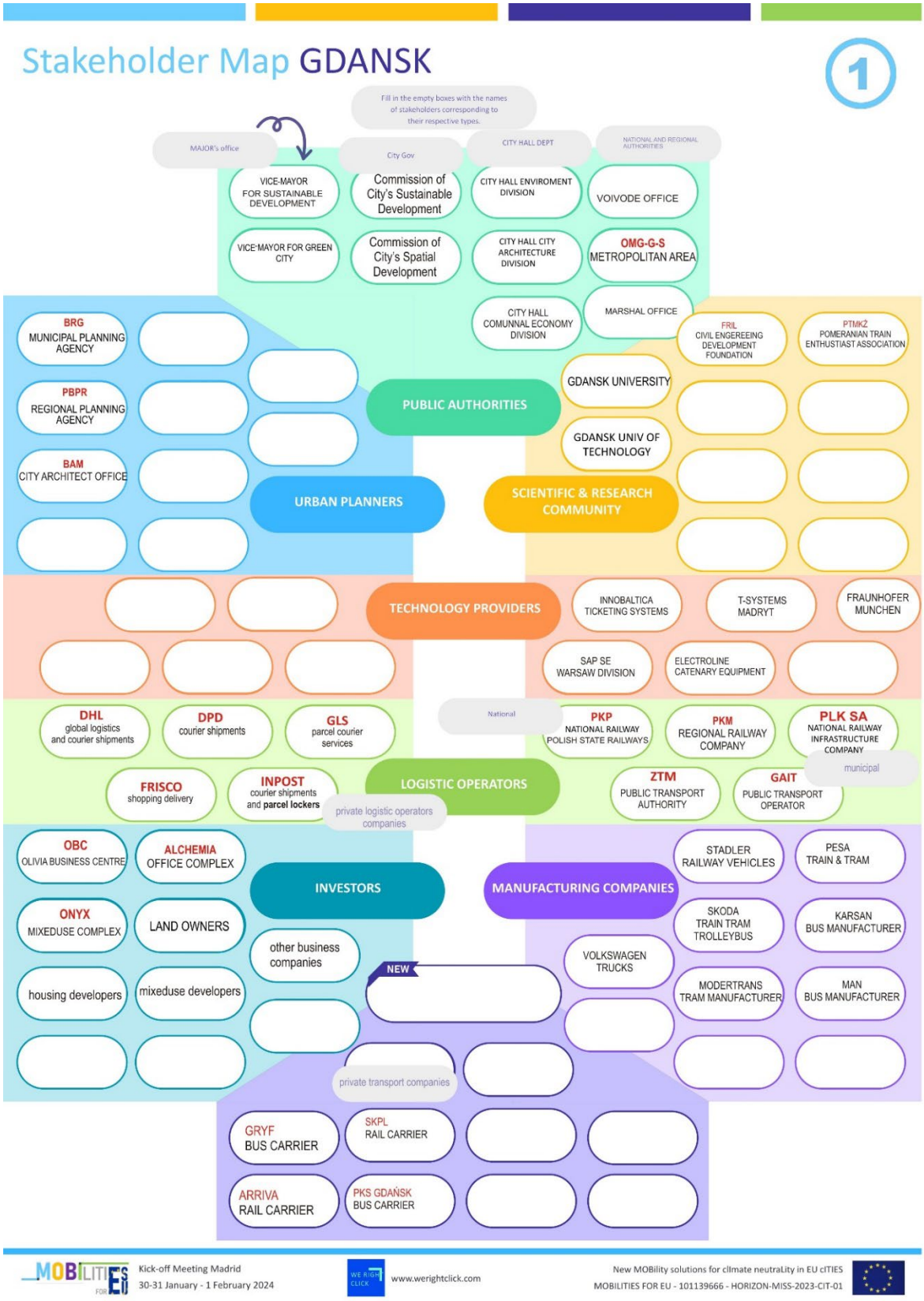


Figure 14 A prospective map of key stakeholders in the Gdansk-based Mobilities for EU project. Source: Own study

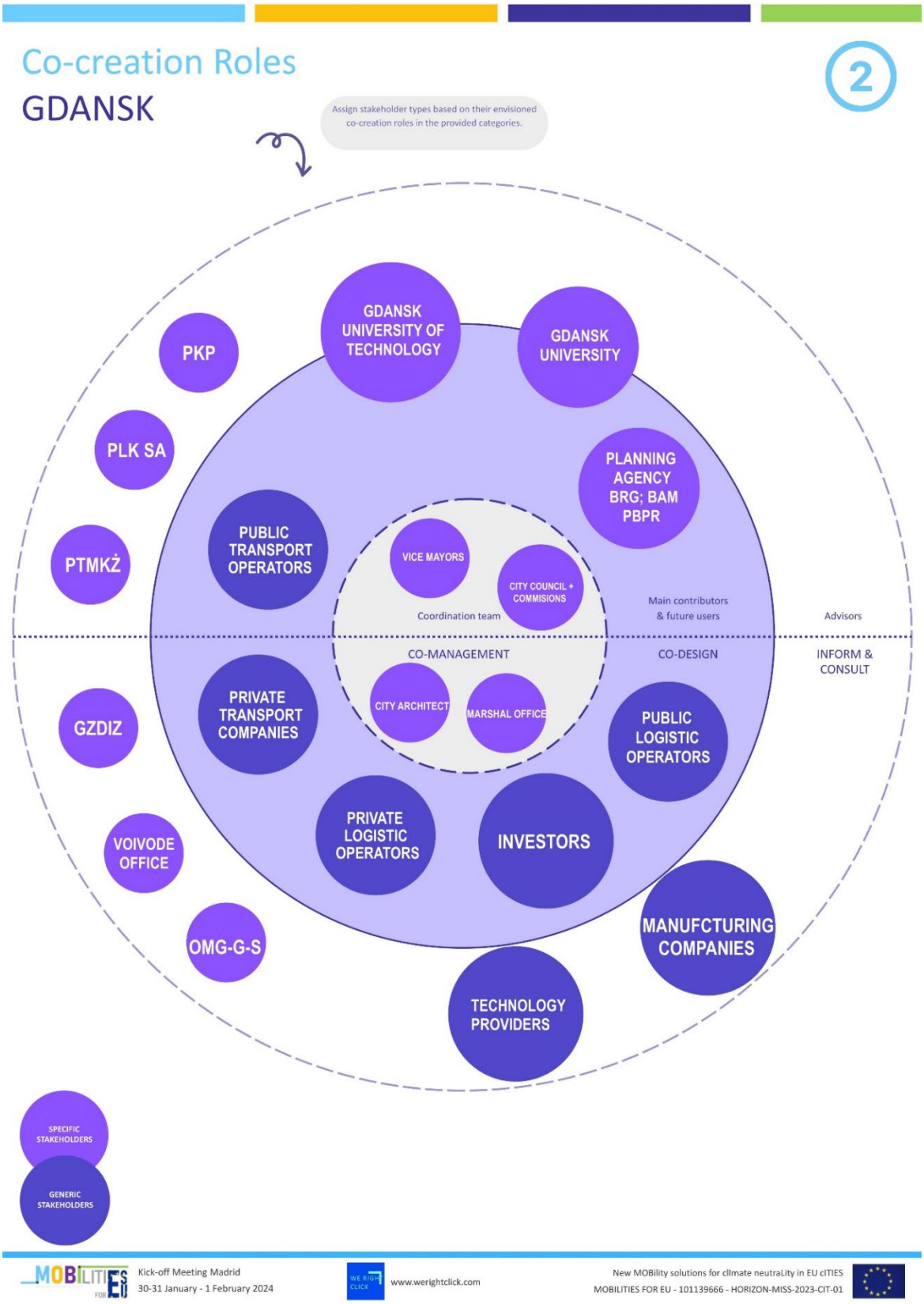


Figure 15 Projected distribution of roles of local partners in the Gdansk participation in the Mobilities for EU project. Source: Own study

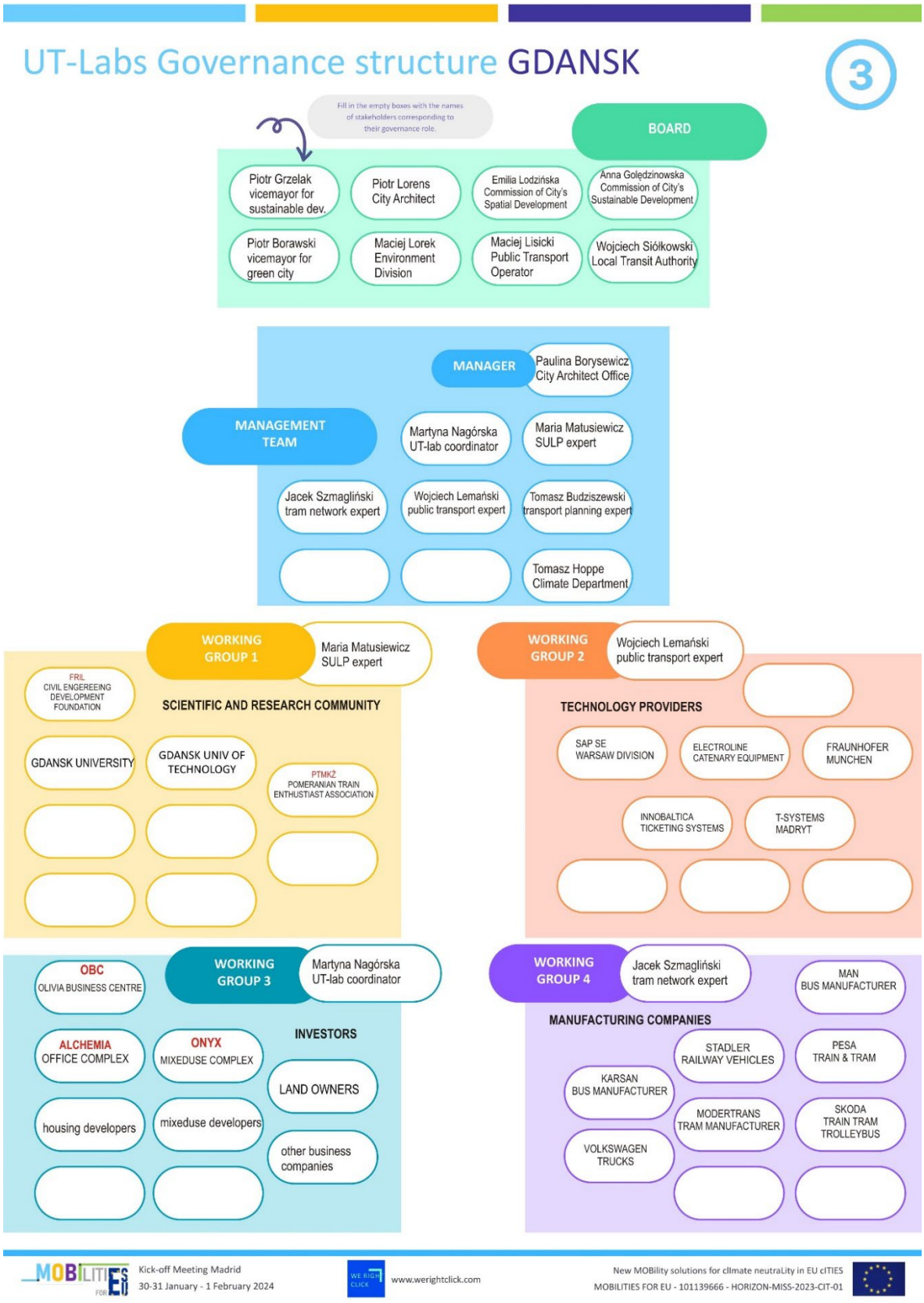


Figure 16 Expected UT-LAB Governance structure in Gdansk. Source: Own study

Second GA in Dresden (September 2024)

During the assembly in Dresden in September 2024 numerous workshops were held on the implementation of activities under the individual WPs. Particularly inspiring was a visit to the replication area - a sports complex on the banks of the Elba River.

Presentations by companies to implement innovative solutions in the leading cities of Madrid and Dresden brought a lot of information about future possible implementations in the area of replication in Gdansk.

Figure 17 The second General Assembly of Mobility for EU project in Dresden, Germany. Photo: WeRightClick

Third GA in Ioannina (21-22 November 2024))

Finally, the November meeting in Ioannina discussed the first achievements of the Gdansk team and confronted the different approaches of Replication Cities in the formation of the UT LAB and the selection of the transformation area. The presentation of the representative from Gdansk focused primarily on the methodology adopted for the selection of the replication area and the assumed participatory activities.

Figure 18 The Third General Assembly of Mobilities for EU project in Ioannina, Greece. Photo: WeRightClick

Figure 19 The workshops during GA in Ioannina. Photo: WeRightClick

Figure 20 Representatives of the Gdansk FLUM team gave a presentation at the General Assembly in Ioanina. Photo: WeRightClick

Figure 21 Agenda for the speech of the Gdansk team at the meeting in Ioannina, November 24, 2024d

Interviews with main stakeholders, citizens and experts

On January-August 2024 (M1-M9) all replication cities of the project was committed to a minimum of five interviews on sustainable mobility. The objective of the interviews was to identify special needs, priorities and expectations of citizens & stakeholders related to the new mobility and logistic trends, including electrification and automation of transport. The scale for all questions was the city level.

Gdansk accomplished this goal by interviewing experts/representatives in the field:

- pedestrianization,
- city owned public transport operator
- logistics researcher,
- business related to office complexes
- Gdansk City Council

One of the main conclusions was that the need for conceptual innovation instead of new technologies is discussed too seldom. Open minds and new models of cooperation are needed. Effective cooperation using available technological resources and rational management is the measure of civilisational progress, not the invention of new technologies and novelties. In short: conceptual innovation and the economical use of existing potential and resources.

Much attention was also given to the importance of decarbonization, in which all respondents agreed. "Gdansk was known for its good air quality, but in recent years there has been a significant regression in quality, despite the windy microclimate there is smog. 60% of Oliwa residents (the cleanest district in Gdansk) in a 2017 survey thought the air was polluted. A coastal city should not have smog. The strategic objective - improving the quality of life is implemented through the operational action - clean air for residents.

In terms of best practices for the decarbonization of transportation and the introduction of autonomous vehicles, many interesting ideas have emerged, including clean transportation zones, hydrogen buses, autonomous UBER in California and an autonomous subway in Copenhagen. However, it has been pointed out that transportation autonomization is a tool and not a goal. China's major cities are good examples of autonomization. Gdansk has successfully tested autonomous vehicles in segregated spaces - to the zoo and the cemetery.

The interviews also pointed out that te key is to maintain an efficient and extensive public transport offer, supported by zero-emission individual vehicles (bicycles, scooters) - such experiences are observed in large metropolises such as London and New York. These are cities with a long tradition of a transport network (metro) - which makes the Tricity similar to them in this respect. The SKM route, Al. Grunwaldzka/Zwycięstwa with a tram line have been part of the transport map of the inhabitants for many decades.

In conclusion, the interviews were a reliable and inspiring source of information on the perception of innovative sustainable mobility methods in the local context of the city of Gdansk. They brought not only many ideas, but also contacts used in the establishment of the Gdansk UT LAB.

Lesson Learnt

The documents and concepts developed as part of the project work will facilitate participation in other programs and applications for funding. Implementation of capacity building activities (such as administrative, financial and political capacities) in our FLUT LABs will help empower citizens (especially VRUs), local urban mobility and logistics solutions / service providers to co-create and adopt innovative and systemic management.

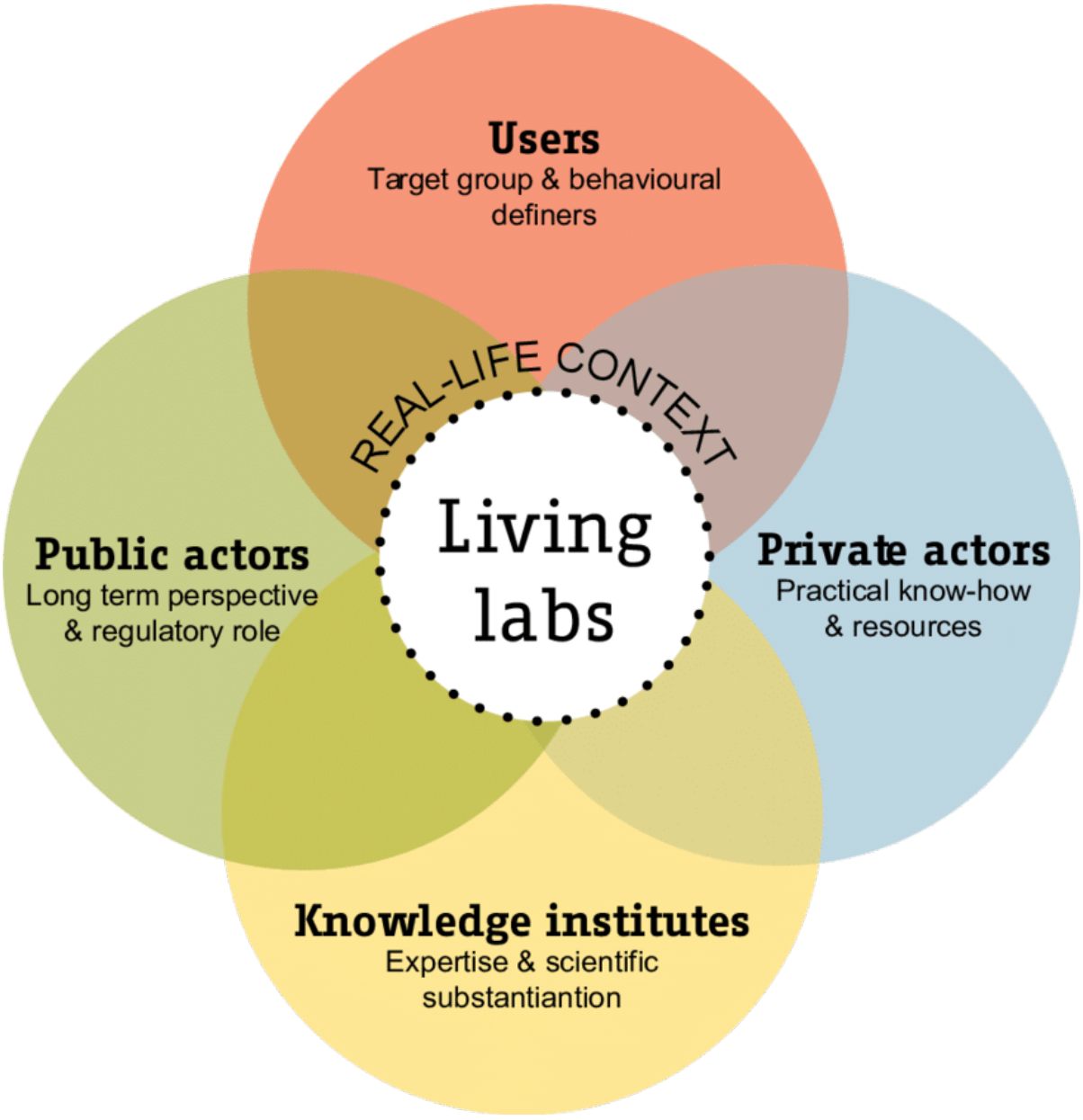


Figure 22 UT-Lab structure.

Gdansk UT LAB is a space and a spirit of co-invention and co-creation of useful and needed solutions using lessons learned through the actions of leading cities (local governance workshops, capacity building workshops / trainings, webinars, case studies, good practices of innovative governance from outside the project).

3.4. Launching the local UT-LAB in Gdansk (May 9, 2024)

The inauguration of the Mobilities for EU local project took place on 9 May 2024 in the Oliwa district, on the 32nd floor of the Olivia Star building belonging to the Olivia Business Centre, with a panoramic view of the future study area.

Following the UT-Labs' aim to combine mutual involvement of citizens and stakeholders, a wide range of participants were invited to be part of it. The first meeting featured representatives from:

- The City Council of Gdansk
- Oliwa District Council
- Marshal's Office of Pomorskie Voivodeship
- Department of Public Utilities of the Municipal Office in Gdansk
- Department of Investment Programs of the Municipal Office in Gdansk
- Department of Environmental Affairs of the Municipal Office in Gdansk
- Department of Economic Policy of the Municipal Office in Gdansk
- Accessibility Section of the Municipal Office in Gdansk
- Proxy of the Mayor of the City of Gdansk for pedestrian issues
- Office of the Architect of the City of Gdansk
- Gdansk Development Agency
- Gdansk Roads and Greenery Authority
- The company Gdansk Buses and Trams
- Olivia Centre (partner)
- Gdansk University of Technology (partner)
- Media gdansk.pl
- Experts in the field of transport
- Architectural studios, developers, investors
- NGOs

The meeting adopted the principle of a round table discussion, i.e. the organisation of a stage and audience area was abandoned in favour of working around a common table, putting all participants on an equal footing.

The UT-LAB team from Gdansk has decided to give itself the working name FLUM - Flying Urban Mobility Lab.

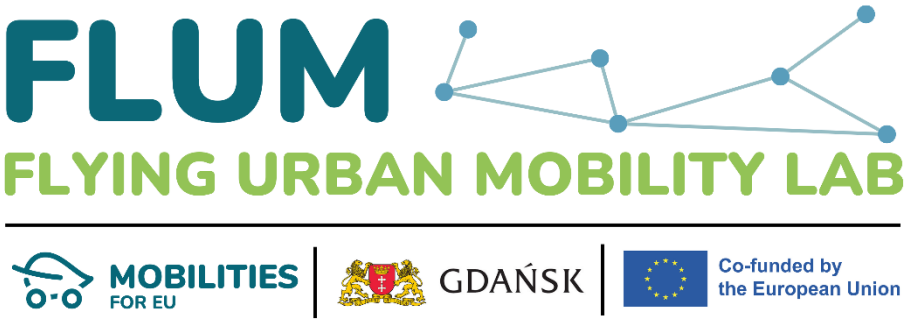


Figure 23 The logo of Gdansk UT-LAB

The main areas of consideration for the Gdansk UT-LAB is reducing greenhouse gas emissions by: introducing zero-emission vehicles (e.g. electric, hydrogen); abandoning private cars in favour of more sustainable forms of transportation; reducing the need for transportation (e.g. creating mixed-use neighbourhoods); reinventing user-centered solutions.

The coordinator of the project in Gdansk, architect Paulina Borysewicz, PhD, introduced the participants to the main assumptions and objectives of the project, the proposed design methods and the contents of the work packages. The topic of UT-Labs - Urban Transport Laboratories - attracted the most attention from the participants. The idea of establishing such an innovation centre in Gdansk to support the rapid deployment of innovative solutions was enthusiastically received. The participants' applause was mainly for the opportunity to work on design concepts that solve local, real-world problems identified by a broad, egalitarian group of stakeholders.

Figure 24. Inauguration of Gdansk UT Lab as part of the "Mobilities for EU" program at Olivia Business Centre, May 9, 2024. Photo: Wojciech Chmielewski

Figure 25 Round table discussion at the inaugural meeting of the UT-LAB in Gdansk. Photo: Wojciech Chmielewski

3.5. First UT-LAB Gdansk working meeting (June 25, 2024)

On 25 June 2024 the first working meeting of the Gdansk UT-LAB team took place. It was again held in the Olivia Business Centre office complex, in the Olivia Star building. The meeting was attended by representatives of the groups and institutes present at the launch meeting.

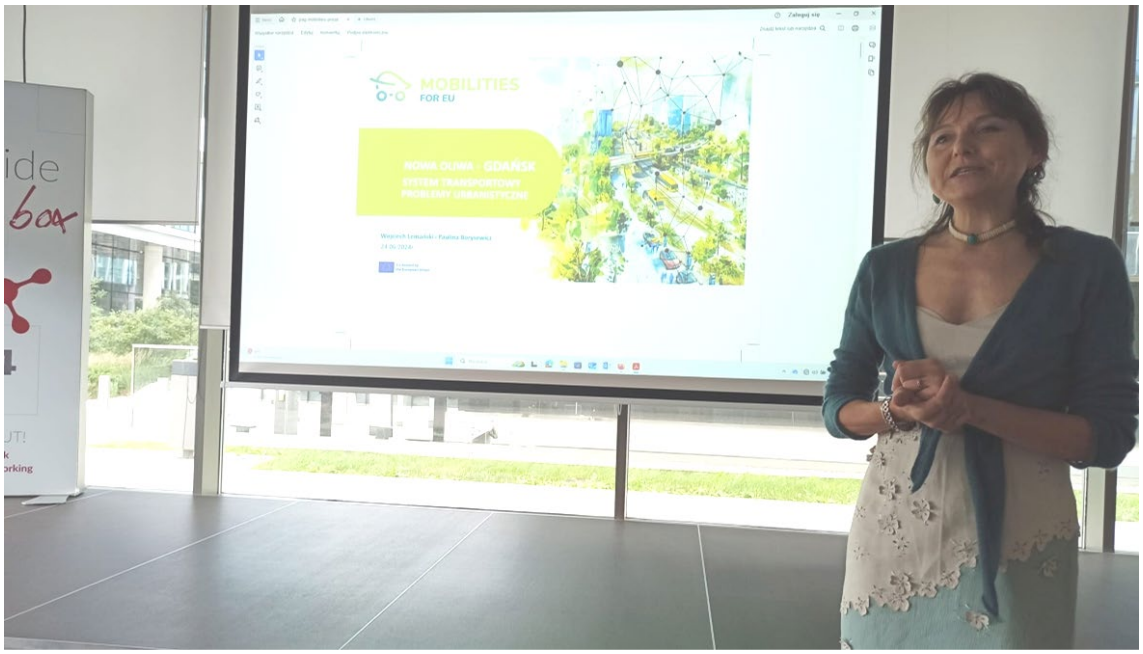


Figure 26 Presentation of the results of the transport studies at the working meeting of the FLUM, 25 June 2024 Olivia Business Centre. Photo:

The meeting included the presentation of recommendations for changes to the transport system and the organisation and operation of public transport in the area. These were the direct results of six transport analyses commissioned over the past two years. Four variants of redesigning the transport routes were also presented, including Kołobrzeska Street, Jana Bażyńskiego Street, the planned Nowa Abrahama Street and Grunwaldzka Avenue.

The discussion focused primarily on measures favouring an increase in the number of public transport passengers. According to the analyses presented, the number of daily passengers in this area will double by 2050. There are many reasons for this. The university, office buildings, investment pressure and the associated densification of the urban fabric all generate traffic flows to which the current local road fabric is not designed to handle.

The development and functioning of the replication area - Nowa Oliwa - arouses a lot of emotion mainly due to the fact that it is an important node in the main development axis of the city, a kind of “growth pole” along the crucial transportation corridor. A number of stakeholder groups were identified at the meeting, including those mentioned above - students, employees of the surrounding office complexes but also residents of the surrounding districts. It was decided that it is to them that promotion and information activities from the Mobilities for EU project should be directed first.

3.6. Participation in Mobility Week in Gdansk, Poland (September 16-22, 2024)

Gdansk Mobility Week 2024 was held from September 16-22. As part of the event, the city encouraged the use of alternative forms of transportation, such as public transportation, bicycles and walking. Gdansk organized various events and campaigns to promote sustainable mobility. In addition, Gdansk hosted the Urban Mobility Flow Summit - Expert Networking, an event aimed at urban mobility leaders and experts.

The leader of the Gdansk FLUT presented with a speech on the goals and tasks of the Gdansk UT LAB and the assumed benefits that participation in the Mobilities for EU project will bring to the city of Gdansk. The presentation was met with great interest and discussion of the transportation problems of the replication area and the city as a whole.

As part of Mobility Week 2024, a festival was organized for residents where public transportation was promoted. Zero-emission buses were presented: an electric minibus (up to 20 passengers) and a standard-sized hydrogen bus (up to 90 passengers) . Moreover, special lines were launched: tramway operated with historical vehicles and a bus line served by buses: hydrogen and historic. All stops of the special lines were branded with the Mobility Week logo and the Mobilities for EU project logo, as can be seen in the attached photos (Figure 27).

Participation in the event allowed not only to promote the project and its possible benefits for the city of Gdansk, but also to confront the idea of sustainable mobility with experts and enthusiasts from all over Poland.

Figure 27 The event was branded with the logo of the Mobilities for EU project. Photo: Wojciech Lemanski

Figure 28 The event and the Mobilities for EU stand were well attended. Photo: Wojciech Lemanski

3.7. Open design workshops “Oliwa and Przymorze: Delivering Goods the Smart Way” (December 3, 2024)

On December 3, 2024, an open workshop titled “Oliwa and Przymorze: Delivering Goods the Smart Way” took place as part of the project's ongoing efforts to address urban logistics challenges within the project framework. The main objective of the event was to focus on identifying key issues related to goods delivery in the Nowa Oliwa and surrounding neighbourhoods and exploring sustainable solutions to improve logistics efficiency and environmental impact.

The workshops were open to the public. Promotion was primarily carried out through social media, posters at the event venue, and invitations to participants in the process as well as other potentially interested stakeholders, including district councilors, experts and partners.

Planed participatory method combined interactive mapping exercises, group work, and creative problem-solving. The chosen approach aimed to actively engage participants, draw on their local knowledge, and stimulate innovative thinking. Specifically, participants first identified key challenges in logistics using sticky notes and a large district map (“Challenge Map” exercise). Then, divided into smaller groups, they worked with printed maps of the district to locate problematic areas, key delivery points, and potential solutions, such as microhubs or time restrictions for deliveries (“Delivery Mapping” and “Creative Solutions” exercises). This was followed by group presentations and voting on the most promising ideas.

This method was selected because it combines inspiration, spatial thinking, and collective creativity. It encouraged stakeholders not only to discuss problems but to co-create concrete, actionable solutions - increasing their ownership of the outcomes.

The workshop began with an introduction to the European project context and the concept of Sustainable Urban Logistics Plans (SULPs), accompanied by examples of best practices and findings in the field. Then participants engage in interactive activities.

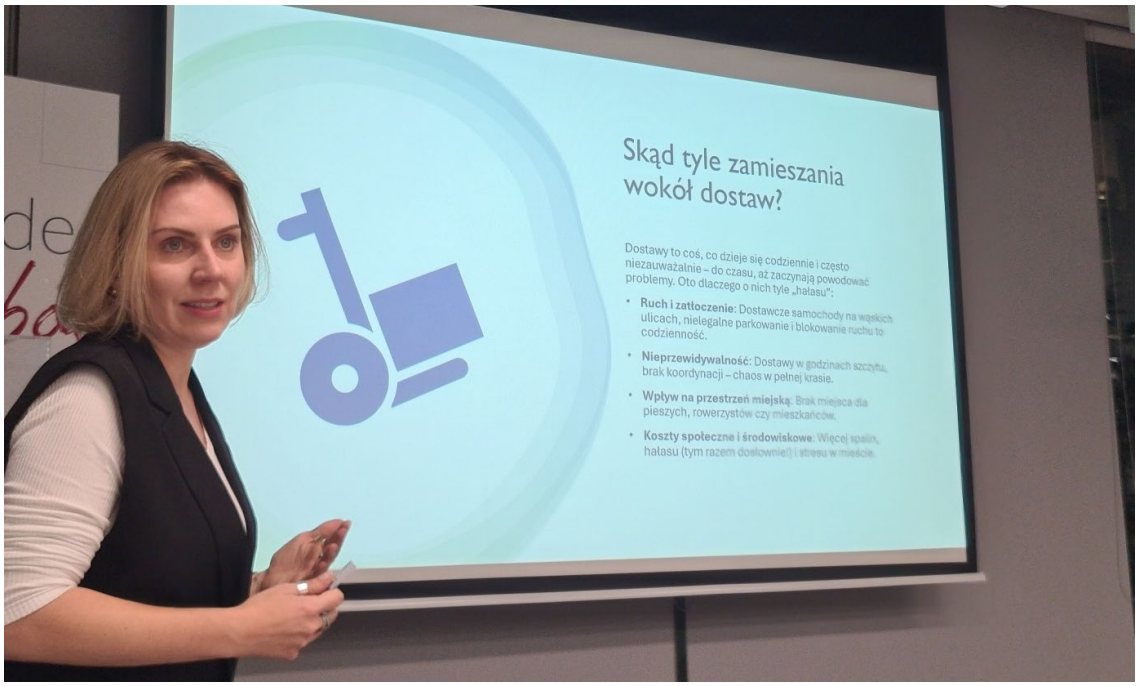


Figure 29 Presentation by Karolina Orcholska, M.Sc. Eng.at FLUT Open Design Workshop, December 3, 2024, Olivia Business Centre. Photo: Karina Rembiewska

Figure 30 Identified problems and opportunities for changes in the organization of transportation including cargo transport in Nowa Oliwa. Source: Own study

The first task involved mapping the logistics challenges in the area.

Participants looked at the area comprehensively, pointing out both local issues and a range of organizational problems that directly or indirectly impact opportunities to decarbonise transport, including freight (Figure 30).Many of the proposals and problems presented showed how goods distribution is linked to the functioning of residents and different users. The difficulties of overcoming the barrier of the railway embankment were pointed out, which hinders pedestrian, bicycle and car traffic and contributes to the fact that the majority of freight traffic is directed to the main traffic axis of Przymorze Małe - Kołobrzeska Street.

Among other problems, the lack of a tram connection to urban railway stops (mainly SKM Przymorze-Uniwersytet) and organizational problems of public transport - lack of a shared ticket, high cost of travel by public transport - were also mentioned.

Proposals for the study area also largely concerned public transportation, primarily the extension of tram lines. Much attention was also given to bicycle paths, with a reference to the local government's proposal to create a velostrade along the railroad tracks.

Despite their different backgrounds and points of view, the participants agreed to summarize the transportation problems of New Oliva as a multifaceted problem, of which goods transport is one of the most important and yet unattended aspects.

Figure 31 Presentation of the results of the first step workshop: mapping of the logistics challenges in the area. Photo: Anna Gralewska

Next, by working in groups participants proposed innovative solutions, such as micro-hubs for deliveries, last-mile optimisation strategies, and the use of modern technologies to enhance urban logistics.

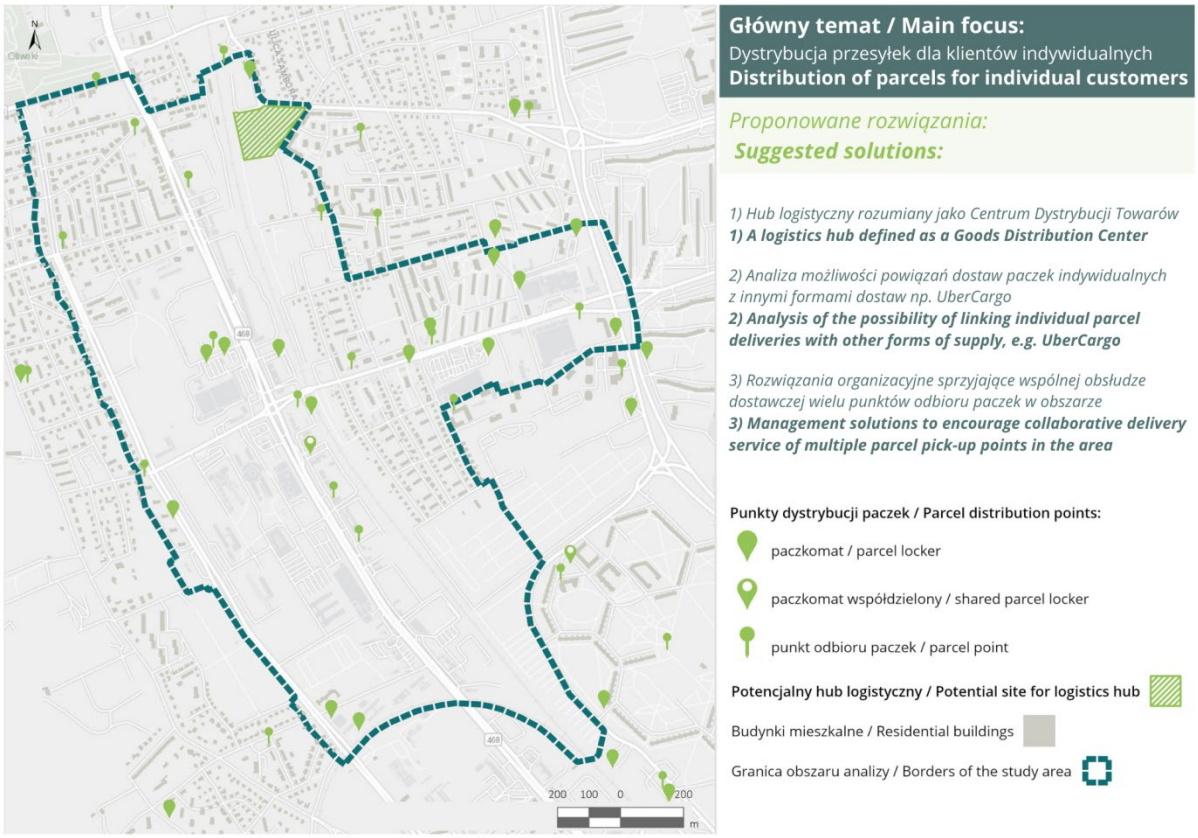


Figure 32 A graphical synthesis of the insights of group one, focusing on the distribution of parcels to individual customers. Source: Own study

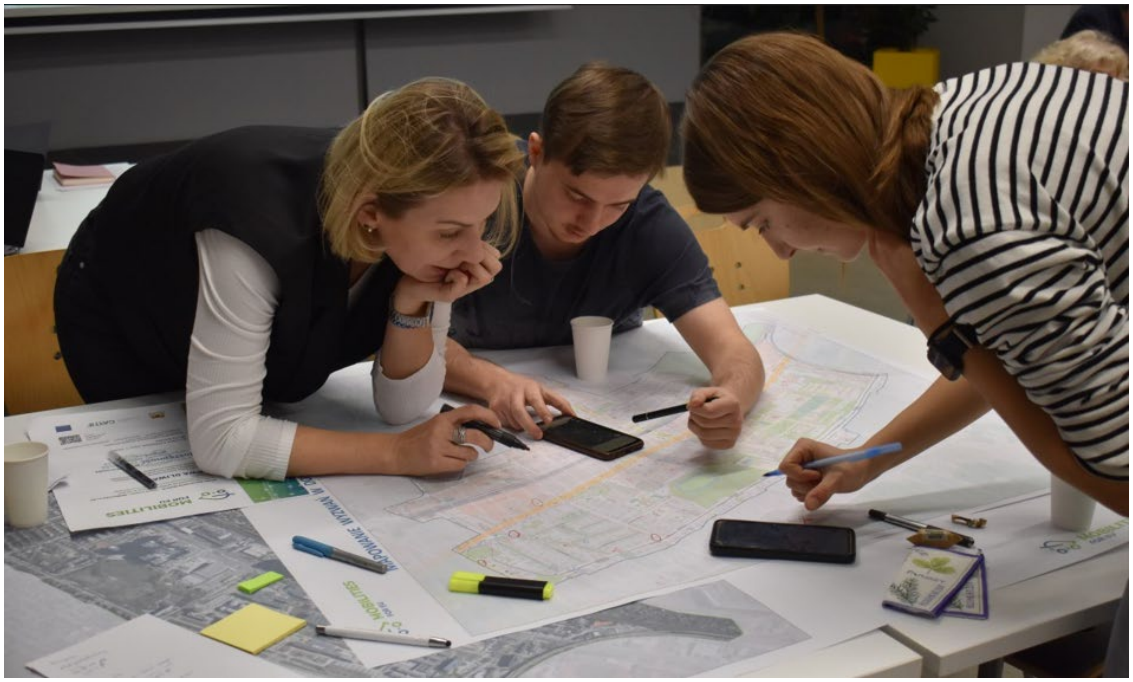


Figure 33 First group collecting data for the analysis. Photo: Anna Gralewska

Group One focused its work on the problem of individual deliveries, primarily related to consumer online shopping. The first step was to map the major parcel distribution points in the area, including a network of stores (parcel points) and parcel lockers (figure 13).

As anticipated, an accumulation of parcel lockers has been observed in residential areas, particularly along the most frequented pedestrian routes and transfer hubs. These locations coincide with areas where the movement of delivery vehicles is hindered not only by increased traffic but also by the lack of appropriate infrastructure, such as designated pull-in bays.

The method of mitigating this issue has been outlined in an in-depth analysis of the potential integration of individual parcel deliveries with other delivery models, such as Uber Cargo. As a recommended direction for change, the analysis also highlights the need to seek organizational solutions that facilitate the shared logistics service for multiple carriers and parcel pickup points operated by different companies.

One of the proposed structural solutions is the creation of a logistics hub functioning as a goods distribution center. The designated location for this hub is a post-industrial area in the northern part of the study area, offering good road connections to the main streets of the area and proximity to the Gdansk Oliwa railway station.

The second group focused their work on spatial development transformations within the study area that would positively impact the area's transport services. New developments are primarily planned along Grunwaldzka Avenue and its intersection with Kołobrzeska Street—an area currently dominated by monofunctional commercial and office buildings. The proposed development is intended to follow a mixed-use model.

One of the key changes would be the establishment of a logistics hub behind the new development, near the university and the less frequented Polanki Street. Additionally, new organizational solutions have been proposed, including at-grade pedestrian crossings, a clean transport zone in residential areas, and the enhancement of currently undeveloped public green spaces.

Figure 34A detailed examination of the development of the area by group two. Photo: Anna Gralewska

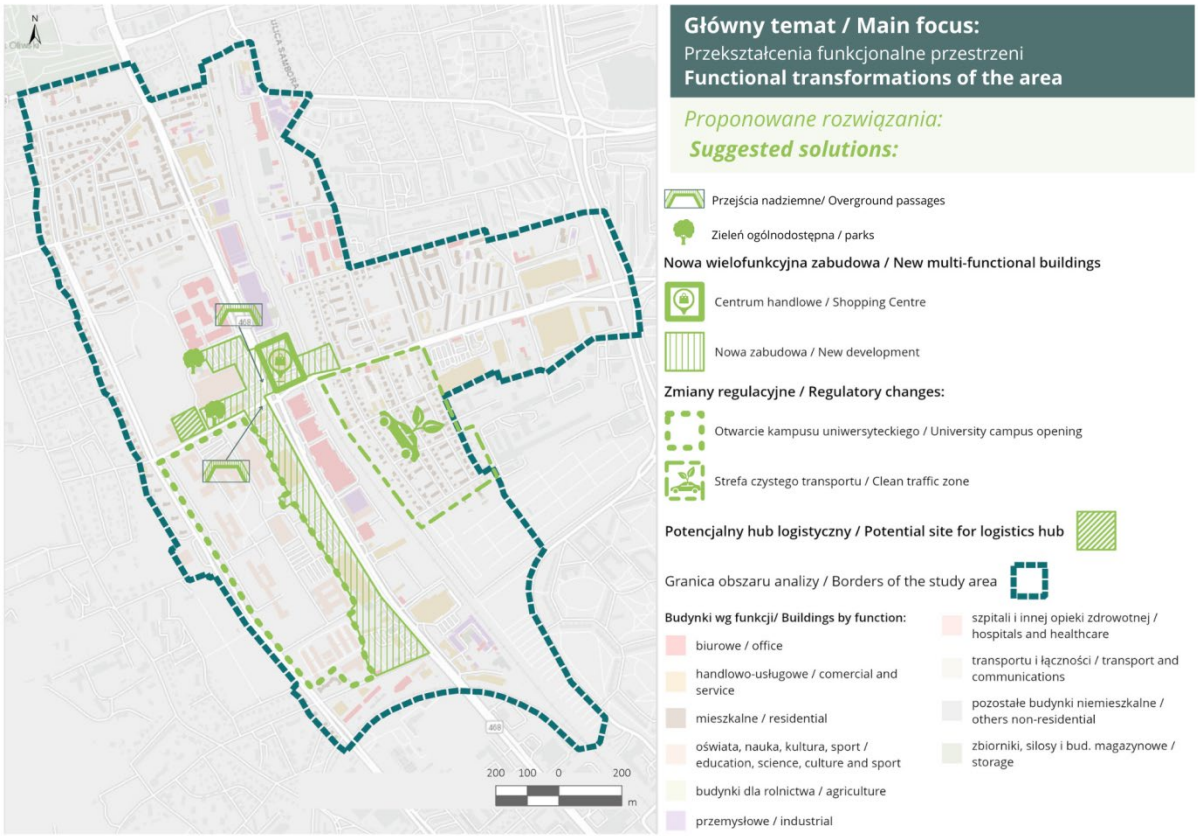


Figure 35 A graphical synthesis of the insights of group two, focusing on the development transformations. Source: Own study

The third group leveraged their expertise in transport organization to propose new and improved transportation solutions for the study area. As a starting point, they emphasized the need to gather data on the volume, frequency, and types of deliveries within the area. A key must-have element is the provision of dedicated parking spaces for delivery vehicles, strategically linked to the locations of parcel pickup points.

This group also identified a site for a new logistics hub near the bus terminal and urban rail station on Kołobrzeska Street. Complementary organizational measures include transformations within the university campus—particularly in terms of parking policies—as well as along Grunwaldzka Avenue, where new developments, sidewalk upgrades, and bicycle path improvements are planned.

In the summary, the workshops focused on key issues identified by the groups, including the concentration of parcel lockers along high-traffic pedestrian routes, monofunctional investments along Grunwaldzka Avenue, and transport organisation problems.

To address these, the study explored the possibilities of integrating individual parcel deliveries with shared logistics models, as well as organisational solutions to facilitate cooperation between multiple carriers and parcel collection points. An important structural solution proposed is the development of a logistics hub as a distribution centre. The groups identified three potential locations for further analysis (Figure 38).

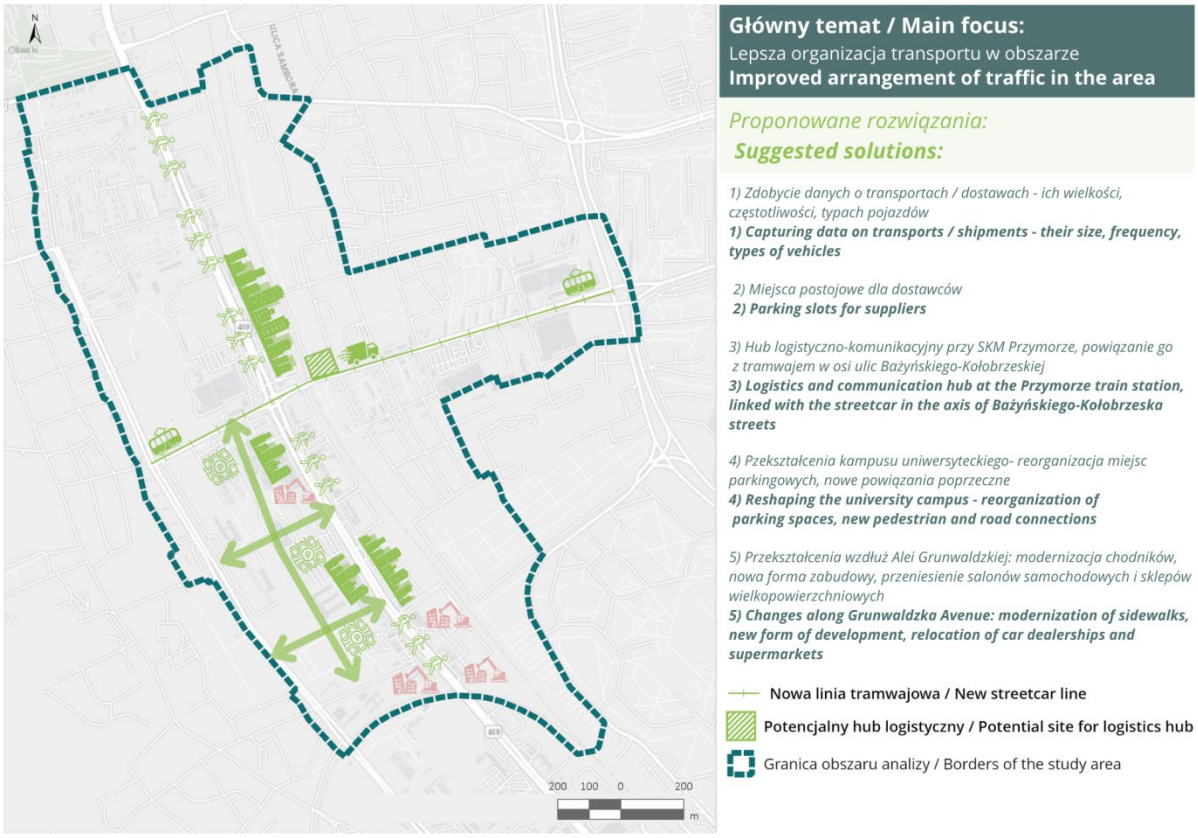


Figure 36 A graphical synthesis of the insights of group three, focusing on the arrangement of traffic in the area. Source: Own study

Figure 37 Discussion of the organizational solutions in the third group. Photo: Anna Gralewska

Figure 38 Synthesis of recommendation for Nowa Oliwa developed on the design workshops. Source: Own study

Beyond logistics infrastructure, the summary highlighted broader urban changes to improve transport efficiency. These include solutions such as new at-grade pedestrian crossings, a clean transport zone in residential areas and improvements to public green spaces. The need for designated parking for delivery vehicles near parcel pick-up points was also highlighted. In addition, mixed-use development along Grunwaldzka Avenue and Kołobrzeska

Street was proposed to diversify the current monofunctional commercial and office areas. Urban improvements in this corridor would include upgraded pavements and improved cycle lanes. Also, changes on the university campus were recommended to support a more sustainable transport network.

As a result of the work of the working team, the need for an integrated approach to urban logistics, balancing infrastructure development with organisational improvements, was highlighted. The proposed logistics hubs, combined with better transport policies and urban planning measures, would contribute to more efficient delivery systems, reduced congestion and a more sustainable urban environment. Collaborative logistics models and mixed-use development will be essential to ensure that future transformations meet the needs of the future.

Undoubtedly, fostering sustainable mobility through changes in transport behaviour requires the ongoing development of the cycling route system.

The outcomes of the workshop will contribute to the development of actionable strategies tailored to the specific needs of Nowa Oliwa, supporting the broader goal of sustainable urban development within the project.

3.8. Inauguration of design workshop competition for students (June 2, 2025)

As part of the dissemination activities, a series of meetings was undertaken with students of Gdansk universities in which they will compete to work on a new vision for Nowa Oliva.

The series of sessions is aimed at involving students in the analysis and design of innovative solutions for mobility in the replication area. Students will work on real problems of the district, conducting field research and developing proposals for change. The workshop will conclude with a competition for the best concept.

The inaugural meeting was held on June 2, 2025 at the Olivia Centre. The main objectives of the competition were discussed. One of them is to divide the replication area into three sub-areas, which will be the focus of different interdisciplinary student teams (Figure 39).

Unfortunately, the low turnout at the meeting indicated the need for wider promotion of the competition in student communities, as well as more precise timing of the meetings (June is the date of the final exams of the academic year in Poland, which also played a role in meeting attendance). It was decided to continue the venture in the next academic year, which is the fall of 2025.

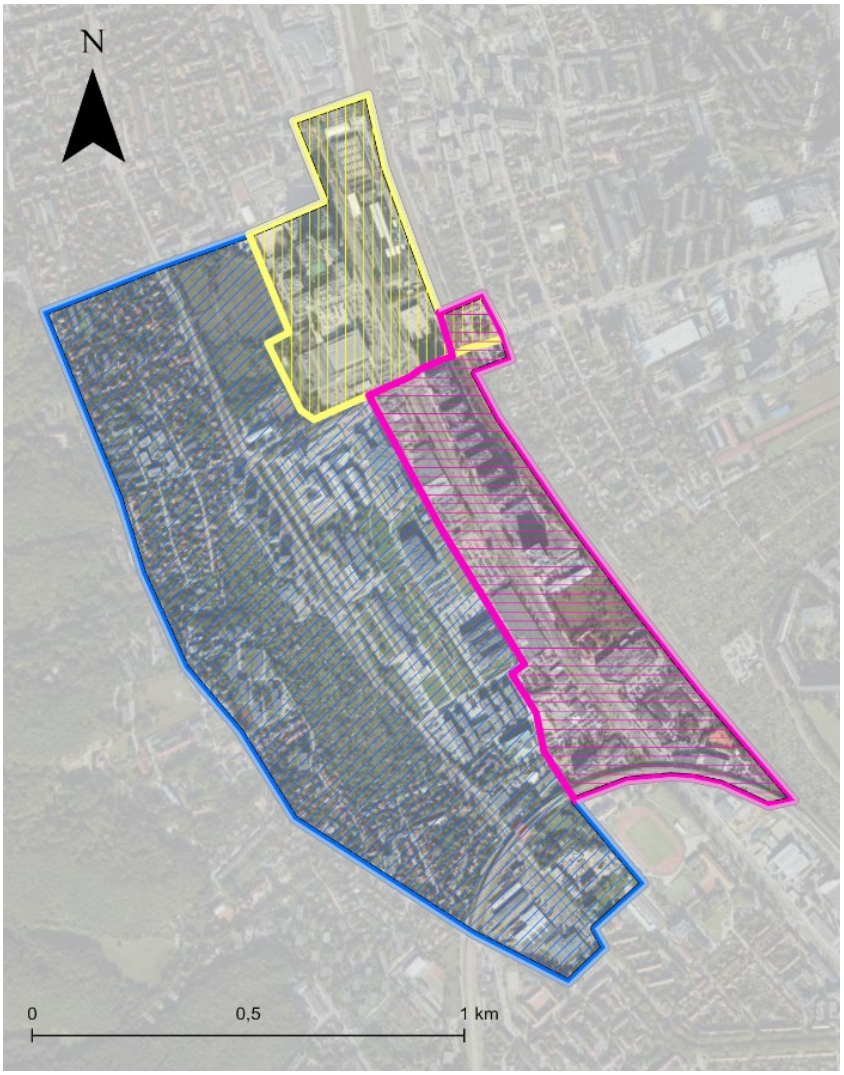


Figure 39 The proposed preliminary division of the replication area into three problem sub-areas that are the subject of separate projects within the framework of the student competition. Source: own study

Figure 40 Poster announcing the launch of the student competition. Source: own design

3.9. Mobility for EU Open Day in Gdansk (June 11, 2025)

The first open day of the Mobilities for EU project was held on June 11, 2025. The event was preceded by months of preparation with the support of WP1 leader WERIGHTCLICK. The promotion of the event used a wide range of promotional and informational methods - mailing list, information on the website of the city of Gdansk and the local information portal, social media campaign and posters and flyers, not only in traditional form but also displayed in the venue elevator.

The event consisted of, among other things:

- -a good practice fair, during which consortium members presented innovative solutions for sustainable mobility,
- a “Know Your Mobility Twin” quiz.
- a game of “E-city”
- a film introducing the project's themes
- an interactive information totem.

Most of the materials were prepared in bilingual pol/eng form.

Residents were invited to visit a coworking space inside the center (O4 Coworking), where they had the opportunity to meet with project partners, ask questions and learn more about the transportation innovations planned in Gdansk (and Pomerania more broadly) and other project cities. The Open Day also included a guided tour of the Nowa Oliwa replication area, covering the Olivia Centre, the campus of the University of Gdansk and the adjacent areas of the Grunwald Avenue corridor awaiting new development. Project partners were able to personally experience the problems in the area and imagine how new mobility solutions could be integrated into the urban environment.

The local project team was supported by employees of Gdansk Buses and Trams, the Marshal's Office, Olivia Centre, the University of Gdansk and audiovisual equipment supplier Eurotrend. The event allowed for an open dialogue between the project consortium and the residents of Gdansk on an unprecedented basis.

Organizing the project's Open Day was one of the biggest challenges faced by FLUM Gdansk. First, Gdansk was the first of the replication cities to organize this form of promotion and public participation in the Mobilities for EU project. Second, the project's Open Day formula is still not well known in Gdansk. Despite moderate attendance success, the event brought a lot of useful experience for all partners, which will help organize even more effective publicity campaigns in the future.

Figure 41 Mobilities for EU Open Day in Olicia Centre, Gdansk, June 11, 2024 Photo: Wojciech Chmielewski

Figure 42 Invitation for Open Day of Mobilities for EU project on Gdansk official website. Source: Gdansk.pl

środa, 11.06.2025
16.00–18.00

FLUM
FLYING URBAN MOBILITY LAB
PRZYJDŹ POZNAĆ MIASTA, TECHNOLOGIE I POMYSŁY NAPĘDZAJĄCE CZYSTĄ, INTELIGENTNĄ I INKLUZYWNĄ MOBILNOŚĆ MIEJSKĄ!

Czego się spodziewać? Przekonaj sie sam:

- Rozwiązania z zakresu mobilności miejskiej testowane w całej Europie
- Interaktywne narzędzia i prawdziwe historie z życia miast i twórców technologii
- Nawiąż kontakt z naszymi partnerami przy stolikach tematycznych, gdzie podzielą się swoimi doświadczeniami

MOBILITIES FOR EU
GDAŃSK
EUROTREND
Uniwersytet Gdański
OLIVIA
Co-funded by the European Union

Figure 43 Mobilities for EU Open Day poster. Source: WeRightClick

3.10. Information booth of the Mobilities for EU project at the municipal public fair (June 14, 2025)

A sort of summary of the activities of the Gdansk team of the Mobilities for EU project so far was the outreach activities during the public city festival organized in General De Gaulle Park on June 14, 2025.

An open information stand was organized there to promote the idea of the Mobilities for EU project, spreading awareness of sustainable mobility needs and the benefits it will bring to residents. The stand was very popular. Among the numerous questions, the predominant ones were those about the project's activities to date and the possibilities of responding to the city's pressing transportation problems - traffic jams, excess car traffic, unreliable public transportation service.

Figure 44 Mobilities for EU project's stand at the festivities in General the Gaulle park. Photo: Wojciech Lemański

During the event, project leaflets and publications related to the city of Gdansk were distributed, and there was also an opportunity to solve the Mobilities Twin quiz. The activities turned out to be such a great success that they will certainly be continued in other parts of the city in the next stages of the project's execution

Deviations from the plan

There is one deviation from the plan set for 2025. The launch of the student competition for innovative transport and space solutions, scheduled for June 2025, has been moved to October 2025. The competition will simultaneously be the subject of exercises at the three universities with which FLUM cooperates: University of Gdansk, Gdansk University of Technology and Gdynia Maritime University.
This will not affect the timeliness of the implementation of subsequent shuffles under WP1 and WP5 in Gdansk or any other consequences for the implementation of the project itself.

Links with other wps

The Gdansk team's WP1 activities, described in detail in this report, are directly related to WP5 and its ability to be implemented flawlessly in the area of replication.

The Municipality of the city of Gdansk cooperated so far in the implementation of WP5 Task 5.1 Packaging of new 2zero and CCam mobility solutions to foster upscaling and replication. One of the main goals was to meet stakeholders to learn about their needs and points of view, which was part of WP1 activities (workshops, conference speech etc.)**.** The results of further dissemination activities under WP1 will be fundamental to the feasibility of WP5 in terms of innovative transportation solutions and their evaluation by residents and other end users.

Conclusions and recommendations

The ideal opportunity to sum up the challenges of the Gdansk team made so far was the fourth General Assembly hosted precisely in Gdansk on June 11-12, 2025. The Gdansk team not only took care of organizing the event but also gave a short presentation on the implemented participatory activities and their effectiveness. The meeting ended with a visit to the replication area and an evening networking meeting in the premises of project partner Olivia Centre (Figure 46). The Gdansk team also took part in a number of workshops designed to lay the groundwork for the next challenges - milestones in the project's implementation.

Figure 45 Forth General Assembly of Mobilities for EU project in Gdansk, Poland

It was an excellent way to summarize the activities to date, an opportunity to confront the concepts of other Replication Cities and the assumptions of Leading Cities. It also provided an opportunity to revise plans for the

near future, clarify the tasks of the team and the next undertakings to bring the city of Gdansk closer to sustainable mobility.

Taking into account the numerous activities undertaken by the Gdansk team during the reporting period, the following conclusions can be considered:

Are conclusions reached?

Yes. The workshop produced a set of concrete proposals for improving urban logistics in Oliwa, such as identifying possible sites for microhubs, ways to improve last-mile deliveries, and innovative delivery practices. The activities undertaken within the Gdansk FLUM allow for the continuous and broad expansion of the stakeholder group. More people are joining the group because the FLUM is addressing further current problems in the area and its neighbourhood. The FLUM's working team consists of specialists in many fields. The team members' strengths lie in their highly developed social and organisational skills. Their openness, honesty and consistent values allow them to build social trust and develop a sustainable group of stakeholders.

Are any necessary follow-up actions clearly indicated?

Follow-up actions include evaluating the feasibility of proposed solutions and integrating them into future planning or pilot projects. The prioritised ideas from the workshop can serve as the basis for further studies or testing. Already planned for the next project period is the continuation of the student design competition, further promotion of the objectives of the Mobilities for EU project and FLUM itself, and more publication activity.

Are the conclusions consistent with the executive summary?

Assuming the executive summary reflects the above activities outcomes, the conclusions are consistent - they provide actionable, locally-rooted suggestions aligned with the project’s objectives.

The main problem with the replication area identified so far is that there are too many vehicles, including passenger and goods vehicles. As part of an open workshop with stakeholders, the following recommendations were developed to address the current situation: reducing the number of private cars by improving, expanding and making the public transport offer more attractive; and establishing legal and formal regulations for goods delivery and waste collection. Both Gdansk itself and the replication area are facing an excessive increase in the proportion of individual vehicles in modal split. There are simply too many cars - diesel or electric. Electrifying vehicles in Poland is not the only solution to the emissions problem. The main fuel used by Polish power plants is coal, so electric vehicles would only shift the source of emissions rather than reducing them.

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