



ACTION PLAN

for implementing sustainable measures for achieving
resilient transportation in

Budapest urban region

The project is being developed within the Interreg Europe Program, with the support of the European Regional Development Fund, co-financed by the European Union and Hungary



Budapesti Közlekedési Központ

May 2019.

1. INTRODUCTION

Transportation in urban areas, particularly metropolitan regions, generates congestion and vast greenhouse gas emissions and thus imposes enormous challenges upon authorities in providing healthy living conditions for inhabitants and a supportive environment for businesses. Thus, the overall objective of the SMART-MR (Sustainable Measures for Achieving Resilient Transportation in Metropolitan Regions; Interreg Europe Programme) is to support local and regional authorities in improving transport policies and providing sustainable measures for achieving resilient low-carbon transportation and mobility in metropolitan regions. To tackle this issue, 10 project partners from 8 metropolitan regions (Oslo, Göteborg, Helsinki, Budapest, Ljubljana, Rome, Porto and Barcelona) have shared their experience in transport and mobility planning by organizing 7 topically interrelated workshops. For each workshop the partners have issued an in-depth analysis, describe good practices and organize a study visit. Practical experience has been presented and discussed, and policy recommendations developed. Through the project outputs, such as the guide Transforming European Metropolitan Regions: Smart Mobility for Better Liveability, selected good practice descriptions, and policy recommendations, and through dissemination events, such as political meetings, the final conference, and regional stakeholder meetings, SMART-MR contributes to Europe 2020 goals, Cohesion Policy, and the Interreg Europe Program by aiding managing authorities and regional and local authorities in setting new transport and mobility policies.

At the level of individual metropolitan region, the partners have used experiences, gained in the SMART-MR, to fine-tune own set of activities and goals, that are fully presented in this action plan.

2. THE MAIN LESSONS LEARNED WITHIN THE INTERREGIONAL EXCHANGE OF EXPERIENCES

The interregional exchange of experiences has followed the steps (workshops), presented in the introduction, where we discussed the seven thematically interrelated topics. The main conclusions of the interregional learning process that took place within the SMART-MR project are presented below:

I. Participatory transport planning

The exchange of experiences in the field participatory transport planning had two main aims – I) to define participatory methodology for the project and II) to elaborate on partners' experiences in order to guide and implement successful participatory planning process at regional level. The main lessons learnt were linked to specifics of the participatory planning at the regional level and to experiences with larger and sometimes unpopular investment projects. Activities at the local level are more concrete and easier to understand, whereas the complexity of tasks rises with the territorial level. This also affects the participation and engagement of the public. At the local level, initiatives often come from residents because they clearly understand the needs of the community and respond appropriately. At the regional, national, and international levels, the issues become more complex and abstract, and they can only be managed by politicians and professionals (i.e., planners and experts), whereas the residents are mostly represented by NGOs or representatives of the civil sector. At the regional stakeholder meetings, we have noticed larger interest of institutional stakeholders whereas we approached the citizens by using e-tools.

II. Regional mobility planning

The lessons learnt already in the first topic (e.g. specificities of the regional level) proved relevant also for the regional mobility planning, where we compared the experiences on preparing mobility plans at the regional level.

To ensure integral and sustainable development of metropolitan regions, a shared vision is crucial. The central issue to be addressed while formulating a shared vision is “what kind of city do we want to live in?” and it should be created by involving all interested parties. A common strategic vision provides a description of the quality of living in a metropolitan region and serves as a guide for developing general spatial planning measures in which mobility and transport are crucial, today and in the future.

Sharing a common vision on mobility between stakeholders and the general public is an essential step in mobility planning. It should contribute to balanced and sustainable development of the environmental, economic, and social components of the territory and thus to a higher quality of life. It is also important to balance the level of the vision (and ambition) in a plan with the level of realism, consisting of what can actually be implemented during the timeframe of the plan.

This process needs to take into account the existing multimodal transport system, its conditions, and performance. It should also take into consideration land-use planning and factors that may affect the future of the area and the future performance of the transport system, including the availability of financial resources.

Multiple scenarios should be developed, indicating possible alternatives. Each alternative scenario is compared to the reference scenario, including the interventions currently being implemented and to be implemented within the given timeframe.

In a long-term perspective, the objective of the mobility plan is to provide a safer and more efficient mobility system. It also ensures an environmentally, economically, and socially more sustainable system of mobility, especially when the actions contributing to the aforementioned objective are identified during the creation of the plan together with institutions, stakeholders, and the general public. The mandatory monitoring of the plan involves measurement of the indicators linked to each individual action every two years.

The actions to be applied concern:

- Integration between the various transport systems (redistribution of the transport network in favour of public transport, pedestrians, and cyclists, strengthening interchange nodes);
- Improvement of public transport provision (lanes reserved for public transport, increase of accessibility to public transport for passengers with reduced mobility, and use of information communication technologies (ICT) to improve public transport management);
- Development of pedestrian and bicycle mobility (creation of cycling routes and services for cyclists);
- Introduction of shared mobility systems (shared mobility equipment at train or underground stations, transit and parking facilities for shared mobility, and promotion of shared mobility in public bodies and companies);
- Use of low-pollution vehicles (installation of electric charging stations, and replacement of vehicles for passenger and freight transport with electric vehicles);
- Rethinking urban logistics (changing the collection and distribution of goods in urban areas in order to reduce traffic and pollution, and redistributing the road capacity for improved flows of goods vehicles);
- Dissemination of the culture of safe mobility (improving the most dangerous road network, creating stops and protected sidewalks for pedestrians, and protected bicycle lanes).

On general, we underlined the use of the Avoid-Shift-Improve approach, which is used to address increased transport demand in a more sustainable way (GIZ-SUTP 2012):

– “Avoid” refers to the need to improve the transport system’s efficiency, reducing the need to travel and the length of the journey through integrated land-use planning and transport demand management.

– “Shift” instruments attempt to improve the efficiency of the journey through a modal shift from the most energy-consuming (i.e., cars) to more environmentally friendly urban transport modes:

1. Non-motorized transport such as walking and cycling: these are the most environmentally friendly option;
2. Public transport such as buses, trains, and so on; although public transport generates emissions, lower specific energy consumption per km and higher occupancy levels mean that the associated CO₂ emissions per passenger/km are lower when compared to cars.

– The “Improve” component focuses on vehicle and fuel efficiency as well as on improving transport infrastructure; it seeks to improve the energy efficiency of transport modes and vehicle technology. Furthermore, the potential of alternative sustainable energy use is encouraged.

III. Low-carbon logistics

The long-term actions and impacts of low-carbon logistics planning mainly focus on the reduction of transport externalities and vehicle movements, as well as improved acceptance and understanding of commercial activities in metropolitan regions. Thus, low-carbon logistics planning must become part of transport planning, which so far has not been particularly common.

First, long-term reduction in carbon emissions and improvement of air quality can be achieved from reduced vehicle movements. Therefore, to reduce freight traffic in metropolitan regions the total demand for freight transport must decrease or deliveries must become more efficient. Efficiency can be achieved through implementing solutions that increase load factors; for example, consolidation. Additional emission reductions can be expected from the transition to cleaner fuels and the introduction of eco-friendly vehicles for deliveries.

The second long-term benefit of low-carbon logistics planning is improved acceptance and understanding of these activities among all stakeholder groups. Increasing this acceptance might result in opportunities for shared infrastructure because stakeholders then become aware of the needs of the business sector. Another benefit is more effective and consensus-based stakeholder collaboration, which in the end provides a valuable framework for decision-making and policy implementation. Whereas the municipality traditionally focuses on social and environmental issues, businesses emphasize efficiency, accessibility. Authorities also have the opportunity to guide industry by changing their own delivery and procurement practices, either by having deliveries performed by one single operator or by imposing requirements of zero-emission vehicles on operators delivering their goods. Improved knowledge of the private-sector needs helps improve the quality of public planning, and the best solution is based on the compromise achieved when the municipality knows the needs of businesses and the general public.

Finally, metropolitan regions are facing rapid changes in the transport sector due to digital and technological developments. With these changes in mind, long-term logistics planning and efficient public-private collaboration will improve the commercial potential of sustainable distribution solutions and provide more efficient management of freight traffic in metropolitan regions, which in turn will help reduce emissions.

IV. Development of and around transport nodes & V. Low-carbon urban areas

Transit corridors, especially rail-based corridors, are vital for urban development. Station areas are recognized as a development priority in terms of mobility, urban development, and climate targets. They are the starting points for transforming the urban environment from low-carbon station areas to low-carbon metropolitan regions.

Station areas or public transport hubs are the key focus for transit-oriented development (TOD). The TOD main drivers are reduction of car use and reducing congestion and pollution by avoiding urban sprawl. At the same time, TOD aims to increase regional accessibility by acquiring well-connected and affordable land for development in transport corridors.

TOD integrates transport and land-use planning, but at the same time it is a narrow concept that focuses on transport and how to make transit as effective as possible. It is defined as an area that has a compact and dense design with both housing and services within walking distance of public transport and with regional connectivity. Thus, TOD economizes mobility by decreasing the need for travel and by making possible efficient provision of public transport. In addition to TOD, there is a need for a broader perspective for community and low-carbon development, both in densifying the existing urban area and in creating new station areas.

The new development concept creates the need to redefine TOD. Supported by the study “Sustainable Density in Station Communities” (Nordström, Swartz and Stähle 2017), recommended density for exploitation used by UN Habitat (2015) is added.

The aim of the sustainable densification and compact areas is both to increase the population within the given space and also to maintain a well-defined division of land use that ensures that a high-quality and accessible urban area with an optimal land-use mix is obtained (Figures 1 and 2).

Figure 1: Example of efficient distribution of land use (Nordström, Swartz and Ståhle 2017).

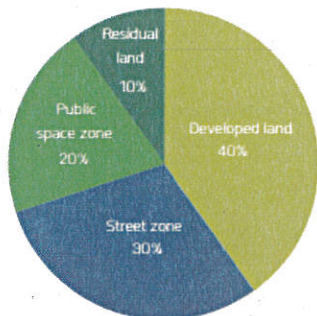
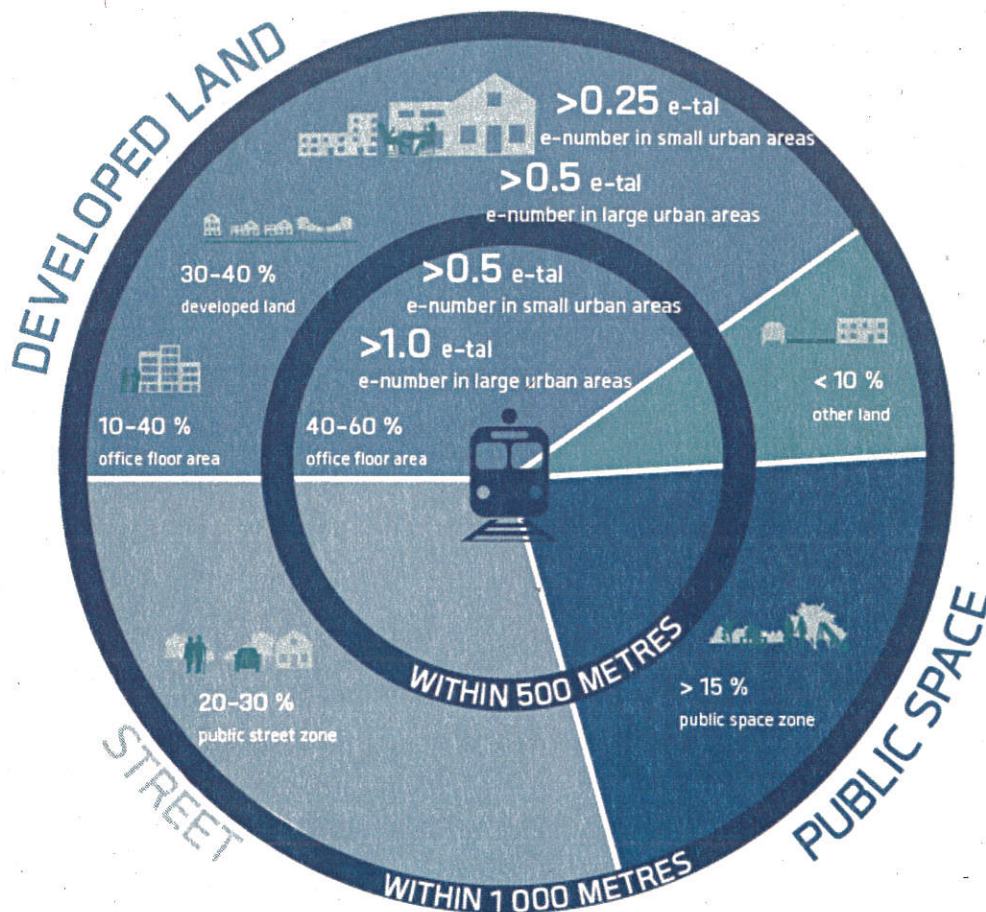


Figure 2: Land-use recommendations (Nordström, Swartz, and Ståhle 2017).



Thus the SMART-MR project developed a new methodology named Liveability-Oriented Area Development (LOAD).

LOAD is proposed to use what is commonly considered a sustainable development perspective, combining the three dimensions: economic, environmental, and social development.

LOAD is defined by an area developed with dense housing, mixed use, and liveability targets that create attractiveness.

LOAD uses a methodology that is based on UN Habitat's guidelines.

LOAD recommends considering these guidelines as an inspirational tool for development and using the set principles outlined as goals.

LOAD proposes a flexible attitude for how to reach these goals at the local level, adapting recommendations to unique circumstances but with the overall goals in mind.

The LOAD concept, from the perspective of efficient land use and the land-use mix in station areas, is recommended to be applied both for pre-existing station areas when complementing urban structures and for new station areas when planning land use. According to LOAD with a low-carbon development aspect, the building stock in station areas should consist of energy-efficient multifunctional buildings with businesses integrated with housing. Housing should also be mixed; that is, station areas should provide different types of housing supply for people's different needs. It is also important to increase affordable housing near stations. Increasing the amount of housing stock and residents improves the ability of services to enter the region and increase their profitability. All this requires close joint planning of land use, housing, and mobility.

At the workshop on low-carbon station areas additional concept for low-carbon station areas has been developed for assisting planners to meet climate targets. The concept will help cities develop low-carbon areas both in existing urban structure as well as in planning new station areas. In the concept, there are four perspectives on low-carbon station areas – land use, housing and living, mobility, and businesses and services – and there are four cross-cutting themes: climate change mitigation, resilience, a circular economy, and social sustainability and health. In addition, technology integration and leadership are recognized as essential parts of transformation. Nearly seventy different criteria will help planners and city developers transform low-carbon areas step by step (Figures 3 and 4).

Figure 3: The low-carbon district toolkit for station areas includes planning criteria in four themes and four crosscutting perspectives.

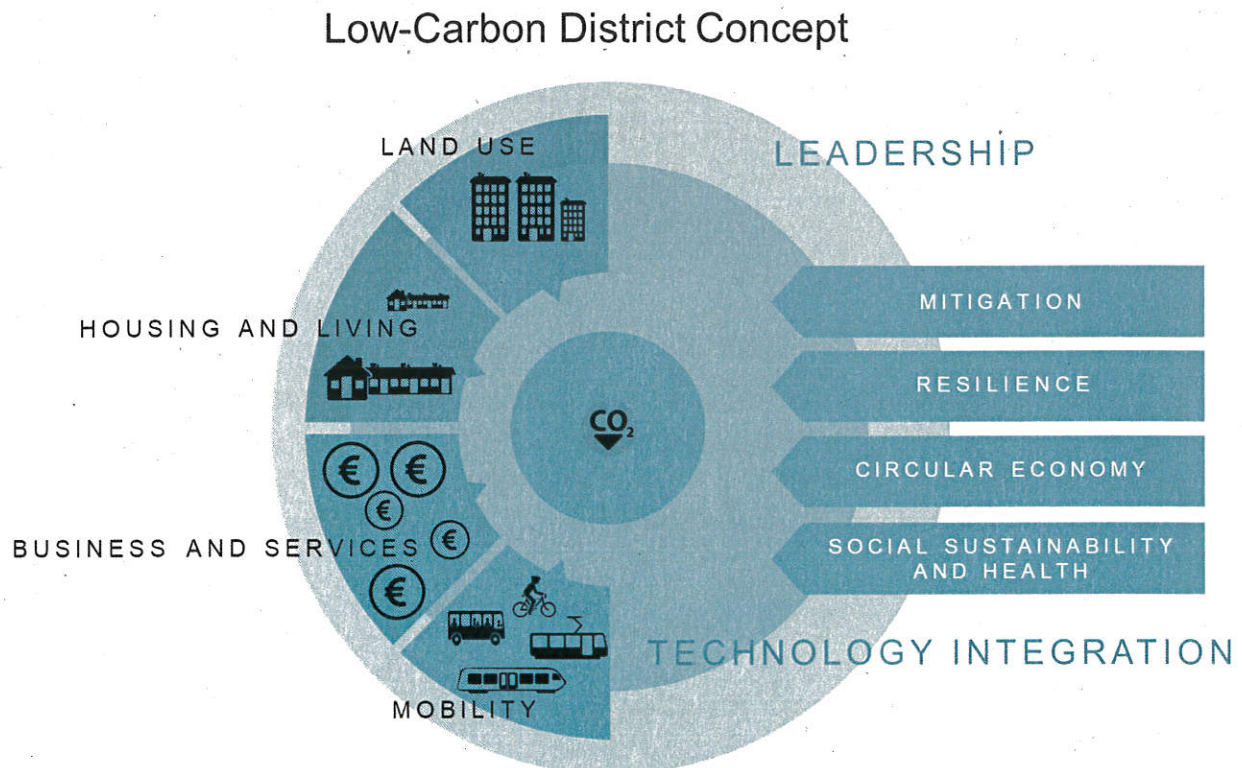
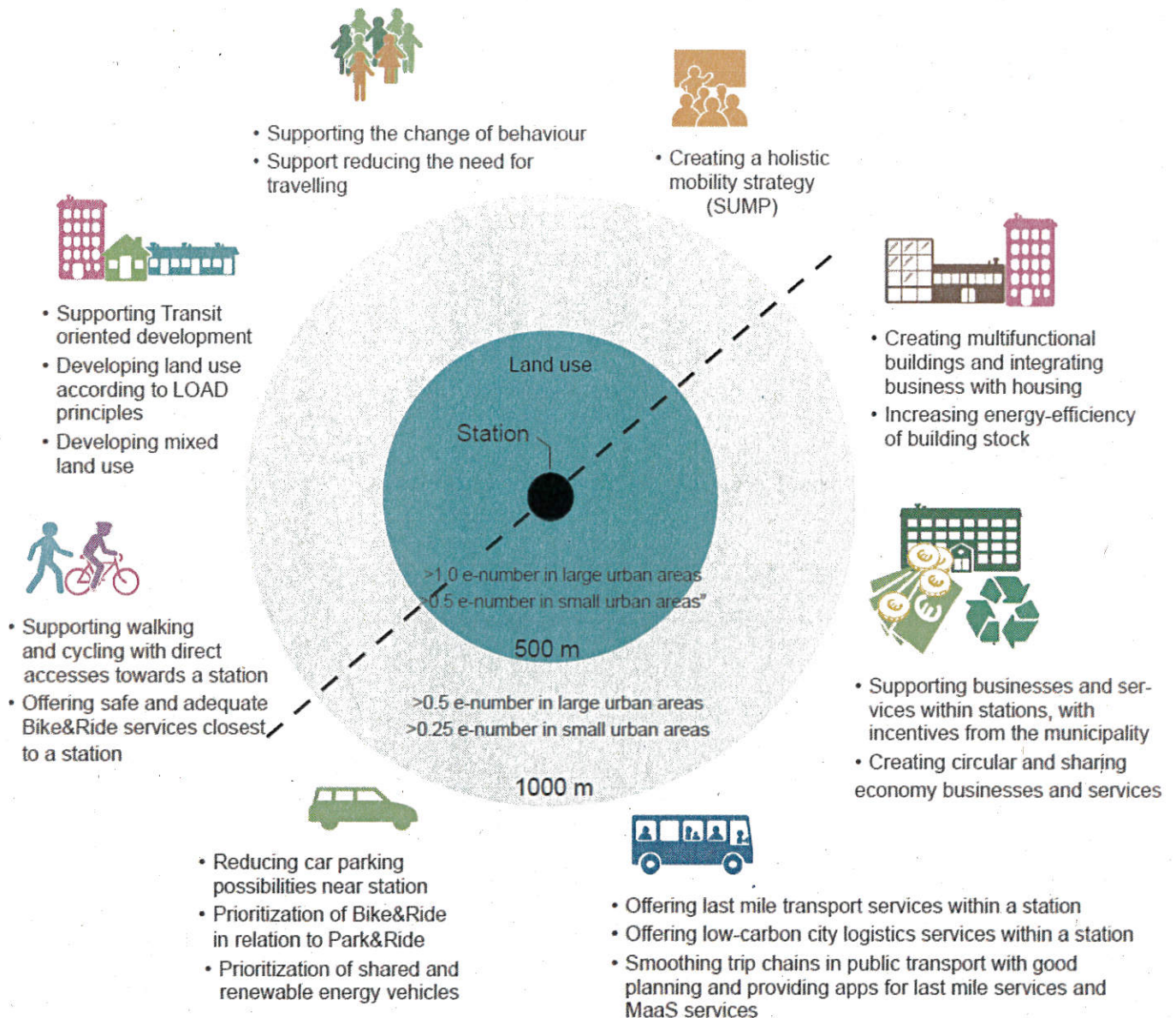


Figure 4: Low-carbon district toolkit for developing climate-friendly station areas.



From a business operational viewpoint, stations have much untapped potential as a marketplace. Improving and strengthening services at station areas will increase the added value of trip chains, will make rail transportation more attractive, and will also reduce the need for travel. Enhancing the service palette of the stations makes people's everyday lives easier and encourages movement toward low-carbon mobility. Last-mile transport services, low-carbon city logistics services, and MaaS services within a station also reduce emissions. A vibrant station area also makes a sharing economy possible. Sharing and circular economies and new models of ownership can be seen as a means to reduce consumption.

The public sector is considered to have a key role in encouraging and facilitating companies to locate themselves close to stations and introduce new types of low-carbon business operations. New business operation models may result from new types of public-private partnerships. The public sector is also seen in encouraging and facilitating the public's initiatives. Social sustainability is an important theme in developing liveable oriented station areas.

If the active development of station-based services is further enhanced, the added value of the trip chains can be strengthened and people can be encouraged to use public transport. Developing station areas as small hubs for

city logistics can be part of modern e-commerce and its logistics can be handled in a centralized way to reduce number of trips.

The development of public space and safety are considered key measures for improving station areas. Upgrading public space in particular is the most focused measure to be taken to increase station areas' usability, also from the perspective of safety.

Locating services centrally on ground floors at the station and nearby will also increase social activities and enhance safety. As a minor measure, increasing smart and energy-efficient lighting and enhancing underpasses and overpasses will also increase the feeling of safety.

VI. Managing transportation & VII. Sharing economy:

The backbone of a metropolitan region's transport system should be public transport, which is one of the most effective and sustainable ways of moving people in metropolitan regions – also in the long term. Public transport should be accessible, reliable, and comfortable, in most cases having electrically driven track-bound modes on the main lines with high capacity. In the long term, public transport should be decarbonized, phasing out diesel buses. However, this is not so easy at the moment because current electric bus operational models face many uncertainties. Currently, electric buses have low ranges and charging requires significant time. Trolleybuses could be a good option, especially in cities, where they are already available, because the basic infrastructure is quite expensive. Nevertheless, metropolitan regions' mobility strategies' target of zero-emission buses by 2030 is contingent upon improving battery and charging technology.

An important option for decarbonizing transport is to enhance walking and cycling as soft transport modes because the cleanest modes are those that do not require any energy except manpower. Even better is to reduce transport needs with appropriate land-use planning, the help of new communication technologies, work from home, and so on.

With the future development of autonomous vehicles, parking problems could be partially solved; however, this will not help reduce road transport. The same also applies to electric cars, which do not reduce congestion.

Autonomous vehicles are already available in public transport (mainly in the underground system); tests with autonomous trams and buses are ongoing (Figure 17). Their penetration into individual transport will cause enormous changes in the transportation system, which are not yet fully predictable.

There is a need for integration between the city and region regarding transport management, between different sectors, and also between service providers. A new manner of integration is realized in the Mobility as a Service (MaaS) system, in which a joint platform has been set up to integrate planning and managing trips together with buying and validating tickets.

A future challenge of managing transportation is to find the right mix between various transport modes, shared solutions, and autonomous vehicles in order to cut greenhouse gas emissions and create a liveable urban environment without limiting mobility options.

In the traditional mobility paradigm, the modal split is based on the majority of people using cars, followed by those using public transport, and on a small scale people that walk, bicycle, or use other transport modes.

The sharing economy could be a good way to increase the efficiency of public transport because it allows rapid change of this mobility paradigm: from car ownership to car sharing, from owning a parking space to sharing different parking spaces, and from one solution to go from point A to point B to a multiplicity of solutions in the palm of the hand (on a mobile phone). Public transport, car sharing, carpooling, bicycling, bike sharing, walking, and so on – different transport solutions, different providers, and the flexibility to make the decision on the transport mode according to the needs of each moment and with access to all the real-time information – allow people to make the best choice.

New business models in the sharing economy with their collaborative platforms, using transport digitalization, with access to big data, are changing the way people move. The main outputs of this change should be fewer cars, less congestion, and less pollution.

This allows cities to have much more space dedicated to people than to cars, permitting people to use public space to have fun, to play, to live with each other – in other words, to be happier.

Sharing solutions combined with autonomous vehicles could also be a good solution, especially for low-density areas.

Proper planning and regulation of new (sharing) business models in mobility can supplement existing public transport with new solutions for better mobility and at the same time promote fair competition between different companies, allowing traditional business to thrive in identical conditions as new ones. It is important to never forget that the target is to have fewer cars, and in the majority of cities this requires efficient public transport that allows the transportation of significant numbers of people.

3. THE INDICATIVE LIST OF ACTIONS LEADING TO GREATER LIVEABILITY IN EUROPEAN METROPOLITAN REGIONS

Field of intervention	Activity	Short-term effects/wins	Long-term effects/wins
Participatory transport planning	Public consultation	<ul style="list-style-type: none"> – New local knowledge and possible tailor-made solutions from stakeholders – Awareness raising – Mutual learning 	<ul style="list-style-type: none"> – Better quality of plans/strategies – Higher public acceptance
Creating a mobility plan	Promotion and implementation of interventions to organize and manage the demand for mobility of people and goods	<ul style="list-style-type: none"> – Broad commitment to the principles of sustainable mobility – Involvement of relevant people 	<ul style="list-style-type: none"> – Lower environmental impact deriving from traffic
	Regulation of access in some zones (and/or parking)	<ul style="list-style-type: none"> – Fewer cars – Lower pollution/emissions – Less noise from traffic congestion 	<ul style="list-style-type: none"> – Shift to public transport – Lower environmental impact from mobility
	Support for intermodal nodes and infrastructure planning for both passengers and freight	<ul style="list-style-type: none"> – Multimodal approach to travel – Optimization of the use of means of transport (more passengers on each means of transport) – Less traffic – Less pollution 	<ul style="list-style-type: none"> – Improvement of mobility – Improvement of resilience of the transport system (through multimodality) – Lower environmental impact from mobility – Better traffic flows
	Informatization of mobility, provision of real-time data on public	<ul style="list-style-type: none"> – Optimization and simplification of multimodal travel 	<ul style="list-style-type: none"> – Shift to public transport – Improvement of resilience of the

	transport and traffic; integrated ticketing systems on mobile and personal devices		transport system (giving best solutions in real time for travelling) – Lower environmental impact from mobility
	Promote diffusion of and experimentation with collective services such as car sharing, carpooling, bike sharing, etc.	– Optimization and simplification of travel in modal shifts – Fewer cars – Less congestion	– Improvement of mobility – Lower environmental impact from mobility
	Increase in the size of areas and uninterrupted paths for bicycles and pedestrians	– More soft mobility – Fewer cars – Less noise from traffic congestion – Better and healthier quality of life	– Improvement of mobility – Shift to soft mobility – Lower environmental impact from mobility
Low-carbon logistics	Planning low-carbon logistics – Multilevel governance – Involvement of stakeholders	– Shift to low- and zero- emission vehicles – Better use of existing infrastructure – Improved terminal structure – Shared data on freight	– Reduction in carbon emissions – Better air quality – Better acceptance and understanding among all stakeholder groups
	Low-carbon last-mile pilot projects: – Establish consolidation centres for last-mile freight – Transition to e-vehicles in last-mile freight – Transition to bikes in last-mile freight – Extended use of ICT tools – Reduce kerbside parking for private vehicles	– Reduction in freight transport by vans – Better use of existing infrastructure – Modal split in favour of cargo bikes and e- vehicles – Improved efficiency in loading/unloading – Reduction in “search traffic” – Improved accessibility for deliveries	– Reduction in carbon emissions – Better air quality – Better use of existing infrastructure
	Establish charging infrastructure adapted for freight vehicles (vans)	– Transition to e-vehicles in last-mile freight	– Reduction in carbon emissions
	Establish low-/zero- emission zones	– Modal split in favour of cargo bikes and e- vehicles	– Reduction in carbon emissions – Better air quality

Managing transportation	Improving mobility solutions	<ul style="list-style-type: none"> – Better mobility options – Accessible, reliable, and comfortable public transport 	<ul style="list-style-type: none"> – Lower greenhouse gas emissions – More public space for people
	Park-and-ride solutions	<ul style="list-style-type: none"> – Increased parking capacity in station areas – Fewer cars entering the inner-city area 	<ul style="list-style-type: none"> – Decreased congestion in the city centre – Healthier environment
	Introduction of alternative fuelled buses	<ul style="list-style-type: none"> – Cleaner diesel engines with reduced emissions – Hybrid technology for less fuel consumption 	<ul style="list-style-type: none"> – Zero-emission buses for lower GHG emissions – Healthier environment
Sharing economy	Promotion of the sharing economy	<ul style="list-style-type: none"> – New and innovative business models 	<ul style="list-style-type: none"> – More mobility solutions
	Regulating the sharing economy	<ul style="list-style-type: none"> – Fair competition – Integration of new business providers with public transport (mobility as a service) – Allowing and encouraging sustainable new solutions and models 	<ul style="list-style-type: none"> – Sustainable mobility – Wellbeing of people
	Integrating sharing mobility solutions with public transport	<ul style="list-style-type: none"> – Enables travellers to gain access to public transport on an as-needed basis – Last-mile solutions 	<ul style="list-style-type: none"> – Public transport sustainability
Transit-oriented development	Definition of "Liveability-Oriented Area Development" (LOAD) methodology	<ul style="list-style-type: none"> – Integration of spatial and transport planning – Co-creation of the neighbourhood 	<ul style="list-style-type: none"> – Higher regional accessibility – Reduction of car use – Reduction of congestion and pollution
Shaping low-carbon areas	Promoting use of the low-carbon district concept	<ul style="list-style-type: none"> – Lower emissions from the transport sector – Liveability of station areas – New businesses 	<ul style="list-style-type: none"> – Sustainable urban structure – Contributes to achieve regional low-carbon targets – Promoting low-carbon modes of transport
	Supporting new services in stations	<ul style="list-style-type: none"> – Added value to trip chains – Improved social safety 	<ul style="list-style-type: none"> – Vital and attractive stations

4. ACTION PLAN

Part I – General information

Project: **SMART-MR: Sustainable Measures for Achieving Resilient Transportation in Metropolitan Regions**

Partner organisation: BKK Centre of Budapest Transport

Other partner organisations involved (if relevant):

Country: Hungary

NUTS2 region: Central Hungary / Közép-Magyarország (HU10)

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Part II – Policy context

The Action Plan aims to impact:

- x Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

Name of the policy instrument addressed: Integrated Transport Development Operational Programme 2014-2020 (mentioned as IKOP in the following text)

Part III – Details of the actions envisaged

ACTION 1: Institutional developments for an enhanced regional cooperation

1. The background

In the project we have learnt about the importance of regional cooperation in the field of transport management. There are several good examples of successful cooperation within Europe and among the SMART-MR project partners, in which the entire city and the surrounding region have some kind of integrated institutional systems in order to solve cross city-border transportation issues. In some cases, where the region would be too big to effectively handle mobility problems of the metropolitan region, smaller entities, so called metropolitan level institutions have been created (e.g. in Barcelona and Porto) to act for more sustainable mobility solutions. These entities strive for an integrated public transport service, in most cases integrating regional rail, and regional bus services with local public transport, establishing unified fare and ticketing systems in the region, enhancing walking and cycling to achieve a shift towards sustainable transport modes.

The current transport-related institutional system of the region of Budapest is remarkably fragmented. The conflicts of interests between the municipalities, even within the capital city contribute to the divided and fragmented institutional system to a great extent.

The reform of the transport-related institutional system of Budapest (i.e. the establishment of the integrated transport management body of BKK in 2010) could not make up for the lack of regional integration. At the very most, it was able to mitigate some of the symptoms (e.g. bus services linking suburban areas). After 2014 sectorial disintegrational processes have been started as a consequence of the reorganisation of BKK (e.g. the separation of some suburban rail services). Recent developments, such as the establishment of a new council (FKT, Fővárosi Közfejlesztések Tanácsa – Council for Public Investments of Budapest) in November 2018 outline a closer cooperation between the Municipality of Budapest and the government in terms of development projects. However, one must note that there would also be a great need for a close cooperation in the area of service provision as well.

With the aforementioned institutional characteristics, the capital region cannot handle the constant transformation of the functional city (i.e. city evolution, development trends and their transport implications). From a functional aspect the city has overstepped the mark of the city border a long time ago and the fragmented institutions can only follow these on-going dynamic changes to a very limited degree. The lack of regional transport integration manifests itself in inappropriate regulations, insufficient services, fare and information systems. IKOP contains development projects for the region, however their realization is split into national and local stakeholders, resulting in insufficient coordination and the conflict of different interests of the city and the region.

As a consequence of the fragmented institutional system and the lack of appropriate communication and cooperation between institutions, institutional and public consultation of transport-related development projects, services and measures with a regional relevance have been very limited so far. Consultation processes, if any, has only been implemented in an ad-hoc manner, usually coordinated by one single actor.

2. Action

Overcoming the mentioned problems of the capital region's transport system requires strategic thinking and planning on a regional level. The extension of the scope of territorial thinking in transport planning could contribute not only to the improvement of the transport system due to better coordinated and regionally valid projects in IKOP but social and economic development as well.

Regional transport management could harmonise sectorial and territorial strategies finding a clear and transparent link between national and local strategies, implement integrated service provision, regionally coordinated development projects of IKOP and a unified fare and communication system. That could contribute to the efficiency of network developments (e.g. suburban railway services), the improvement of service provision (e.g. with the

harmonisation of timetables and connections) and regulation systems (e.g. parking regulations), which are all relevant for the entire IKOP.

The following actions can support the creation of a regional transport management system:

- A comprehensive overview of the current institutional, operational and legal background of transport infrastructure and service provision in the region,
- An overview of international best-practices of transport systems and institutions' regional integration,
- Analysis of the feasibility of different best-practices,
- Enhancing the communication and cooperation between relevant stakeholders – realising a consultation process about regional transport issues.

The evolvement of the regional transport management system can significantly enhance the efficiency of operating and developing the transport system of the metropolitan region. In the short term, even during the period of analysis and formation, the progress of stakeholder cooperation and communication can improve the realisation of various IKOP projects and the whole programme as well. In the long term, the possible impacts could go well beyond IKOP and subsequent operational programmes, assisting further development.

3. Players involved

Prime Minister's Office, Ministry of Innovation and Technology, Municipality of Budapest, Municipalities of the districts of Budapest (23), Municipality of Pest County, Public transport operators in Budapest, Regional and national public transport operators, Budapest Közút Plc., BKK Plc.

4. Timeframe

2019 Q2 – 2021 Q1 (24 months)

5. Costs

Carrying out the mentioned actions (analyses and consultation) might require approximately 50,000-100,000 EUR, while establishing a regional transport management body might require approximately 15-30 million EUR (mostly for IT developments, operational tasks and extra consultation), plus operation cost of the system can alter.

6. Funding sources:

Own sources of the involved institutions. The action would affect the whole metropolitan regional part of IKOP (3.1) financed by ERDF funds of 680,6 million EUR.

ACTION 2: Establishing the basis of a regional SUMP-based policy and strategy-making process

1. The background

During the project, we have learnt about the importance of regional SUMPs. With regard to the factors which most influence planning is the integration and harmonisation of the mobility plan with other types of plans (land use planning, financial plans, etc.) and with plans at different levels (regional, local, etc.): each responsible authority should take into consideration all levels of planning as well as other sectorial plans. It's also important that regional plans have enough indications to be implemented in the local plans. Each of them should be a "dynamic plan" which can be updated whenever there are important changes (technological, political, etc.); and innovative measures may be tested through gradual and flexible implementation, used as pilot actions. Another important issue is the link with financial planning and relevant budgeting. We also learned that cost-benefit analysis should be used where possible, but special attention has to be given to the selection of variables.

Hungarian transport policy lacks for independent appearance on the regional level. Therefore, transport development projects with a regional relevance (e.g. in the project list of IKOP) are often given little attention in national and local planning processes. However, regional territorial conflicts can be identified in case of many national projects, and relating impacts are often neglected. While regional development needs can be identified on a local level as well, the lack of competence often impedes acting. Due to these problems regional projects are frequently dropped back on priority lists and cannot be the part of IKOP, as co-ordinational problems arise. Besides, the selection of regionally important national projects for the IKOP project list has never been transparent nor definite. Covering the missing regional link in strategy-making processes represents a potential way to overcome many transport-related problems and enables to create a validated project list for IKOP by all relevant stakeholders.

2. Action

The methodology of Sustainable Urban Mobility Planning (SUMP) offers an adequate solution for bridging the gap between national and local transport policies. Applying SUMP on a regional level could certainly help to face the challenges of the dynamically changing urban region of Budapest. Such a SUMP-based policy includes the determination of strategic goals on a regional level, the specification of relevant measures and the selection of projects of the IKOP project list supporting the achievement of strategic goals. The prioritisation of project proposals based on a unified and complex appraisal method, using CBA, MCA analysis, feasibility analysis and fit tests towards SUMP goals could enhance the efficiency of IKOP project implementation. The methodology of SUMP is able to provide a framework that can increase transparency offering an efficient and prudent way to handle the permanently arising need for modifications (e.g. in connection with cost overruns of on-going projects, projects that are becoming unfeasible, or changes in policies or priorities) and thus contribute to a more efficient IKOP.

The following actions can support the realisation of a regional transport policy:

- An overview of the current policy and strategy-making processes including project generation and selection practices,
- Analysis of the strengths and shortcomings of existing practices,
- Creation of the possibility of communication among relevant stakeholders by either organising workshops or launching online consultation about the importance and ways of strategic planning on a regional level,
- An overview of international best-practices in relation to regional strategy-making and project selection procedures,
- Analysis of the feasibility of different best-practices.

The experiences of IKOP and the transport strategy planning process of the capital city of Budapest (BMT) could also support the realisation of a SUMP-based regional transport policy to a large extent.

3. Players involved

Prime Minister's Office, Ministry of Innovation and Technology, Municipality of Budapest, Municipalities of the districts of Budapest (23), Municipality of Pest County, National Infrastructure Development Plc., Public transport operators in Budapest, Regional and national public transport operators, Budapest Közút Plc., BKK Plc.

4. Timeframe

2019 Q2 – 2021 Q1 (24 months)

5. Costs

Approximately 50,000-70,000 EUR for the initial actions of overview, analysis and consultation, later on the cost of the whole regional strategy-making could be approximately 1 million EUR

6. Funding sources:

National sources for implementing the action. In case the regional SUMP would contain the whole metropolitan regional part of IKOP (3.1), the action would influence ERDF funds of 680,6 million EUR.

ACTION 3: Application of the CONSUL platform for institutional and public consultation

1. The background

In the project we have learnt about the importance of participatory transport planning. Participation process in transport planning is essential – but the participatory processes differ from country to country (culture to culture) and also differs according to what we want to achieve. In some cases, participatory planning is not realistic, in some cases it is wide-scale and in some only small-scale. Project partners agreed that this process is particularly challenging and not easy. Opinions varied on the topic of 'too much participation'. But we agreed that the level of participation depends on the scale – local transport projects can include a wider variety of the general public, while at regional scale the participation might be limited to key stakeholders and their representatives. It was also agreed that this latter kind of planning is long-term and it takes more time than conventional transport planning. Participatory transport planning is much more difficult at big-scale regional projects, since they are often more complicated and are difficult to comprehend by the general public. The legislation also plays a significant role, since projects in some countries are constricted by rigid legislation and procedures that cannot fully support participation process. Hence, participatory planning should be institutionalised at the regional level. In this process stakeholders should be carefully selected, including the political actors and the media. The politicians and important policy and opinion makers should be invited extra to the planning process, even in the preparation phase. The public should be informed about the planning process at the earliest stage but politicians should participate from the very beginning to be able to better understand specific objectives and solutions and to avoid conflicts later on. Planners should present different alternatives and explain pros and cons of each solution. A good mediator familiar with participatory techniques should lead the process and should communicate planning goals and activities in 'familiar' language, close to the general public. Extra care should be made to invite the disadvantaged groups to the process as they are usually poorly represented by the NGOs or similar organizations but are important users of the transport system.

Based on the analysis of IKOP, the learning process in the project and a benchmarking analysis of different consultation tools, CONSUL (<http://consulproject.org/en/>) has been selected as an adequate platform for institutional and public consultations. It enables the creation of an online platform with a consistent layout and functionality. Having adopted the tool, an initial public consultation process has been carried out focusing on IKOP projects. The results of the survey have confirmed the applicability of the tool and its selected and applied functions for public consultation. Moreover, a few conclusions have been drawn concerning the applied methodology and the need for more detailed data on an extended sample. As an example, one of the most striking conclusions was the importance of using the budgeting feature of CONSUL, as it has revealed that forcing people to take financial costs of projects into consideration do rearrange their preferences.

2. Action

Further developing the selected and applied tool and implementing a more sophisticated consultation process could certainly contribute to the efficiency of IKOP and possibly to other transport-related programs and policies as well.

The extension of the consultation process is recommended to concentrate on the broadening of the size of the sample, on the inclusion of a wider range of local and regional transport development projects into the consultation process and on the implementation of an institutional consultation as well. CONSUL is able to support these criteria offering a framework for consultations on different levels in different depths with various functions such as commenting (debating), voting, and budgeting. The use of this effective tool if supported with a good communication campaign reaching wide range of public can contribute to the efficiency of IKOP.

3. Players involved

Prime Minister's Office, Ministry of Innovation and Technology, Municipality of Budapest, BKK Plc.

4. Timeframe

2019 Q2 – 2021 Q1 (24 months) + beyond

5. Costs

Negligible cost of operation and approximately 10,000-30,000 EUR for further developments.

6. Funding sources:

Own sources of the involved institutions. ERDF funds affected depends on the list of projects put onto consultation. It can be the whole IKOP projects list, or a part of it. A smaller list of projects (10-20) is easier to put onto public consultation, than a list consisting of 60-100 projects.

ACTION 4: Proposals on procedure control to enhance efficiency of operative programmes

1. The background

In the project's learning phase we realised the importance of the institutional consultation as part of the participation process. We conducted several consultations with the relevant stakeholders affected by IKOP within the region. Based on the interregional learning in phase 1 of the project and consultations about operational experiences of the Hungarian EU-funded operative programmes (mainly IKOP), several efficiency problems could be identified in the Hungarian practice of the procedure.

These are connected to:

- Lack of pre-financing mechanisms mainly in the preparation phase of operational programs, which could enable a better preparation of high value infrastructure development projects. Without the pre-financing possibility of analysis, the ranking of projects is not well founded as not enough data for financial demands, technical details and timing is available.
- Missing possibility of inter-programme financing of complex projects leading to efficiency problems. Larger projects with longer implementation period, or projects affecting different stakeholders are harder to realize due to procedural difficulties.
- Weak pro-subsidy requirements leading to urging maintenance-based projects instead of real developments. Projects for maintaining existing infrastructure (e.g. existing metro lines) have higher priority than developments, resulting in skipping or very much limiting the realization of the latter due to lack of financial sources.

2. Action

In order to enhance the efficiency of operative programs, such as IKOP, the following three topics are recommended based on the examination of project results and the discussion among relevant stakeholders:

- The possibility of a pre-financing mechanism that could help the implementation of highly-regarded projects with larger investment needs due to pre-financing of analyses leading to better availability of data about financial needs, technical requirements and time necessary. The pre-financing would be needed mainly in the preparation phase of operative programs in order to enhance the quality of project lists, resulting important projects not be thrust into the background due to the lack of funding.
- The possibility of a mixed (inter-programme) funding could support the financing mechanism of the implementation of more complex projects, affecting more than one sector. Also the potential to part bigger projects into sections for different programming periods would result in a better efficiency of the IKOP.
- The possibility of determining stronger pro-subsidy requirements for a number of projects would change project rankings. For certain priorities of the operative programmes pro-subsidy requirements (e.g. life-cycle cost thresholds, operation and maintenance practices) could rationalise project design, operation and the use of financial resources. The purchase of second hand or renewed rolling stock instead of new one for example may be of financial benefit at first glance, but it can be more expensive in long term taking into account higher maintenance needs considering the whole life-cycle.

As the aforementioned modifications are in the responsibility of the Managing Authority, which is in our case the Ministry for Innovation and Technology (ITM), the Municipality of the City of Budapest and BKK tries to influence the realisation of the operational program (IKOP) by sending these recommendations to the relevant stakeholders, to initiate negotiations with the bodies in charge and to use the opportunities of proposing and commenting project lists and other IKOP related documents. During the discussions current procedures should be reviewed, financial and legal possibilities should be revised, with the help of external expert if necessary.

A good initiative is the establishment of the "metro fund", which is a kind of financial possibility for transport related projects and which can be used for pre-financing purposes.

3. Players involved

Prime Minister's Office, Ministry of Innovation and Technology, Municipality of Budapest, National Infrastructure Development Plc., BKK Plc.

4. Timeframe

2019 Q2 – 2021 Q1 (24 months)

5. Costs

Approximately 50,000 EUR

6. Funding sources:

Own sources of the involved institutions. ERDF funds influenced depends on the amount of projects affected by changes. For the current programming period it would be a limited number of projects, but it has also a potential for projects of the coming programming period.

Date: 12.07.2019.
Nyul Zoltán

Signature: _____



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Fejes Balázs
07.08. 

