CASCADE CITIES ACTION PLANS

Project deliverable D7.3

Version number: Final
Date for release: 30/08/2024

Authors: Marko Stančec (POLIS), Fanny Boccioli (POLIS)

MOVE21 – Multimodal and interconnected hubs for freight and passenger transport contributing to a zero emission 21st century

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

Deliverable administrative information

Deliverable Administration					
Grant Agreement	953939	**Project short name**	MOVE21		
Deliverable no.	D7.3	**Name**	Cascade Cities action plans		
Status	Final	**Due**	M40	**Date**	30/08/2024
Authors	Marko Stančec (POLIS), Fanny Boccioli (POLIS)				
Related tasks	T7.2, T7.3				
Dissemination level	Public				

Document history	Version	Date	Submitted	Reviewed	Comments
	V.01	1/07/2024		WPL	City of Brasov, Stockholm and Murcia's comments have been incorporated in Chapters 4 and 5
	V.02	15/07/2024			The reviewer's comments have been incorporated into sections 4 and 5. Project coordinator's comments have been incorporated into chapters 2, 3, 4 and 5
	V0.3	15/07/2024			City of Thessaloniki, Sofia's comments have been incorporated in Chapters 4 and 5
	V0.4	15/08/2024			Comments from evaluators and project coordinator have been incorporated in Chapters 4 and 5

	V0.5	29/08/2024		Comments from evaluators and project coordinator have been incorporated in all chapters. Final comments from Cascade cities incorporated. Deliverable finalised.
	V1.0	30/08/2024	Paal Mork	Submitted version

Legal Disclaimer

MOVE21 is co-funded by the European Commission, Horizon 2020 research and innovation programme under grant agreement No. 953939 (Innovation Action). The information and views set out in this deliverable are those of the author(s) and do not necessarily reflect the official opinion of the European Union. The information in this document is provided “as is”, and no guarantee or warranty is given that the information is fit for any specific purpose. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for using the information contained therein. The MOVE21 Consortium members shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials subject to any liability which is mandatory due to applicable law.

Project Executive Summary

The main objective of MOVE21 is to transform European cities and functional urban areas into climate-neutral, connected multimodal urban nodes for smart and clean mobility and logistics. MOVE21 will do this through an integrated approach in which all urban systems are connected, and which addresses both goods and passenger transport together. As a result, MOVE21 will improve efficiency, capacity utilisation, accessibility and innovation capacity in urban nodes and functional urban areas.

The integrated approach in MOVE21 ensures that potential negative effects from applying zero emission solutions in one domain are not transferred to other domains but are instead mitigated. It also ensures that European transport systems will become more resilient. Central to the integrated approach of MOVE21 are three Living Labs in Oslo, Gothenburg, and Hamburg and three replicator cities Munich, Bologna and Rome. In these, different types of mobility hubs and associated innovations are tested and means to overcome barriers for clean and smart mobility are deployed. The Living Labs are based on an open innovation model with quadruple helix partners. The co-creation processes are supported by coherent policy measures and by increasing innovation capacity in city governments and local ecosystems. The proposed solutions deliver new, close-to-market-ready solutions that have been proven to work in different regulatory and governance settings. The Living Labs are designed to outlast MOVE21 by applying a self-sustaining partnership model.

MOVE21 partners

The MOVE21 consortium consists of 24 partners from seven different European countries, representing local city authorities, regional authorities, technology and service providers, public transport companies, SMEs, research institutions, universities and network organisations.

- **Norway**: City of Oslo, Akershus County, Ruter, Urban Sharing, Mixmove, Institute of Transport Economics, IKT-Norge
- **Sweden**: City of Gothenburg, Rise Research Institutes of Sweden, Business Region Gothenburg, Volvo Technology, Renova, Parkering Göteborg
- **Germany**: City of Hamburg, City of Munich, Hafencity University Hamburg, DB InfraGO
- **Italy**: Metropolitan City of Bologna, Roma Servizi per la Mobilità, Roma Tre University
- **Belgium**: Eurocities, Polis
- **The Netherlands**: TNO
- **Greece**: Hellas Centre for Technology and Research

https://twitter.com/move21eu

https://www.linkedin.com/company/74707535/

For further information please visit **www.move21.eu**

Deliverable executive summary

The MOVE21 Cascade Cities Action Plans detail the specific strategies for transferring selected measures, identified through Task 7.3: Cascade Cities Programme. The document outlines the replication approach and capacity-building activities in which Cascades cities participated to facilitate knowledge exchange with MOVE21 partners, including the MOVE21 Living Labs and Replicator cities.

It also explains how the community of practice has been established to ensure that transport-related innovations are shared widely with other cities. This deliverable is directly related to Task 7.3 in WP7.

Keywords

Replication, Action Plan, community of practice, multimodal hubs, Cascade cities.

Table of contents

List of Figures

List of tables

List of abbreviations and acronyms

Acronym	Meaning
AMDDTPBv	The metropolitan authority in Brasov delegated for handling the public transport service by the municipalities and communes members of the association
EC	European Commission
GA	Grant Agreement
ICCP	Innovation Co-Creation Partnership
KEW	Knowledge exchange webinar
KoM	Kick-off Meeting
KPI	Key Performance Indicator
SUMC	Sofia Urban Mobility Centre
OSETH	Transport Authority of Thessaloniki
ODM	Origin-Destination Matrix
UNCC	Urban Nodes Competence Centre
WP	Work Package

1 Purpose of the deliverable

Work Package 7 within MOVE21 is dedicated to replication and take-up. It brings together the Living Lab cities – Gothenburg, Hamburg, Oslo – and the three Replicator Cities – Bologna, Munich and Rome – to create learning arenas for two-way knowledge exchange and replication. The aim is to validate the measures and policies tested in the Living Lab cities through replication and thereby increasing the impact of the project.

The primary objective of the Cascade Cities Action Plans deliverable is to detail the preparation process for transferring selected MOVE21 transport measures to the Cascade Cities. This deliverable outlines the establishment of a community of practice, involving the six MOVE21 cities and the Cascade Cities, designed to promote capacity building and support the adoption of MOVE21's transport-related innovative solutions. It explains the cascade cities programme designed within the project to provide peer learning and selected capacity-building opportunities for the participating cities.

Additionally, the report presents the replication strategy by evaluating the transferability potential in Cascade Cities, thereby providing a framework for extending successful transport innovations beyond MOVE21.

1.1 Attainment of the objectives and explanation of deviations

The objectives associated with this deliverable have been successfully met for five out of the six Cascade Cities. These cities were initially engaged through signed Letters of Intent at the time of submission of the project proposal. All six Cascade Cities were invited to participate in the Cascade Cities programme. Five cities participated actively in the scheduled activities. The activities included interviews and analyses to identify their specific challenges, learning needs, and expectations regarding MOVE21 solutions (Task 7.1), as well as knowledge exchange webinars and technical sessions.

Peer-to-peer learning activities and training sessions were offered during three peer-learning visits to MOVE21 Living Lab cities (Task 7.2), as well as during an event in Oslo in April 2024, which focused on multimodal passenger hubs, freight terminals, and improving connectivity within and between urban nodes. Knowledge sharing was facilitated through webinars and digital events, with three Cascade Cities participating in all peer-learning visits. However, one city, Toulouse, could not be reached during the organisation of these visits and, as a result, did not contribute feedback to the finalisation of this deliverable.

All Cascade Cities will continue to be invited to participate in knowledge transfer and capacity-building events throughout the project duration, including the final conference and the Urban Nodes Forum, as outlined in the section on the community of practice.

1.2 Intended audience

MOVE21 engaged with a pool of interested and committed cascade cities that have provided the project with a Letter of Intent. The Cascade cities participated in all initially selected activities and will be involved in all knowledge transfer and capacity-building activities until the end of the project, including lessons learned and shared through the Urban Nodes Competence Centre.

As a public deliverable, Cascade Cities Action Plans is not only intended for MOVE21 partners and Cascade cities, but a wider audience of urban authorities, policymakers, researchers, and other interested parties to get an understanding of the possible ways of replicating or/and upscaling the measures tested in the Living Lab cities and related policies and practices.

1.3 Structure of the deliverable and links with other work packages/deliverables

Chapter 1 outlines the purpose of the deliverable, identifies the intended audience, and comments on the alignment with the initial objectives and plans, as detailed in the MOVE21 Grant Agreement. Chapter 2 presents the replication approach within MOVE21 and the structure of the knowledge exchange and capacity-building activities designed to facilitate replication beyond MOVE21, and towards Cascade cities. Chapters 3 to 7 provide an analysis of the challenges, transferability potential, and replication interests in the Cascade Cities based on the current transport system, planned mobility hub projects and lessons learned through the Cascade cities programme.

Finally, chapters 8 and 9 map out future actions while providing concrete indications on potential knowledge exchange and the transferability of innovative mobility solutions as a way of supporting replication, along with conclusions on the overall replication process.

The knowledge exchange and capacity-building programme has been designed to support replication driven by the technical expertise and practical knowledge gained by partners across the consortium. In particular, the work packages focused on knowledge generation and collaboration—WP3: The Urban Social Layer, WP4: Governance Innovation, and WP5: Technological Solutions and Integration—are expected to significantly contribute to the activities within the community of practice. The impact analysis framework for activities in both the Living Lab cities and the Replicator cities is developed in WP8, which also oversees the project-level KPIs that guide and shape replication activities. A key focus of the replication efforts is to assess the transferability conditions of innovative measures and policies tested in the living labs, validate them, and thereby enhance the overall impact of the project. This work directly ties into exploitation tasks managed by WP9, as well as outreach and dissemination activities coordinated by WP10.

The contents of deliverables developed in WPs 3-5, in particular D3.1, D4.1, and D5.1, consolidated in the integrated city assessments in D6.2, D6.3, and D6.4 were considered both in the design of the capacity building and replication needs assessment and in the present deliverable.

Deliverable D7.1 provided the general framework for capacity-building and replication activities. Deliverable D7.2 built on the master plan and detailed the city-specific replication action plans of living lab and replicator cities.

2 Cascade cities Action Plans – Context and Methodology

2.1 Community of Practice in MOVE21: Key to Replication and Broader Impact

MOVE21 employs a range of knowledge-sharing, capacity-building, and replication methods to coordinate efforts in transferring innovative solutions and fostering the adoption of new sustainable mobility policies. Central to this strategy is the creation of a community of practice, which connects the three Living Lab cities with the three Replicator cities. Within this framework, the knowledge and insights gained in the Living Labs, as well as through local ICCPs, are shared with the Replicator cities. This interaction enables close collaboration, where cities exchange experiences, ideas, and best practices, allowing for a mutual learning process that strengthens both groups. Replicator cities also bring their own experiences in testing innovative mobility solutions, enriching the two-way exchange. This creates a dynamic platform where knowledge flows not only from the Living Labs to the Replicator cities but also in the reverse direction, resulting in a cross-fertilisation of ideas and more refined solutions.

Beyond the direct participants, the community of practice is extended through the Cascade Cities programme, to involve cities beyond MOVE21 partnership and bring the technical expertise, and practical knowledge within the consortium partners, as well as tools and insights generated by various project work packages (WPs), to the third layer of cities – Cascade cities. This process is used to showcase and discuss MOVE21 solutions, and how they can be tailored to different local environments. By doing so, all cities can validate guidelines, adopt policy recommendations, and ultimately contribute to a larger positive impact on urban mobility and sustainability.

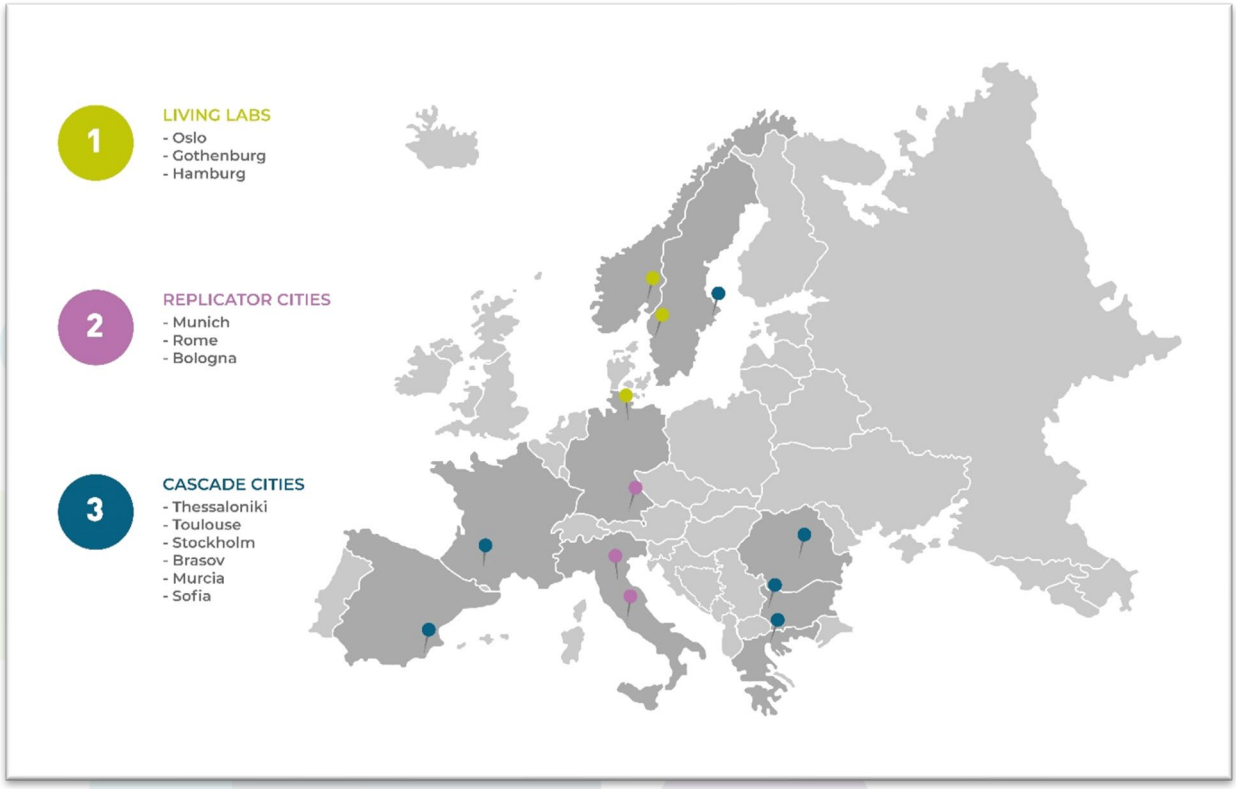

Figure 1. MOVE21 Living Labs, Replicator cities and Cascade cities

In summary, the MOVE21 project has established a multi-layered community of practice:

- Living Lab cities (Oslo, Gothenburg, Hamburg), where the solutions are being developed and tested
- Replicator cities (Munich, Bologna, Rome), which are working to adopt and adapt these solutions through collaboration
- Cascade cities (Brasov, Murcia, Sofia, Stockholm, Thessaloniki, Toulouse), which benefit from peer learning and knowledge transfer, helping to scale up the impact of the project

For cities not initially involved in the project, participating in this extended community allows them to access cutting-edge innovations, practical expertise, and proven solutions, thereby accelerating their own progress in sustainable urban mobility. This structure ensures that the project's impact extends beyond the MOVE21 cities, reaching a broader audience and contributing to a more widespread transformation of urban mobility systems across Europe.

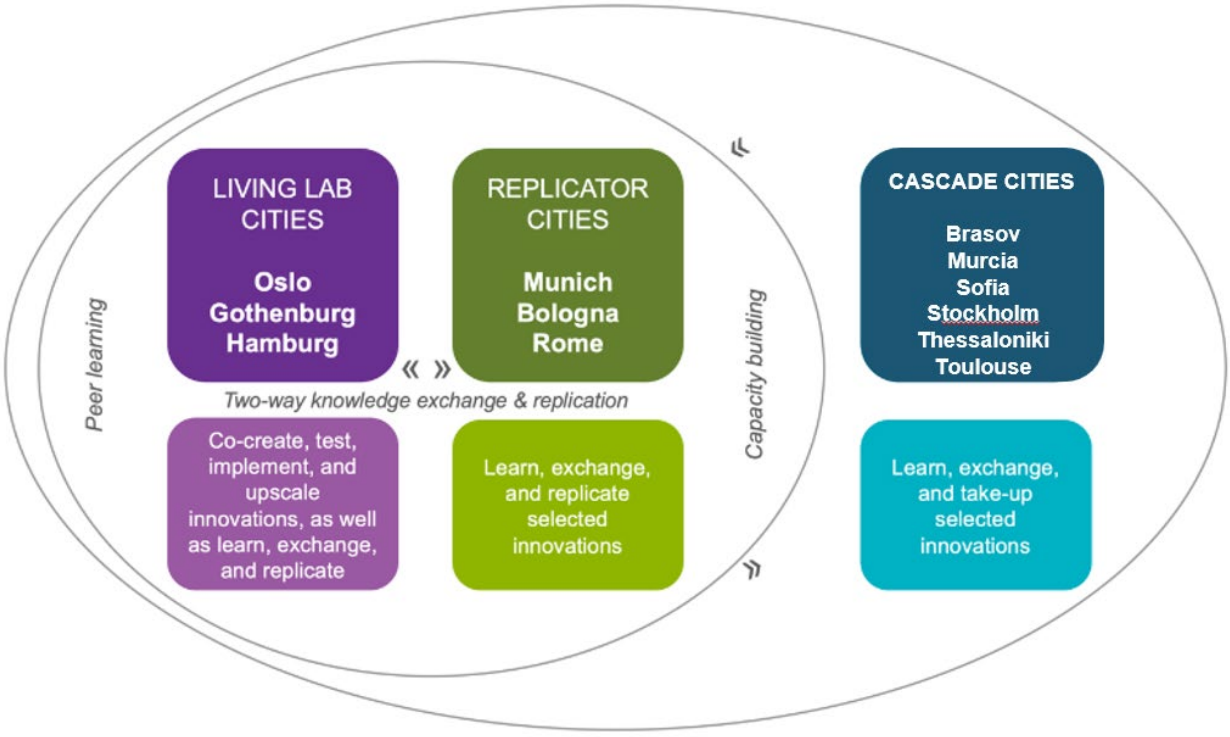

Figure 2. Replication Concept

2.2 MOVE21 capacity building and knowledge exchange formats

As a part of D7.1: *Capacity Building and Replication Master Plan*, the knowledge exchange and capacity building plan has been described in detail.

Knowledge exchange in MOVE21 is based on peer-to-peer learning, where MOVE21 city experts, decision-makers, and practitioners working on similar challenges, together with other MOVE21 partners, share experiences, knowledge gained, and solutions to possible challenges. This method has helped improve the implementation of policies and strategies by fostering mutual learning and

collaboration. Capacity building complements this process by helping individuals and organisations enhance their skills and adapt practices to address professional challenges.

MOVE21 offers a variety of knowledge-sharing formats, including webinars, in-person workshops, study visits, peer-learning visits, and knowledge exchange webinars, all designed to support the replication of innovative solutions.

Cascade cities, having committed through Letters of Intent, were invited to participate in online training sessions, bilateral meetings with MOVE21 experts, structured interactions with MOVE21 experts in peer-learning site visits, and online courses. Until the end of the project, they are given full access to the Urban Nodes Competence Centre and participate in the final event and Urban Nodes Forum. In the chapter below, the whole Cascade Cities programme has been explained in detail.

Figure 3: The structure of the activities in the community of practice

2.3 Cascade Cities programme

Under Task 7.2, a series of targeted activities were implemented to facilitate knowledge exchange, capacity building, and replication. These activities ensured that the knowledge and insights gained from tasks in WP3, WP4, WP5, and WP6 were shared with other cities for validation, replication, and broader adoption of successful solutions. To support this, a community of practice was established, which was later expanded to include cascade cities.

The involvement of cascade cities, detailed in D7.1 *Capacity Building and Replication Master Plan*, commenced with an onboarding webinar in M20 (December 2022). During this session, the MOVE21 project's progress was presented, and the expectations for cascade cities' involvement were clearly outlined. To onboard cascade cities, representatives were given access to main deliverables and the overview of the innovations implemented by the Living Labs. A written onboarding document was further added to the materials.

In M31 (November 2023), the City of Bilbao indicated that they could no longer commit to their role as a cascade city, which led to the recruitment of another cascade city. POLIS and Eurocities assessed potentially interested cities and shortlisted two cities to contact to become cascade cities: Ljubljana

(Slovenia) and Brasov (Romania). In the end, Brasov was selected, while Ljubljana got selected as a Fellow city in SCALE-UP and could not commit to both.

Figure 4: Priority themes for knowledge exchange & capacity building for Cascade cities

At the start of the Cascade cities' involvement in MOVE21, an online needs assessment survey was shared with Cascade cities to see their needs, and main priorities and put that in the context of innovative measures implemented in MOVE21. (Table 1.)

Stockholm	1. Access regulations (LEZ/ZEZ/other); 2. Incentivisation and nudging; 3. Sustainable urban logistics planning; Mobility hubs for people and goods; Digital integration; TEN-T integration; Other:
Thessaloniki	1. TEN-T integration; 2. Sustainable urban logistics planning; 3. Mobility hubs for people and goods; Incentivisation and nudging; Digital integration; Access regulations (LEZ/ZEZ/other)
Murcia	1. Access regulations (LEZ/ZEZ/other); 2. Sustainable urban logistics planning; 3. Digital integration; Mobility hubs for people and goods; Incentivisation and nudging; TEN-T integration;
Toulouse	1. Sustainable urban logistics planning; 2. Digital integration; 3.TEN-T integration; Mobility hubs for people and goods; Access regulations (LEZ/ZEZ/other); Incentivisation and nudging

Sofia	1. Digital integration; 2. Mobility hubs for people and goods; 3. Access regulations (LEZ/ZEZ/other); Sustainable urban logistics planning; Incentivisation and nudging; TEN-T integration
Brașov	1. Sustainable urban logistics planning; 2. Multimodal hubs for people and goods; 3. MaaS 4. Incentivisation and nudging

Table 1. General Priority topics – Cascade cities

A key milestone for the Cascade Cities programme was reached at the end of 2023 and the start of 2024 when two Knowledge Exchange Webinars and one online training event were organised with Cascade Cities participation and active involvement.

2.3.1 Online Training & Technical webinars

In total, six technical webinars are planned to be organised within the project's lifetime, with a main focus on the technical aspects of the implementations. In M33 (January 2024), Technical Webinar #5 on innovation Capacity was organised, being the first one to include participation from Cascade cities.

The goal of the webinar was to introduce the concept and framework of innovation capacity, to provide a better understanding of the challenges the cities run into, how they cope with them, and what are good strategies to overcome these challenges. The webinar showcased examples from the MOVE21 Living Lab cities and other projects to provide inspiration and best practices. Apart from presentations, facilitated discussions took place to give an interactive element and the opportunity to ask specific questions related to all cities, including Cascade cities.

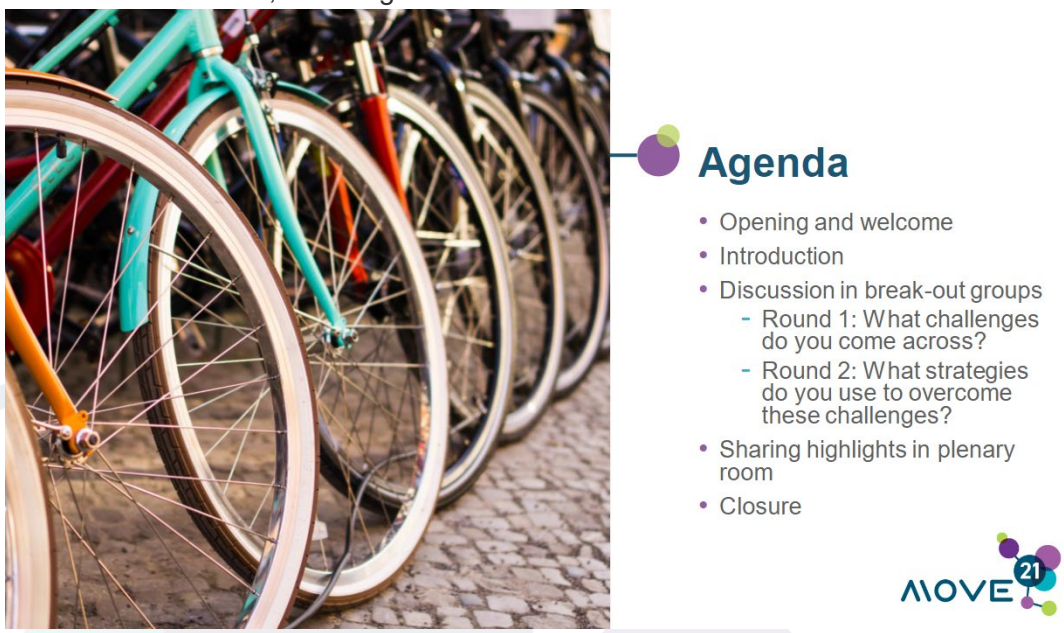

Figure 5: Agenda for the First training event including Cascade cities

2.3.2 Knowledge exchange webinars

Knowledge exchange webinars are organised with the main aim of presenting the implementation progress in the Living Lab and Replicator cities, providing tailored advice from peers and experts in all WPs, allowing exchange experiences and possible solutions between cities on barriers and drivers, and to connect challenges and create synergies.

The first webinar in which Cascade cities participated was organised in M33 (January 2024) with focus on urban logistics innovations in MOVE21. The purpose was to provide Cascade cities with a first overview of the urban logistics innovations developed and implemented by the MOVE21 Living Labs. The webinar showcased the replication ideas that the Replicator Cities have adopted in their Replication Plans. During the webinar representatives from the cities of Murcia and Stockholm expressed interest in the measures related to urban logistics.

The second webinar involving Cascade cities was in February 2024 (M34), with a focus on digital and service integrations in MOVE21. The purpose was to provide cascade cities with an overview of the digital and service integrations developed and implemented by the MOVE21 Living Labs. The webinar also showcased the replication ideas the Replicator Cities have adopted in the Replication Plans. The digital integration through the MaaS application received great interest, particularly the MaaS API developed by Urban Sharing. As a result, a session for cities was organised to allow further exchange on the topic.

2.3.3 Peer-learning visits

Building on the introductory study visits, a total of six peer-learning visits were planned throughout the project's lifetime. The last three peer-learning visits were all organised in 2024, having in mind the inclusion of Cascade cities in all, to learn from MOVE21 cities, not only in the digital environment but also through site visits. Each visit was facilitated by several experts and featured a peer-review session for structured feedback on the replication progress.

- Hamburg (27-28 February 2024)

The first part of the visit was dedicated to the hub at Kaltenkircher Platz: the transformation of the previous parking space into a mobility point with alternative mobility offers and micro-depot as well as the presentation of on-demand ride-sharing service MOIA and plans to augment the service with parcel delivery. The second part of the site visit involved a walking tour of infrastructure for active mobility and a visit to the Neighbourhood-Hub Holstenstraße a multi-functional hub including a micro-logistics hub and social services

- Oslo (22-24 April 2024)

The visit focused on the first mobility hub established in the Grorud Valley area, as part of testing a network of smaller and larger hubs in a suburban area. In addition to offering public transport and micro- and shared mobility services, the hub is also a demo site for the EU-funded project ULTIMO. Participants also got introduced to Oslo's logistics policies and received an update from Ruter and MIXMOVE on the pilot on-demand for people and freight. Finally, Daniel Piatkowski shared key insights from his book Bicycle City Riding the Bike Boom to a Brighter Future.

- Gothenburg (14-15 May 2024)

The visit focused on street reallocation and transforming car parking areas for cyclists with a site visit to one of the areas in the city initiative “Pilotarea bicycle”. The visit included the hub Klippan/Jaegerdorff as one of the MOVE21 test sites, which focuses on enhancing shared mobility and easy transitions between transport modes. Visits were also organised to the mobility hotel Nordstan. During the study visit, a training on gender equality in urban mobility was organised by RISE. The most important milestone for Cascade cities during the study visit was the replication peer-review of Cascade cities’ - Replication Action Plans for Brasov, Thessaloniki and Sofia, whose representatives participated in the visit.

2.3.4 Cities’ session (in person; as part of peer learning or study visits)

This format has been planned as part of capacity building with a full day devoted to cities discussing in-depth the status of implementations, challenges, solutions, and synergies. Honest exchanges were encouraged to learn from failures (own and others). Cascade cities Brasov, Thessaloniki and, Sofia were part of all three peer-learning visits in 2024. They participated in each visit and had the opportunity not only to learn from MOVE21 cities but also to present their projects and urban mobility solutions. The purpose of the session in Hamburg, the first study visit in which Cascade cities participated, was to share the replication methodology with Cascade cities, who presented their ongoing strategies, plans and, thematic interests. Cascade cities identified several thematic interests, and all six MOVE21 cities provided an update on their progress in replication measures. During the peer-learning visit to Oslo in M36, the cities’ session was dedicated to focusing on three topics, which also catered to interests expressed by the cascade cities: the role of local authorities in setting up consolidation hubs; MaaS API technical details; and mobility hub guidelines in Oslo and lessons learned. In the third study visit organised in Gothenburg, during the Cities’ session, Cascade Cities Brasov, Sofia and Thessaloniki shared a presentation on replication measures they shortlisted for their replication action plans.

2.3.5 Online exchange

The online exchange hub is a personalised, secure space for the community of practice and features a discussion forum, a collaboration and co-editing space, a meetings calendar, personalised notifications, and news feeds. It is the hub for knowledge exchange activities, and it is integrated with the project's general document repository. To include Cascade cities, after onboarding they were given access to main project deliverables, presentations, and recordings for all webinars and online trainings, along with access to the news feed.

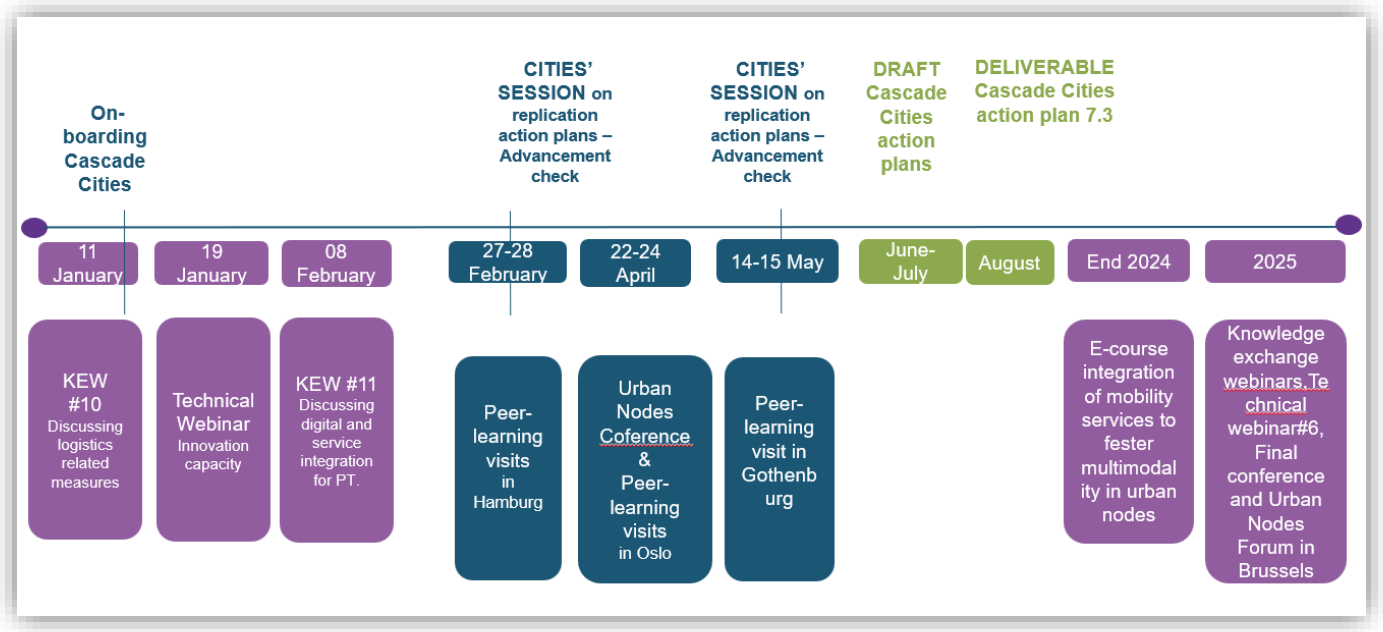

Figure 6. Cascade Cities programme timeline

After the peer-learning event in Oslo, Milestone 12 was reached on time in M36 (April 2024), with Cascade Cities engaging in exchanges and capacity building.

During the onboarding process, all cascade cities' representatives were given access to key deliverables and infographic overviews of the innovations implemented by the MOVE21 Cities (Tables 2., 3. below). The process included onboarding interviews and a presentation of current transport systems in all Cascade cities. To assess whether a measure is fit for replication, each city has conducted a transferability assessment, after webinars and study visits they have been part of. Cities then identified the main challenges they might face when implementing the measure (described in more detail in the templates, in chapters 3-7).

Each city carried out a short transferability assessment of each measure listed under 'Measure selection' based on the information provided by the related city and the information gathered during the knowledge-sharing and replication activities. It assessed whether those conditions can be replicated in their specific context, with points ranging from 1 to 5, where 1 stand for low transferability potential and 5 represents high transferability potential (described in more detail in the templates, in chapters 3-7; template provided in Annex A).

Finally, to assess whether a measure is fit for replication, each city has conducted an assessment of the timeline for implementation of the measure, practical steps and key points to be monitored, putting all the challenges in the context.

2.3.6 Initiatives within MOVE21

Mobility measures - Oslo	
Mobility Hub Network	The first mobility hub has been opened - the hub will transform an existing park-and-ride facility into a dynamic mobility centre offering convenient access to a range of transport options. Commuters will have access to trains, e-scooters, e-bikes, car-sharing services, secure cycle parking and, in the future, autonomous vehicles.
Integration of micro-mobility with public transport	The City of Oslo is partnering with Urban Sharing to develop a Mobility as a Service (MaaS) project that will simplify integration for public and private mobility providers. The aim is to increase the uptake of multimodal travel, reduce car ownership, congestion and pollution, and increase infrastructure investment.
Mobility on demand for people and freight	The City of Oslo is testing a new way to transport goods efficiently and reduce traffic by combining passenger and freight transport in its Mobility on Demand (MoD) service for seniors. The service, which transports senior citizens to key destinations such as shopping centres, will now also offer home transport of goods purchased in the shopping centre.
Goods delivery in the Zero Emission Zone	The City of Oslo is investigating how to distribute goods to and within a Zero Emission Zone (ZEZ). This includes how to enforce zero-emission vehicles and reduce the total number of vehicles.
Mobility measures - Gothenburg	
Zero emission mobility hub for service providers – Mikromobility Hotel	The Micromobility Hotel consists of three solutions. The first solution is a 'handyman hub' with a fleet of electric cargo bikes for service providers. The second is a 'front-end hub' with a bike repair centre and other micromobility businesses sharing a common space. The third is the continued operation of an existing goods consolidation system.
MaaS integration (parking, shared bikes, public transport)	The Parkering Göteborg app brings together different mobility services and introduces new features such as a bike rental station, shared micro-mobility spaces and improved navigation. The integration process, which will be completed in 2023, was launched at the end of December.
Bike service concept	The bike service aims to make existing shared mobility solutions more attractive by using tools such as visualisation, guidance and nudging.
Goods consolidation for parcel lockers	Gothenburg is innovating with a B2B parcel box concept that aims to reduce traffic, emissions and congestion.
Mobility measures - Hamburg	
Multifunctional neighbourhood centres	The City of Hamburg has transformed a vacant building into a multifunctional neighbourhood hub for both commercial and public use. The hub aims to reduce emissions and traffic by providing integrated solutions for the movement of people and goods.

Combined transport for people and goods	In the west of Hamburg, Moia on-demand buses are now also used as delivery vehicles! Residents can now conveniently have locally purchased goods delivered.
Neighbourhood hub	As part of the project, a neighbourhood hub Kaltenkircher Platz has been set up in a parking lot along Stresemannstraße. In collaboration with DB Smart City, the hub features a modular micro-depot container, a parking zone for micro-mobility and bicycle racks for better connections to public transport. The hub facilitates last-mile delivery using zero-emission vehicles and is intended to serve as a model for further development in other areas.

Table 2. Mobility measures in MOVE21 Living Labs– Oslo, Gothenburg Hamburg

Mobility measures - Bologna	
Provider-neutral parcel boxes in public spaces" (replication from Munich)	The city will trial three automated micro-consolidation hubs designed to transfer parcels from traditional vans to electric delivery vehicles, optimising the last-mile delivery process.
Cargo-waste co-freight (replication from Gothenburg)	To improve the sustainability of the bicycle industry Bologna is centralising the disposal of waste materials from bicycle repairs, addressing inefficiencies and environmental concerns. In addition, the city plans to experiment with shared procurement of raw materials for bicycle workshops, promoting a more efficient and environmentally friendly approach.
Mobility hub (replication from Hamburg)	Bologna is exploring an initiative to promote the use of bicycles and cargo bikes during major events. The strategy involves testing the conditions for implementing temporary bicycle parking areas to evaluate their effectiveness in promoting non-polluting vehicles and potentially reducing car and moped parking spaces during major events.
Mobility measures - Munich	
Neighborhood hub (Replication from Hamburg)	Munich's replication plan involves transforming a vacant space into a multifunctional hub, which will not only offer solutions for parcel logistics, but will also offer a location for providers of new types of bike logistics solutions, e.g. in the area of general cargo or craft deliveries.
Park and Bike Node of Klippan Gothenburg by enhancing current mobility hubs	Munich plans to replicate and enhance current mobility hubs, prioritising improvements for cycling and shared micro-mobility options. The strategy includes initiatives for guidance, visibility, e-scooter parking and signage to create a robust multimodal hub identity with connections to public transport stops and a target of 100 to 200 mobility points by 2026.
Integration of micro-mobility with PT (Replication from Oslo)	The aim is to seamlessly integrate micro-mobility with public transport, providing a unified multimodal experience for users and an easy-to-use solution for operators through a dedicated app. The Munich replication focuses on integrating the MVGO mobility app into a common platform managed by DEFAS to improve the user experience with integrated mobility services for convenient multimodal travel.

Mobility measures - Rome	
Park and Bike node (replication from Gothenburg)	Rome will focus its replication efforts in the Basilica S. Paolo - Metro B station area, introducing a bike box service to encourage a modal shift to local public transport (LPT) by providing bicycle parking services (Bike Box and Bike Park app), cargo bike rental services (rental station) and parcel lockers.
Emission free goods transport (replication from Oslo)	Rome's Tridente LTZ, located in the city centre, will introduce emission charges for freight transport, with safety measures such as pedestrianisation and 24/7 operation for electric trucks. Efforts are being made to shape the area with consolidation terminals and last-mile deliveries, involving logistics operators through a logistics living lab and taking into account the perspectives of private citizens in different neighbourhoods.
Technical guidelines for designing metropolitan mobility hubs" (Bologna)	These guidelines are intended to serve as a reference for public-private entities. The ongoing transformation of Piazzale Flavio Biondo into a multimodal hub is in line with these guidelines, and the project can introduce additional mobility services and improve standards for guidance, wayfinding and visibility.

Table 3. Mobility measures in MOVE21 Replicators Cities Bologna, Munich and Rome

3 Replication Action Plan – BRASOV

Brasov is perceived as a leader in terms of innovation in mobility solutions in favour of the extended functional urban area. The interest of AMDDTPBv (the metropolitan authority delegated to handle the public transport service by the municipalities and communes' members of the association) in joining MOVE21 is to learn how to support both urban and rural community members in acknowledging their role and responsibility in solving traffic congestion and air pollution and in defining the solution that best answers to each mobility needs and territorial challenges. Sustainable urban mobility which allows people and goods to move freely and safely while protecting the environment is considered crucial by AMDDTPBv for the quality of life and for ensuring a sustainable economic and social development of the Brasov Metropolitan Area.

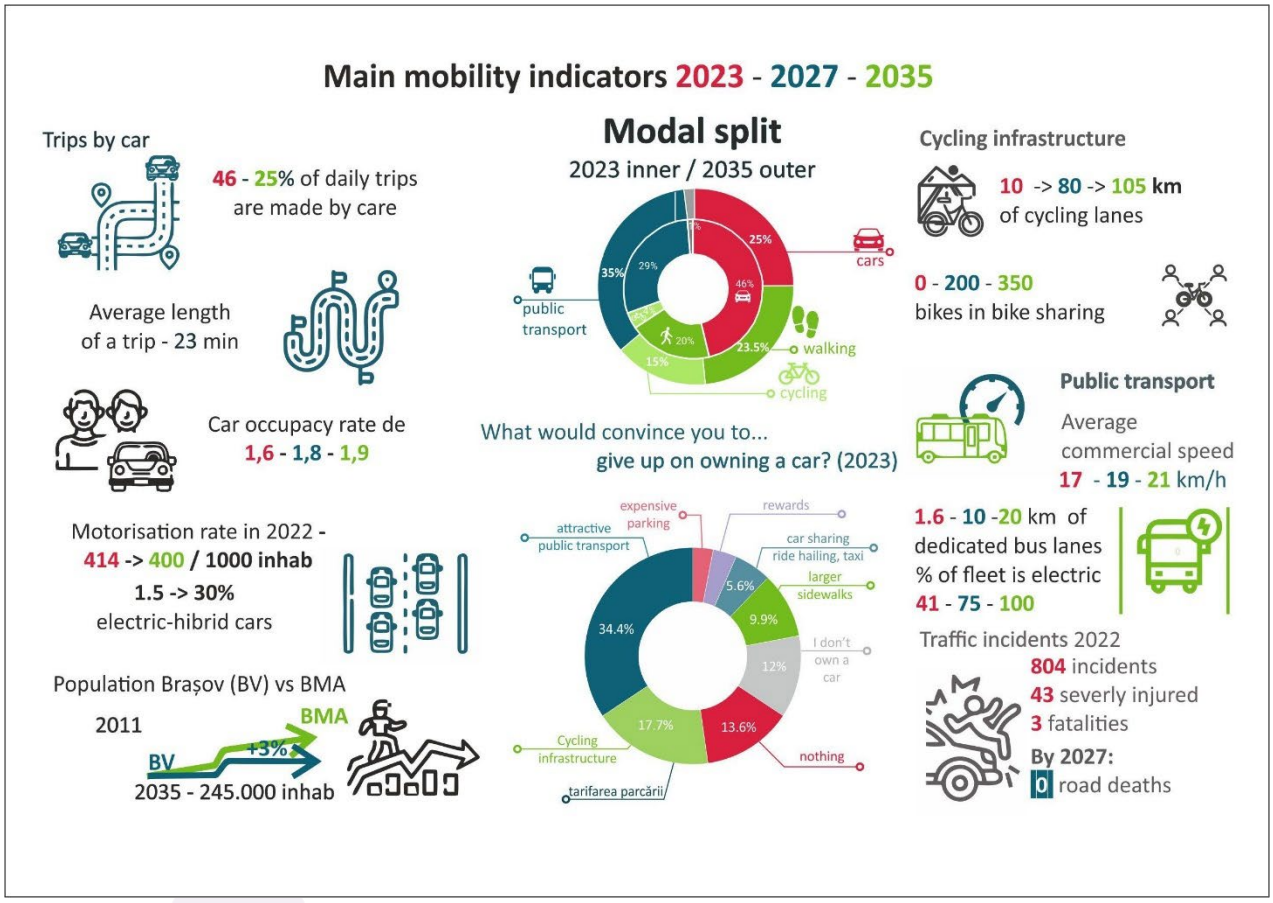

Figure 7. Brasov mobility indicators until 2035

Initiatives and priorities for Brasov in the context of MOVE21 innovative measures

- ✓ Creating LEZ and LAZ in the old city centre;
- ✓ Optimize the public transport (extend the network, harmonise line schedules, use in operation only ZEV etc.);
- ✓ Expansion of private easy-box business also in the Metropolitan Area;
- ✓ Expansion of private micro-mobility delivery companies during the pandemic;
- ✓ Spread and diversification of private vending machines businesses (snacks, fresh products, fishing equipment, etc.);
- ✓ Spread of car self-wash points also in the Metropolitan Area;
- ✓ Openness to developing 10/15 minutes city initiatives;

- ✓ Piloting mobility points/hubs to ease transport mode shifting (pedestrian, car sharing, bike sharing, electric vehicle charging).

3.1 Measures selected

Measure name and description		
1	Mobility hubs for people (inspiration from Bologna, Hamburg and Oslo)	The main train station in Brasov and the entire area in the proximity of it is going to be transformed into a major mobility hub. The process has already started by updating the park located in the North side and by constructing a public transport terminal in the N-V side. The following construction site will be moved on the square in front of the train station where the space will be designed for people and multimodal shifting.
2	Create LEZ in the Old City Centre (inspiration from Gothenburg, Oslo and Rome)	The municipality is interested in restricting the access of certain categories of vehicles in the Old City Centre during the weekend and holidays except for the neighbourhood residents and emergency, public utility and public transport services.
3	Creating ODM by using data collected from public transport users (general inspiration from three study visits organised)	By using an incentivization and nudging based app, the contracting authority is intending to create an Origin-Destination Matrix from the data collected from the PT users who consent to share their location and follow the steps required.
4	Updating the SUMP at a metropolitan level (inspiration from the conference organised as a side event to study a visit to Oslo)	AMDDTPBv as a contracting authority is updating the SUMP at a metropolitan level due to the dynamic mobility behaviour of the FUA inhabitants and the coordinated need for acting at a metropolitan level.

Table 4. Brasov's selected measures with description

3.2 Measures - Analysis

3.2.1 Transferability potential

Measure 1 - Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	4	The Municipality staff is currently handling the project but with the advice of the PTO's staff and of the Brasov Metropolitan Association for Public Transport (AMDDTPBv) staff which has gained new forces in the last months and the current staff can handle new and complex tasks with relevant competencies

			and previous experiences in other similar projects.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	Although the staff can handle the technical requirements of implementing the initiative, by the example of previous projects managed by the Municipality some have been delayed due to certain TP corrections or budget adjustments. This type of modifications can affect the timeline of the implementation.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	4	The Municipality will have all the support of the AMDDTPBv's comprehensive experience and capacity in developing and implementing the mobility hub.
Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	5	The Municipality has the required technical conditions for developing the mobility hub and benefits from the sustained support of the contracting authority (AMDDTPBv) and of the PTO.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	4	The necessary funds have already been approved and allocated through EU funding and local budget.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	5	The legislative/ regulatory framework is well set and it must also follow EU regulation for accessing the funds.
Communication	1 – The Municipality does not have the experience or	5	The Municipality as beneficiary of the project is keeping the

	capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens		information public about the implementation stage especially because it is linked to other sustainable mobility measures such as dedicated bus lanes and bike sharing lanes.
(Include any other factor specific to the project)	1 – Factor is a barrier in your context 5 – Factor is easy to address		

Table 5. Brasov's transferability assessment for measure 1

Measure 2 - Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	3	The staff of the Municipality is in close connection with the AMDDTPBv staff and other relevant institutions with relevant competencies and previous experiences in other similar projects.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	Although the increasing level of pollution is disturbing for many administrative representatives such a measure cannot surpass the public debate step due to the significant impact of the measure. The need and benefit of the measure are important and considered a priority but the bureaucracy is not easy to surpass which is why the timeframe of the MOVE21 project is not long enough to cover them.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	4	The Municipality can and has the proper regulation for implementing such a measure. Yet it is considered to be very unpopular due to the car-ownership oriented culture of the people which raises the pressure on the clarity and transparency of the procedures.

Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	3	The Municipality did not prove all the technical knowledge in order to meet all the requirements of the Local Council but for any instance it seeks for support from all the related institutions to start developing the measure.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	4	Funds for implementation need to be approved by the Local Council because the main funding source would be the local budget.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	3	There is a legal framework available due to the infringement policy imposed for Romania and the implementation of such a measure would be a best practice example at a national level.
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	4	There has been an intense communication campaign preceding the public consultancy and the Local Council vote. Although it did not get approved due to some miss clarities the Municipality is intending to solve the issues and continue the process of approval. The Municipality has a great experience in communicating any news to the public and has an active presence on various modern communication channels depending on the targeted group.
(Include any other factor specific to the project)	1 – Factor is a barrier in your context 5 – Factor is easy to address		

Table 6. Brasov's transferability assessment for measure 2

Measure 3 - Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	5	The staff of Brasov Metropolitan Association for Public Transport (AMDDTPBv) has been involved in various collaborations and projects with the purpose of gaining relevant competencies to implement such a measure.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	5	AMDDTPBv in collaboration with the PTO can handle the technical requirements of implementing the initiatives, by using different apps and digital instruments.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	4	The Municipality is going to be part of the implementation team but the coordination part is going to be on AMDDTPBv's side. Also, by developing the matrix at a metropolitan level, the collaboration of all the other local administrations will also be a plus.
Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	4	Exploring the technical conditions has been done through MOVE21 but also by participating to related events where the latest digital solutions are being presented and explored. AMDDTPBv has the required technical conditions for developing the ODM at aa metropolitan level.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	3	The necessary funds have already from the local budget which is why the incentivization will be kept as low as possible.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context	4	At the moment there is enough legislation and lack of data to sustain the urgency of such a measure. Yet the subject must be GDPR compliant and it must also follow any other EU data-collection regulation.

	5 – A framework to set up the legislative responsibility or regulatory clarity is already in place		
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	4	AMDDTPBv has communicated the willingness of collecting data for such purpose and is GDPR compliant.
(Include any other factor specific to the project)	1 – Factor is a barrier in your context 5 – Factor is easy to address		

Table 7. Brasov's transferability assessment for measure 3

Measure 4 - Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	5	The staff of Brasov Metropolitan Association for Public Transport (AMDDTPBv) has gained new forces in the last months and the current staff can handle new and complex tasks with relevant competencies and previous experiences in other similar projects.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	Although the staff can handle the technical requirements of updating the SUMP, the process must follow all the bureaucratic procedure and it is hard to believe that the timeframe will overlap entirely over the timeframe of the MOVE21 project.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the	4	The coordination has been undertaken by AMDDTPBv on behalf of the Municipality due to the comprehensive experiences of the AMDDTPBv's staff. After the final draft version of the SUMP will be put in public debate it will follow the approval

	coordination needed to set up this scheme		procedure and afterwards will be released.
Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	5	The staff of AMDDTPBv meets the technical conditions required for updating the SUMP mobility hubs will require new knowledge. In case of additional expertise AMDDTPBv will handle the situation according to the need.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	5	The update of the SUMP will be made in-house which will help reducing the costs. For the implementation AMDDTPBv will be using its own budget, the allocation from the Municipality and in case is needed it will make use of any study funded through other EU projects, such as FastTrack.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	5	The current Romanian Legislation covers the need of having a SUMP for each major municipality and since the current ROP has started it also transferred the need to other smaller administrations all around the country, especially if made at a bigger scale such as for a Metropolitan Area. The latest version of the SUMP was updated in 2017 but the local context has changed a lot so the need of updating the SUMP and correlating the initiatives of the administrations within the Metropolitan Area became an urgent matter.
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	3	AMDDTPBv has announced the intention of updating the SUMP on various communicating channels especially because of the survey for evaluating the mobility of the inhabitants all around the FUA which is even larger than the Metropolitan Area. Also the public debate before approving the SUMP and the

			meetings with the stakeholders are also visible signs of cooperation and communication of the measure.
(Include any other factor specific to the project)	1 – Factor is a barrier in your context 5 – Factor is easy to address		

Table 8. Brasov's transferability assessment for measure 4

4 Replication Action Plan – MURCIA

The city of Murcia is the capital and largest city of the Region of Murcia, located in southeastern Spain. Recognizing the importance of reducing congestion, improving air quality, and enhancing accessibility, the Murcia City Council has introduced a comprehensive set of measures to promote alternative modes of transportation.

- ✓ Murcia Mobility Plan 2030 (ZBE) - provides a set the key points for the reorganization of the municipality's urban transportation. The objective of the Plan is to establish a public transport system in Murcia. This system, which includes the tram line and buses, works in a coordinated manner and satisfies the mobility needs of Murcia citizens, in addition to guaranteeing economic and environmental efficiency. The bus lines are coordinated with the tram, as well as with the railway, both high-speed and suburban, and their integration with bicycle transport, also considering other actions in terms of traffic, segregated or shared platforms, park and ride facilities and other integrations.
- ✓ Cycling - Murcia City Council is working on the creation of an urban network of bike lanes to consolidate the bicycle as a safe and accessible means of transport. Work on several bike lanes in the city has recently been completed. In recent years, 1,406 bicycle parking forks have been installed throughout the municipality. This system allows even those who do not have a place to leave their bicycle at home, or who live on the outskirts of the city and want to use it for their daily trips around the centre, to do so under the same conditions as those who do not have this possibility.
- ✓ Electric Vehicle Infrastructure - Murcia Local Electric Vehicle Strategy provides a basis for the shift towards electric mobility. Murcia has invested in electric vehicle (EV) infrastructure to support the transition away from fossil fuels. The city boasts a growing network of EV charging stations, including fast and semi-rapid chargers conveniently located on public roads and a system of shared e-scooters without stations implemented in the city.
- ✓ Diverse Mobility Solutions - Murcia boasts a modern tram network comprising two lines that connect the city centre with suburban areas, including the university campus. The introduction of Bus Rapid Transit (BTR) lanes further enhances the efficiency of public transit, offering commuters a reliable and rapid means of transportation.
- ✓ Murcia's Traffic Control Centre, equipped with state-of-the-art technology as part of the Smart City initiative, plays a pivotal role in managing urban mobility. By monitoring traffic flow and implementing adaptive measures, the centre ensures efficient transportation operations while minimizing congestion and environmental impact.

4.1 Measure selected

Measure name and description *Zero emission mobility hub for service providers – Micromobility Hotel in Gothenburg*
Murcia decided to adapt Micromobility Hotel measures from Gothenburg to continue to upgrade existing hubs in Murcia so adapted two solutions would fit into the upgrade of similar hubs in Murcia. On the one hand, a zero-emission transport vehicle rental service with a maintenance and repair centre would be a transferable measure to existing hubs in Murcia and on the other hand, a logistics warehouse for packages as well as a locker-type collection service for users.

Table 9. Murcia’s selected measure with description

4.2 Measure - Analysis

4.2.1 Transferability potential

Measure - Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	4	Schedules would have to be reassigned to be able to assign staff to work on the project. As it is a mobility project, it would be necessary to have the personnel of the transport service of the Murcia City Council.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	It is impossible for our City Council to make the implementation within the project deadlines. Ii requires the approval of expenses within the municipal budget, the preparation of a well-defined technical project and the bidding for the works of conditioning the premises, the tender of the provision of the rental service, the bidding for package collection and other considerations that make it a long-term project.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	5	There are similar experiences in the municipality in the development and implementation of similar projects. Aligning these guidelines with existing governance processes does not pose any anticipated challenges.
Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	4	The Municipality does not have all the knowledge to implement the plan, but it is not difficult to obtain external support from potentially interested companies. The logistics companies that regularly collaborate with the Murcia City Council have sufficient knowledge to be able to contribute to our project on issues of storage, logistics and contactless package

			delivery services to the user. Regarding the issue of renting electric vehicles for parcel delivery, you can contact companies that offer this type of services and ask for advice.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	2	Currently we do not have our own funds to tackle this project since the municipal budget for this year has already been closed. We have to do a project to be able to request funds. There is great uncertainty in this sense since it is not easy to define at this time if there will be funds in the future to carry out the project.
Legislative/ regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	4	There is no legal impediment to implementing the project. It can be proposed as a pilot project to achieve more sustainable transport of goods within our municipality.
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	5	There are well-established communication channels and processes for technical guidelines, both in relations with subcontractors and in relations with citizens, such as within the municipality and local partners.

Table 10. Murcia's transferability assessment for the selected measure

Condition for implementation – Time needed for implementation	
Practical steps to take:	1. Propose to the traffic service of the Murcia City Council how to fit the pilot into one of the action plans that the city currently follows, such as ZBE (LEZ) or Sustainable Mobility Plan. 2. Discussion of the area in which to implement the measure (neighbourhood or street most suitable for this pilot) 3. Seek financing, either through city funds or through external financing. 4. Preparation of the technical and administrative documentation necessary to make the project viable, thinking about the future bidding for services and works by an external collaborator. 5. Tendering of services and works.

	6. Execution of the works, and commissioning of the pilot. 7. Monitoring of results and maintenance of the installation.
Timeline:	*September 2024* *Preparation of a technical report of the project to be implemented.* *December 2024* *Presentation of the technical report to the corresponding service of the City Council to request financing.* *First semester 2025* *Tendering of services to be provided by contractors* *Second semester 2025* *Execution of the works and provision of the service*
Key points to be monitored:	Find plans for the city that are in line with this pilot Search for financing Citizen interest, Stakeholder involvement, transport companies interest

Table 11. Conditions for the implementation of the measure in Murcia

5 Replication Action Plan – SOFIA

Sofia is the capital of Bulgaria and the country's largest city. Sofia's transport system is well-developed and it is a significant part of the national transport scheme. Major investments in the construction of the metro, renovation of public transport vehicles and infrastructure have been made over the last years with the support of EU funds. Since 1990, the number of private cars has significantly increased which is causing more and more congested roads. Therefore, Sofia Municipality and Sofia Urban Mobility Centre aim to decrease the share of private cars in favour of sustainable and environment friendly modes. One of the many goals of Sofia Municipality is also to create better organization of transport management in Sofia, by expanding the use of intelligent transport systems. The vision of Sofia is to become “The green and smart capital of Bulgaria - model of sustainable development”. Sofia Municipality is also working on a strategy "Vision Sofia 2050". More information can be found on this website: https://vizia.sofia.bg/vision-sofia-2050/.

Current projects and priorities for replication

- ✓ MaaS-Integration with public transport and shared mobility services to promote multimodal integration and more sustainable origin-destination trips
- ✓ Introducing scan-car technology for on-street paid parking zones and integrating it with Park&Ride and public transport in one app
- ✓ LEZ – lessons learnt from the first LEZ implemented in Sofia, further development
- ✓ Mobility on demand (one year in operation in Sofia)
- ✓ Mobility hubs,promoting shared mobility and integrating existing Park&Ride with shared mobility options
- ✓ Sustainable urban logistics planning, first SULP for Sofia is under development

5.1 Measure selected

Mobility measures selected With current challenges in the transport system in Sofia, within the next three years, SUMC wants to develop MaaS to provide a multimodal mobility solution involving public and low-carbon on-demand transport based on data made available by the providers. This includes integration of data from new transport modes such as e-scooter, e-bikes and e-cars to facilitate multimodal transport. Shared bikes system is under development and depends on the mutual effort of SUMC, Sofia Municipality and relevant stakeholders. The aim is to provide shared bikes as a feeding transport to the metro and main PT stops. Therefore, the main inspiration for further implementation was taken from two measures being implemented in Oslo and Gothenburg.	
Integration of micro mobility with public transport (Oslo)	The City of Oslo is partnering with Urban Sharing to develop a Mobility as a Service (MaaS) project that will simplify integration for public and private mobility providers. The aim is to increase the uptake of multimodal travel, reduce car ownership, congestion and pollution, and increase infrastructure investment.
MaaS integration (parking, shared bikes, public transport) - Gothenburg	The Parkering Göteborg app brings together different mobility services and introduces new features such as a bike rental station, shared micro-mobility spaces and improved navigation. The integration process was completed 2023.

Table 12. Sofia’s selected measures with description

5.2 Measure – Analysis

5.2.1 Transferability potential

Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	5	There are staff with relevant competencies and experiences in SUMC.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	Within the next three years, SUMC will develop MaaS under the deployEMDS project. The service will provide a multimodal mobility solution involving public and low-carbon on-demand transport based on data made available by the providers. This includes integration of data from new transport modes such as e-scooter, e-bikes and e-cars to facilitate multimodal transport. A shared-bike system is under development and depends on the mutual effort of SUMC, Sofia Municipality and relevant stakeholders. The aim is to provide shared bikes as a feeding transport to the metro and main public transport stops.
Governance related efforts	1 – SUMC doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – SUMC can undertake all the coordination needed to set up this scheme	5	There are comprehensive experiences in SUMC for planning, management and coordination of the work. To integrate the new service with the existing system is a foreseen challenge.
Technical conditions required	1 – SUMC does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – SUMC has all the technical knowledge necessary to set up the scheme	4	The design and development of MaaS will be delegated to an external provider, SUMC will design the tender requirements for the service. Once the product is developed, SUMC and the micromobility operators will provide their data to test the product. SUMC has real time data

			for the public transport vehicle positions, static data for the stops and timetables, data for the available places in P&R facilities and data for the use of Blue and Green parking zones. SUMS will coordinate the relations with stakeholders and manage the process of attracting new micro and shared mobility providers.
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	4	The financing available under the project, includes staff salaries and development of MaaS. The new bike-sharing system is a challenge, and needs to be coordinated with Sofia Municipality and provide necessary funds.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	4	- All relevant local transport regulations; - Delegated regulations (EC) 2024/490; (EC) 2017/1926; Regulation (EC) 2023/2854.
Communication	1 – SUMC does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – SUMC can properly communicate with all stakeholders and citizens	5	There are well-established processes and communication channels with subcontractors, stakeholders and citizens.

Table 13. Sofia's transferability assessment for the selected measures

Condition for implementation – Time needed for implementation	
Practical steps to take:	• Preparation of all available data sets to be shared with the new service; • Negotiation with the micro-mobility operators; • Design of Tender documentation for an external service provider for the development of a journey planner MaaS App; • Deployment and testing of the service; • Monitoring of the results and improvements. • Commissioning of the service.

Timeline:	*May 2024:* 1. *Preparation of Sofia Use case implementation plan* *September 2024:* 2. Meetings all available micro mobility providers and attract them to the new services 2025: 3. Testing and fine-tuning of the service 2026: 4. Commissioning of the new service
Key points to be monitored:	Coordinate the participation of all micro-mobility operators in Sofia. Monitor the testing of the service. Find financing for the shared bike service implementation.

Table 14. Conditions for the implementation of the measures in Sofia

6 Replication Action Plan – Stockholm

Stockholm is one of Europe's fastest-growing cities and has a population of almost 1 million inhabitants. Stockholm's climate work is driven by two key goals; making Stockholm fossil fuel-free and climate-positive by 2040 and making the city administration fossil fuel-free by 2030. The city's plan for how the city will become climate-positive by the year 2030 has been approved by the European Commission through a so-called Mission Label.

Stockholm aims to reduce emissions by 2030 from the transport sector by 80 percent compared to 2010. Measures are taken to reduce private motorist, noise and water pollution and improve the quality of air. At the same time, car traffic also needs to decrease to create a safer and more vibrant city with more space for people instead of cars. More people should be able to choose public transport, cycling and walking. The city works for increased accessibility for walking, cycling and public transport per the city's strategy for accessibility.
The City of Stockholm has published the following documents:

- Environmental program 2020-2023 (Swedish)
- Climate action plan 2020-2023 (Swedish)
- Urban Mobility Strategy (English)
- Stockholm freight plan (English)
- Strategy for public spaces (English)
- Plan for safe and secure school routes (English)
- Stockholm pedestrian plan (English)

Stockholm has multiple objectives related to MOVE21 aiming to reduce journeys by private car by 30% (2017-2030), introduce a zero-emission zone (from 31/12/2024) and achieve an emission-free inner city by 2030, fulfil our commitments as a Climate Mission City and achieve a climate-positive city by 2030, and fossil-free city by 2040. Mobility and transport are central challenges locally, but also regionally, nationally and e.g. on the Scan-Med corridor; there is a need to more closely align national and international infrastructure planning with local and regional needs in the functional urban area. Specifically, we are interested in pilots aiming to enable smarter goods deliveries (e.g. Hamburg's hubs) or pilots addressing electrification; in general, all pilots in the project are interesting to follow. The City of Stockholm is more interested in how implementation takes place than what is implemented or achieved, as significant challenges in terms of e.g. multi-stakeholder cooperation processes, legal or other practical barriers are foreseen and are frequently occurring topics for Stockholm to work on.

6.1 Measure selected

Measure selected
Stockholm planned micromobility hotel solutions within various planning initiatives in the city The major challenge for the implementation is likely the time to secure institutional buy-in from companies that are either operating in the same sectors as competitors and/or companies that have no experience of working together. Stockholm has successful examples, and they found inspiration in replicating and learning from the measure deployed in Gothenburg.
The Micromobility Hotel in Gothenburg consists of three solutions. The first solution is a 'handyman hub' with a fleet of electric cargo bikes for service providers. The second is a 'front-end hub' with a bike repair centre and other micromobility businesses sharing a common space. The third is the continued operation of an existing goods consolidation system.

Table 15. Stockholm's selected measure with description

6.2 Measure – Analysis

6.2.1 Transferability potential

Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	1	1 reflects that the Environment & Health Administration has no role in service provision of this kind and can only disseminate information to other stakeholders. Existing service hubs (for handymen/maintenance, consolidation, repair etc) could have staff resources and possibilities to adapt/adopt the approach developed in Gothenburg.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	3	This solution has been discussed in various planning initiatives in Stockholm. The major challenge to implementation is likely the time required to secure institutional buy-in from companies that are either operating in the same sectors as competitors and/or companies that have no experience of working together. There are successful examples, but no quick fixes. Some real estate owners may be able to push stakeholders into collaboration using leasing agreements etc.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	3	It depends if the solution were to be implemented in e.g. a city-owned parking garage or property, then the municipality would have stronger influence. If not, then municipal influence would be less direct and more as a neutral broker/facilitator.

Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme	4	The score depends on the stakeholder adopting the solution. City departments that own or lease out premises or spaces could conceivably play a role. Stockholm has previously tried to identify under-utilised spaces (e.g. non-commercial spaces, under bridges, caverns, etc.) for use in such initiatives; we also see some experimentation from private actors offering e.g. building maintenance services from their own local hubs. However, moving to a large solution as in Gothenburg requires private sector involvement (see governance). Note that specific challenges e.g. technical specifications of premises can also be a barrier and have implications for financial framework (e.g. we have previously had difficulty identifying spaces for micro-logistics due to ceiling heights in most garages).
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	1	Private funds may be available and theoretically the City may be able to access external funding for pilots. However as yet there is no funding specifically allocated to this activity. Having said that, all city departments and city-owned companies have the task of working to e.g. increase sustainable mobility, increase circularity, reduce emissions, etc. Were politicians to specifically demand this solution, or were civil servants/company employees to develop this solution, then it is possible to allocate funding to it.
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility	5	Same as Gothenburg; there should be no barriers, although different stakeholders may view the practices in different ways.

	or regulatory clarity is already in place		
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	5	The municipality can communicate with stakeholders and citizens and, were the service to be implemented, there would be an incentive for service providers to communicate.
(Include any other factor specific to the project)	1 – Factor is a barrier in your context 5 – Factor is easy to address		There is definitely an opportunity to do something in Stockholm, but it is uncertain which actor should develop and implement; the City's role is likely to be that of facilitator, rather than an active participant.

Table 16. Stockholm's transferability assessment for the selected measure

Condition for implementation – Time needed for implementation	
Practical steps to take:	The example and its possible application could be raised within e.g. the City's discussions and projects related to its zero-emission zone, or as part of service development discussions for densely-populated areas where traffic avoidance/reduction is desired. Further learning from the Gothenburg business model and partnership would be required, to understand how to overcome e.g. practical barriers concerning sharing of costs and physical space.
Timeline:	*Autumn 2024* Share information from Gothenburg with e.g. stakeholders in a new partnership between real estate, transporters, and commercial actors, aiming for zero emission deliveries. Develop a plan for the application for national funding. If possible, apply for national funding for the pilot. *First-half 2025* Secure funding. Identify premises. Conduct analyses and secure customers for services. Prepare legal and administrative structures. *Second-half 2025* Aim for first test and analyses; resolve challenges; plan for upscaling during 2026.
Key points to be monitored:	Initially, to secure support and buy-in from necessary stakeholders; then to secure funding and manage practical issues; then to launch, analyse and resolve "teething problems" so that service can quickly become "normal"

Table 17. Conditions for the implementation of the measure in Stockholm

7 Replication Action Plan – THESSALONIKI

The Region of Central Macedonia is the largest in terms of area and the second most populous region in Greece. The largest city and capital of the region is Thessaloniki, the second-largest city in Greece, where nearly half of the region's population is concentrated. The second-largest city in the region and one of the largest in Greece is Serres. The strategy of Integrated Sustainable Urban Development ITI-SUD of Metropolitan Thessaloniki consists of a vision to build the Metropolitan Thessaloniki of 2030, a modern, smart, green and human city cooperating all together. Fostering an urban renaissance that facilitates the establishment of a sustainable living and working environment, enhancing the quality of life in urban areas.

Main priorities, initiatives and challenges in current transport system

- ✓ Thessaloniki metro is under construction and will be operational in November 2024
- ✓ Establishment of a smart system for integrating the control centres of traffic lights in Thessaloniki, along with the implementation of real scenarios for managing situations (expansion needed to cover the entire area).
- ✓ Establishment of A Competence Centre in collaboration with CERTH/HIT to support municipalities in the development and elaboration of Sustainable Urban Mobility Plans (SUMPs) (https://svak4rcm.imet.gr/)
- ✓ Creation of a central bicycle lane and design of promotional activities to increase the use of bicycles within the city.
- ✓ Procurement of electric vehicles for municipalities and the region, along with the establishment of a charging station network

The expectations to learn from MOVE21 solutions are focused on: 1) How to make our metropolitan area more sustainable and friendly and 2) How to design and implement modal split strategies, with a specific focus on 3) How to assist freight transport within the city using “delivery box” trend, and 4) How to enhance movement through cycling and pedestrian transportation.

7.1 Measure selected

Measure selected - Mobility Hub Network from Oslo, Gothenburg and Hamburg
In Thessaloniki, the metro system is projected to become operational by November 2024, with the first extension of the Kalamaria line (east part of the city) expected to be operational six months thereafter. Currently, strategic metro stations and measures such as the reorganization of bus lines are being developed. This presents an opportunity to implement best practices to enhance mobility hubs.

Table 18. Thessaloniki’s selected measure with description

7.2 Measure - Analysis

7.2.1 Transferability potential

Transferability potential assessment			
Conditions for implementation	**Scoring criteria**	**Score**	**Justification for answer**
Staff availability	1 – No staff available 5 – There are available staff	2	The implementation of this complex mobility project in Thessaloniki necessitates the coordinated involvement of personnel from all key stakeholders, including the Region, municipalities, metro authority, and OSETH. Effective execution will require the reassignment of schedules to allocate staff to the project.
The time needed for implementation	1 – The time needed to set up the scheme is not realistic in my context 5 – The time needed to set up the scheme is perfectly fine	2	Given the complexity of the mobility project in Thessaloniki, it is unrealistic for the region to achieve implementation within the project deadlines. Successful execution necessitates comprehensive cooperation and approval from all stakeholders, including the Region, municipalities, metro authority, and OSETH. Additionally, the project requires alignment with the regional budget, detailed technical project preparation, and procurement processes. These factors, along with other logistical considerations, classify this as a long-term project beyond the immediate timeframe.
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme	4	Given the Region's experience in developing and implementing similar projects, aligning this mobility project with existing governance processes is expected to proceed smoothly without significant challenges.
Technical conditions required	1 – The Municipality does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical	4	The Region possesses the necessary know-how and capability to execute this mobility project, supported by partners like CERTH/HIT in addressing mobility issues. This expertise and partnership enable the Region to manage and implement similar projects effectively.

	knowledge necessary to set up the scheme		
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available	4	The funds required for the project have not been immediately allocated as it was not included in the current year's budget. However, since this project aligns with the Region's policy goals, it is likely to be included in future budgets once it reaches a sufficient level of maturation for financing. Identifying and securing funding for the necessary studies to mature the project is expected to be a manageable task given the Region's experience and existing processes for similar initiatives.
Legislative / regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – A framework to set up the legislative responsibility or regulatory clarity is already in place	3	The reality lies somewhere in the middle. There is currently no established regulatory framework or market maturity for this scheme. Therefore, the project should be initiated as a pilot to address this significant issue and develop the necessary regulations and frameworks through practical implementation and evaluation.
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens	5	The Region benefits from well-established communication networks and processes for technical guidelines, facilitating effective interactions with contractors, stakeholders, and citizens within the region and among local partners. These robust communication channels are essential for ensuring the success of the project.

Table 19. Thessaloniki's transferability assessment for the selected measure

Condition for implementation – Time needed for implementation	
Practical steps to take:	1. Assessment and Planning: Develop a detailed plan with objectives, target areas, and outcomes for mobility hubs. 2. Stakeholder Engagement: Engage stakeholders to gather insights and align with local needs and priorities. Possible stakeholders to be reached for participating in meetings, taking decisions etc: municipalities, freight operators. OSETH, CERTH, Universities, Police, Metro PTA. 3. Site Selection and Design: Identify strategic locations near metro stations, bus routes, and key urban areas for mobility hubs. 4. Infrastructure Development: Design and procure infrastructure like bus stops, bike-sharing stations, electric vehicle charging points,

	pedestrian pathways, shelters, seating, and information kiosks with a focus on sustainability and accessibility. 5. Project Implementation: Execute the development and construction of mobility hubs. 6. Monitoring and Evaluation: Establish metrics to monitor usage rates, user satisfaction, and environmental impact of mobility hubs. 7. Public Awareness: Launch a campaign to educate residents about the benefits and encourage use of mobility hubs. 8. Continued Improvement: Continuously learn from best practices, adapt to changing trends, and leverage technology to enhance mobility hub functionality and efficiency
Timeline:	***September 2024*** *Preparation of the technical report of the project - Stakeholder engagement activities* ***December 2024*** *Presentation of the technical report to the corresponding service of the Regional Council to request financing* ***First Semester 2025*** *Development and approval of detailed project plans - Preparation of tender documents - Announcement of tender* ***Second Semester 2025*** *Evaluation of tenders and selection of contractors - commencement of works* ***2026*** *Implementation and execution of the works - Provision of services as outlined in the project.*
Key points to be monitored:	Technical Report Preparation Stakeholder Engagement Project Planning and Tendering Execution of Works Reporting and Communication

Table 20. Conditions for the implementation of the measure in Thessaloniki

8 Conclusions

One of the ambitions of the MOVE21 project is to demonstrate that the tested and implemented measures can be adapted to different urban contexts beyond MOVE21, thereby proving their transferability to other urban areas. All Cascade cities have identified measures and innovations from MOVE21 Living Labs that they plan to replicate. This selection highlights the need for developing regulatory and planning frameworks that support the upscaling of mobility hubs. Moreover, the integration of diverse mobility and logistics services stands at the core of the replication plans adopted by MOVE21 Replicator cities - Bologna, Munich, and Rome.

This deliverable describes how all the selected replication measures could be implemented in Cascade cities, thus serving as a roadmap to all interested cities and urban nodes to follow transport-related, innovative solutions implemented in MOVE21 cities. The Cascade Cities Action Plans will help the cities and the technical partners follow up on the replication of the chosen measures.

Each Cascade Action Plan details key points that will be monitored. WP7 will check on the advancement of those points each quarter during KEWs, and participants will be asked to provide a short update on the achieved steps, delays (if any) and outstanding steps. In total, three more KEWs will be organised until the end of the project in 2025. KEWs will also focus on innovation capacity in public authorities (Task 1.3), helping Cascade cities in monitoring the progress of selected measures. One webinar planned for 2024 will be dedicated to formulating policy recommendations for the SUMP Topic Guide. All Cascade cities will be invited to participate in online events and the Final conference and Urban Nodes forum in Brussels.

Moreover, based on the results from WP6 and WP7, Task 7.5 will develop a SUMP guide with policy recommendations to help all urban nodes, including Cascade cities, to plan multimodal hubs in the frame of their SUMP.

Annex A – Transferability assessment - scoring criteria

Conditions for implementation	Scoring criteria
Staff availability	1 – No staff available 5 – There are available staff
The time needed for implementation	1 – The time needed to set up the scheme is not realistic to my context 5 – The time needed to set up the scheme is perfectly fine
Governance related efforts	1 – The Municipality doesn't have the experience or capacity to undertake all the coordination needed with stakeholders 5 – The Municipality can undertake all the coordination needed to set up this scheme
Technical conditions required	1 – The Municipality/Metropolitan Area does not have the technical knowledge to set up the scheme and is not able to build capacity or get external support 5 – The Municipality has all the technical knowledge necessary to set up the scheme
Financial framework	1 – There are no funds available to set up the scheme, and no perspective of change 5 – The funds to set up the scheme are available
Legislative/regulatory framework	1 – There are no regulations, market maturity, or other frameworks in place to set up the scheme in my context 5 – Framework to set up the financing scheme is already in place
Communication	1 – The Municipality does not have the experience or capacity to establish communication with stakeholders, citizens, etc. 5 – The Municipality can properly communicate with all stakeholders and citizens