City bus in Ljubljana. Photo: Uroš Podlogar

NEWSLETTER 8 | MARCH 2020

ENTERING THE SECOND PHASE OF THE PROJECT

Janez Nared

Last year, the SMART-MR project concluded its first phase, dedicated to an international learning process in the field of mobility.

The ten partners from eight metropolitan regions organized seven content-related workshops attended by experts and practitioners from all the included metropolitan regions. At the workshops, the project partners and stakeholders shared experiences and presented good practices. Each workshop topic was summarized in the form of an inventory and workshop documentation, all of which are presented in the project library on the project website. The project partners have also prepared a final publication titled Transforming European Metropolitan Regions: Smart Mobility for Better Liveability.

The main message we wish to deliver is that alternatives to current unsustainable modes of behaviour already exist; **what is missing is a willingness to make a change**. Our hope is that the final publication will help everyone make that decisive next step. In April 2019, almost a year ago, the SMART-MR project entered its second phase, dedicated to the **implementation of the action plans**. They contain a select number of actions grounded on the lessons learned within the SMART-MR project and designed to improve mobility in the participating metropolitan regions. The actions are projected to be implemented in the two years after the first project phase and **this newsletter presents the results achieved during the first year of the implementation**. We are proud of these results and we are looking forward to observing other successful actions to follow.

SMART-MR
Interreg Europe

European Union
European Regional Development Fund

SMART-MR (Sustainable measures for achieving resilient transportation in metropolitan regions) is an Interreg Europe project running from April 2016 until March 2021 with a total budget of approximately Euro 2,2 million.

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REALISATION OF THE ACTION PLAN FOR THE LJUBLJANA URBAN REGION

Katja Butina, Janez Nared

The Action Plan for the Ljubljana Urban Region consists of three actions:

- **Action 1: Sustainable urban mobility plan for the Ljubljana Urban Region**
- **Action 2: Regional development programme for the Ljubljana Urban Region**
- **Action 3: Guidelines for preparing regional mobility plans.**

Action 3 sets up a national framework for preparing regional mobility plans, whereas actions 1 and 2 address the documents at the regional level.

Web link
https://www.rralur.si/projekti/smart-mr

10th regular session of the Ljubljana Urban Region Council, October 2018. Photo: Nik Rovan

ACTION 1: Sustainable Urban Mobility Plan for the Ljubljana Urban Region

The Ljubljana Urban Region (LUR) unites 26 municipalities in central Slovenia and is the region with the highest daily migration rate in the country. In addition to the 550,000 LUR residents, 28,000 students and 142,500 commuters migrate to the LUR daily from other Slovenian regions, in great majority with cars. In recent years, nine municipalities in the LUR have prepared and adopted local Sustainable Urban Mobility Plans (SUMPs). The region, however, took it a step further. The Sustainable Urban Mobility Plan for the Ljubljana Urban Region (SUMP LUR) is the first regional SUMP in Slovenia that was officially adopted by a formal body of a regional council comprised of all 26 mayors of the LUR municipalities.

The regional SUMP was prepared in the framework of the SMART-MR Interreg Europe project by five partners: the Regional Development Agency of the Ljubljana Urban Region, the Research Centre of the Slovenian Academy of Sciences and Arts, the Urban Institute of Ljubljana, the Institute of Traffic and Transport Ljubljana, and the Institute for Spatial Policies.

Implementation

Our propensity to hold onto the traditional way of transport planning, public participation, and multilevel governance has only begun to be included in and examined by regional agendas within the last decade. Following many bright examples of local SUMPs, the preparation of the regional SUMP LUR has finally paved the way for developing the involvement of multilevel stakeholders in the fields of regional transport and spatial planning.

Following European and national guidelines, various stakeholders and the general public were involved in preparing the SUMP LUR. In order to understand local needs and identify municipal interdependencies at the regional scale, 26 in-depth interviews were conducted with all the mayors in the region. Two workshops were organized for municipality representatives and key regional and national stakeholders who conducted a state-of-the-art analysis and identified public transport (PT) and intramodality as the integral part of the current and future regional transport system. A higher political involvement was achieved with the active participation of various national organisations (in addition to other national bodies, the Ministry of Economic Development and Technology, the Ministry of the Environment and Spatial Planning, the Ministry of Infrastructure), regional bodies (the Regional Development Council and the Regional Council comprised of all mayors in the region), and transport operators (regional bus operators, Slovenian Railways − passenger transport). Various NGO's, institutes, and researchers were brought on board, as well as the Regional Coordination Body for Steering the Development of Public Transport, who contributed to the outlining of the needs for future PT development, proposing potential PT measures, and advising on necessary regional PT organisational adjustments.


SUMP LUR workshop, May 2018. Photo: LUR

Five workshops were organized to attract the general public, as well as an online survey of travel habits. Through them, 2,000 inhabitants of the LUR outlined their vision, expectations, and priorities for the future development of sustainable mobility in the region. The priorities of the regional mobility and spatial planning measures were finally selected based on the stakeholders' proposals, the public's preferences, and the regional transport vision and operational goals. In the final stages, the key measures were transformed into the action plan that was then once again verified at the workshop for the municipality representatives and a workshop and final interviews with key stakeholders. At the end of the process, the proposed draft action plan was reviewed and the final version was passed by the Regional Council on 24 October 2018.

ACTION 2: Regional Development Programme of Ljubljana Urban Region

The Regional Development Programme for the Ljubljana Urban Region (RDP LUR) was initiated and produced by the Regional Development Agency of the Ljubljana Urban Region. The RDP LUR is the fundamental regional-level strategic and programming document that harmonizes the development objectives in the region and outlines the instruments and resources for their realization. The strategic section of the RDP LUR features an analysis of regional development potentials, a definition of the key development obstacles and strengths of the region, and finally, a determination of the region's development specialization, of which sustainable mobility is one of the most important elements. The RDP LUR 2021–2027 will outline the region's development priorities, programmes, and measures, as well as all the lessons learned from SUMP LUR and the policy recommendations, experiences, and methodologies from the SMART-MR project.

The preparation of the RDP LUR involves several phases. The subject material that must be included in RDP is:

- An analysis of regional development potentials, the identification of key development barriers and the benefits of the region in the international environment
- A definition of the region's vision
- A definition and justification of the region's development specialization
- A definition and description of the region's strategic development objectives
- A definition and description of the region's development priorities with quantified indicators and the indication of the sources of data for indicator monitoring
- Approximate cost estimate of the RDP
- Defined detailed measures of each priority
- A defined system of monitoring, evaluating, and implementation of the RDP
- A defined system of informing the public on the planning and implementation of the RDP
- A presentation of the most important regional projects

Implementation

After the adoption of the RDP LUR 2021−2027 Preparation Programme by the Regional Development Council, the The Regional Development Agency of the Ljubljana Urban Region (RRA LUR) appointed a working group to prepare the RDP LUR. A working draft of the strategic part of the RDP LUR 2021–2027 was prepared in 2019.

To prepare the strategic part of the RDP LUR, the working group analysed the state-of-the-art and the development possibilities of the region and its comparative advantages over neighbouring regions and in the international environment.


Electric cars. Photo: Fotolia

The SWOT analysis identified the region's key developmental barriers, strengths, weaknesses, opportunities, and threats. A proposal was prepared for further discussion as well as a substantive proposal for the development of the region's vision. A framework proposal for the development specialization of the region has also been set, which will be defined in detail after a consultation with the key regional stakeholders and decision makers. The draft of the strategic part of the RDP sets out the region's development goals and outlines the region's development priorities with key indicators.

After aligning the strategic part of the RDP, the RRA LUR will start preparing the programming part of the RDP LUR 2021−2027. This will include identifying the programs within each development priority that will encourage development in the region, including the time and financial frames and definition, and a detailed description of the actions. A system will be established for monitoring, evaluating, and organizing the implementation of the regional development program and the overall financial assessment of the RDP's value. A dissemination system of the planning and implementation of the RDP will be defined and the most important regional projects will be presented.

The draft of the strategic part of the RDP is the first step towards in-depth work within the region, which will, through workshops and meetings, define where the region wants to be in 2027 and what financial resources and activities will be needed to achieve it.

The RDP LUR will be prepared in spring 2021.

ACTION 3: Guidelines for preparing regional mobility plans

In Slovenia, planning at the regional level brings numerous challenges, as there are no regional authorities and thus the decision-making competences are shared between the local and the national level. This divide is also visible in transport planning, where national authorities are responsible for public transport, regional roads, national roads, and highways and local authorities are responsible for local roads, school buses, and city buses in case of city municipalities.

The Ministry of Infrastructure has provided guidelines and funding for sustainable urban mobility plans at the local level (which were adopted by 9 municipalities out of 26 in the region), whereas the mobility issues at the regional level remain unsolved. To solve this issue, the ministry intents to elaborate guidelines for preparing regional mobility plans and the experiences of the SMART-MR project could provide a valuable input, e.g. with the guide on Transforming European Metropolitan Regions.

Implementation

The guidelines will provide a valuable input into regional mobility planning in Slovenia and will enable regions to prepare comprehensive and coherent regional mobility plans and thus promote investments in mobility and a low-carbon economy. To support this, the local partnership worked on the Regional Mobility Plan for the Ljubljana Urban Region (Action 1) and presented the results and the lessons learned at the end of the process to the Ministry and the interested public, mostly transport experts certified for preparing mobility plans.

In order to prepare the guidelines, the Ministry of Infrastructure decided to actively support projects that might help it reach its aim. With this in mind, the Ministry for Infrastructure joined the CROSSMOBY project (Interreg SI-IT) as an observer and CARE4CLIMATE (Life+) as a partner.

The results of these two projects will build on the existing knowledge of regional mobility planning, including the renewed Eltis guidelines for preparing mobility plans, and will provide guidelines for developing regional mobility plans in part by implementing pilot projects. The guidelines will define the appropriate governance structure at the regional level that would replace the lacking regional administrative level, as well as the basic principles for ensuring the durability and resilience of the system by defining regular funding and ensuring sufficient and competent groups of experts, staff, and mobility planners in each individual region.

As expected, the guidelines will be delivered in spring 2021.

Prešeren Square, Ljubljana. Photo: Luka Klemen

ACTION 1: Akershus: Providing guiding principles for municipal urban development areas

Akershus is the surrounding county of Oslo and a separate legal entity. There are 22 municipalities in Akershus, 8 of which have placed a special priority on urbanization and growth. These eight cities all have extensive plans for development and a need for financing, however, the county is the owner of key road infrastructure in many cases. The problem is that the needs for investments on these roads are much greater than the county budget allows and the municipalities' ambitions for urban development are equally as high. The county needed to strengthen the municipalities' competence and enable them to find funding for the desired development and to develop a framework with guidelines on how municipalities are to be met at the county level in a fair and predictable way.

This is a process-based action consisting of two equally important elements:

1. Increased knowledge among local authorities on how to achieve the desired development.
2. Creating a general framework for investment agreements and land use in urban development areas.

Overall, this action aims to create a model to communicate, agree, and plan land use and investments in transition areas in Akershus.

Implementation

A series of three seminars were held in the autumn of 2018 and spring of 2019 to increase the capacity within the municipalities. The division for transport cooperated with the division for planning through a series of seminars held by the entity UrbanIDE on land use and development plans and area investment agreements. The seminars invited planners and other professionals from the municipalities, state agencies, and private developers to learn about the existing framework and the possibilities for land use development plans and financial models. This promoted a good cooperation for urban development in the cities of the Akershus County.

Further on into the development of a framework, a political agreement was reached in the autumn of 2019 concerning the development and co-funding of a county road within an urban development in one of the municipalities. The agreement defines the level of funding from the county, municipality, and developers along with requirements for the concerned parties and the timeline. This agreement is seen as a possible template for other agreements for similar projects in the future.

Since the signing of the action plan, the Akershus County has ceased to exist. On 1 January 2020, it became a part of the new larger county of Viken, in which three counties and the roads administration merged into a new entity. The implementation of the action was therefore finalized in 2019 by the Akershus County. However, we are working on realizing this practice and framework as the norm in the new county of Viken.

ACTION 2: Oslo: Develop 'Mobility strategy' for the Agency of Urban Environment (Partial SUMP), containing a Mobility Analysis for Oslo

This action exploits the mobility potential of Oslo as the 2019 European Green Capital. In its framework, the Climate and Energy Strategy established the governing policies for a more efficient and climate-neutral mobility. The aim is to facilitate comprehensive, sustainable, and seamless mobility. Both the public transport company and the Agency for Urban Environment have their own thematic plans/strategies. An important lesson from the SMART-MR

REALISATION OF THE ACTION PLAN FOR OSLO AND AKERSHUS

Liv Maren Bjørnstad, Birte Adelaide Mobraaten

The Action Plan for Oslo and Akershus consists of three actions:

- **Action 1: Akershus: Providing guiding principles for municipal urban development areas**
- **Action 2: Oslo: Developing the 'Mobility strategy' for the Agency of Urban Environment (Partial SUMP), containing a Mobility Analysis for Oslo**
- **Action 3: Oslo: Implementing ITS pilots within the STOR – Smarter Transport in the Oslo Region project**

The background policy document for Oslo and Akershus is the joint Regional Land Use and Transport Plan (RLTP), in particular sections H7 on regional structure for freight and logistics and H10 on agreements on land use and transport.

Web links

https://www.oslo.kommune.no/prosjekter/smart-mr-sustainable-measures-for-achieving-resilient-transportation-in-metropolitan-regions/

https://viken.no/tjenester/planlegging/internasjonalt/internasjonale-prosjekter/smart-mr.21156.aspx

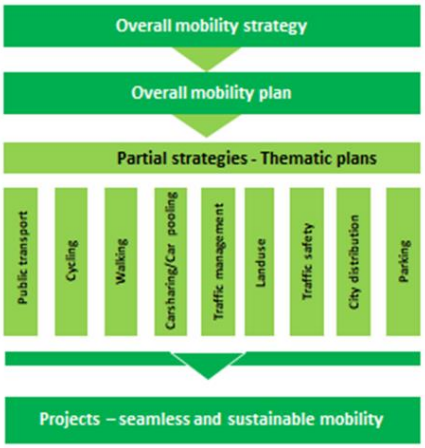
project is to emphasise accessibility instead of the more traditional approaches of managing motorized traffic. Accessibility evaluates transport system performance based on people's and businesses' ability to reach desired services and activities. Furthermore, the participatory process and integration at the regional level also need to be taken into consideration during the development of the strategy.

Implementation

The mobility strategy for the Agency for Urban Environment will function as an umbrella for existing and future partial mobility strategies/thematic plans (e.g. for cycling, walking, parking). The mobility strategy could help the agency prioritize when planning, building, and maintaining public roads and streets. The development of the strategy is initiated by the agency itself and does not have a political commitment yet, resulting in limited financial resources.

The project initiation document has been revised and the list of partial mobility strategies and thematic plans has been extended. The proposed process towards a seamless and sustainable mobility is described in more detail in four phases with the first one being a mobility strategy for the agency. The second phase could be a mobility analysis for Oslo, the third phase could contain a mobility strategy for the entire city of Oslo, and phase four could be to prepare missing thematic plans. The first phase will start in the near future with a budget of around € 125,000. The figure below shows phases 3 and 4.

The list of partial strategies/thematic plans also includes micro mobility, charging infrastructure, artificial intelligence, future infrastructure, plans for maintenance, runoff water, infrastructure adapted to climate change, mass handling, governance, and traffic signs.



Overall structure – seamless and sustainable mobility (Agency for Urban Environment).

ACTION 3: Oslo: Implement ITS pilots within the STOR – Smarter Transport in the Oslo Region project

The motivation for this action is the need to follow up H7 in the regional land use and transport plan (RLTP) on the regional structure for freight and logistics, in particular to look for technological solutions that can enhance the flow of freight and distribution of traffic. Another important motivation for this action is Oslo's program for a car-free city life, which has transformed the city centre into a more liveable urban environment. Between 2017 and 2019, the program implemented measures to improve pedestrian and bicycle facilities, provide amenities, such as public toilets and drinking fountains, and activate public space. To create room for these activities, the program also implemented a number of traffic mitigation measures. These included removing approximately 1,000 on-street parking spaces and introducing a new traffic pattern to restrict transit traffic. Alongside the goal of reducing private car trips in the city centre, the program strived to improve accessibility for disabled people and goods delivery.

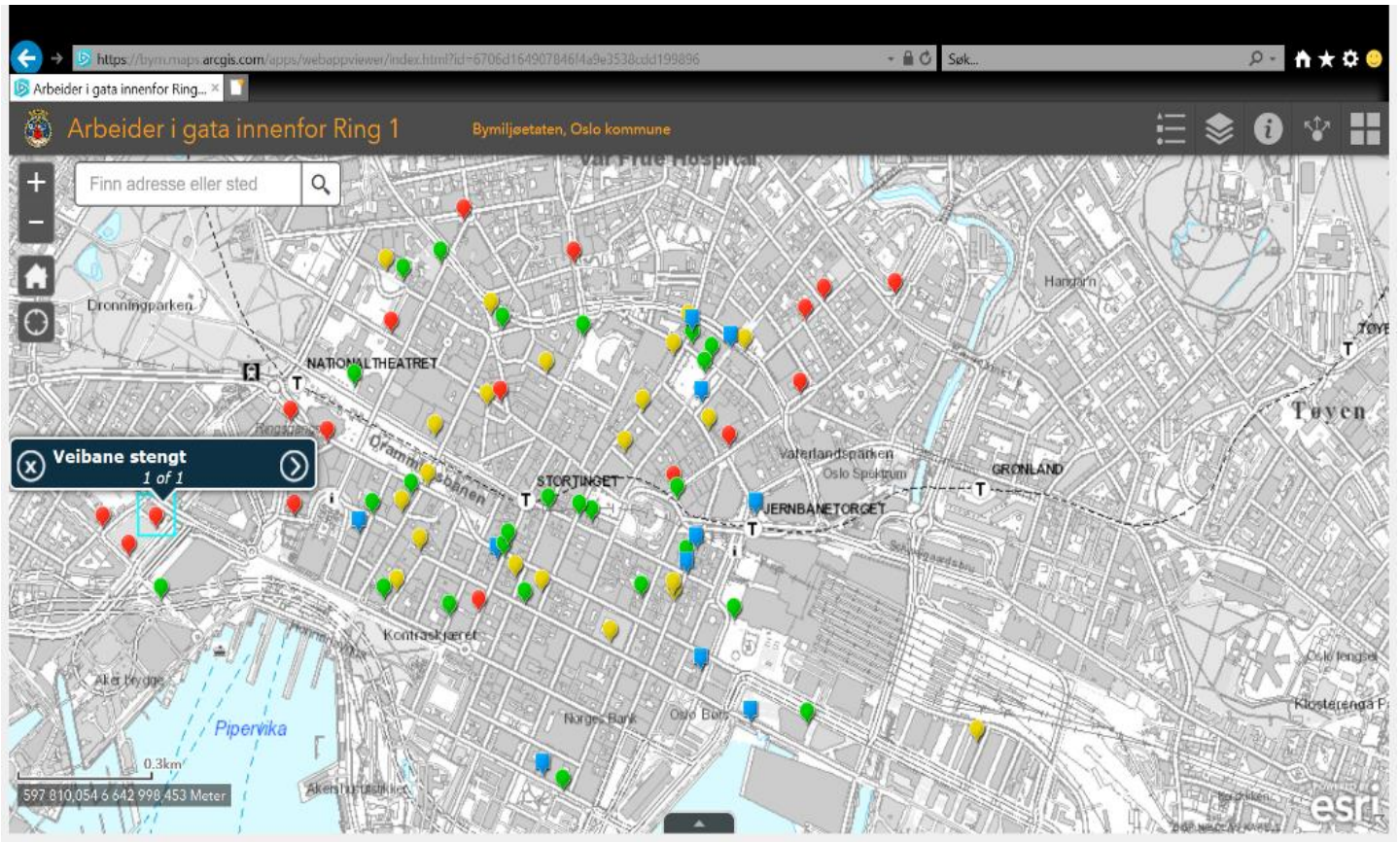
It has become clear through the SMART-MR project that it is important to establish demonstration projects for green city logistics and to build private-public partnerships. The need to test different solutions before including them in a local plan or strategy has also been emphasised. Smarter Transport in the Oslo Region (STOR) identified the need to test solutions to improve the accessibility, efficiency, and predictability of transport and parking for handicapped users and delivery vehicles.

Implementation

Using the Living Labs method and a fail-fast approach, the STOR project has established two pilot projects that are included as actions in the SMART-MR project:

1. **Handicap parking**

The goal of this pilot is to facilitate parking spaces for disabled people in the city centre through the use of technology. For example, detection technology can be used to collect data on occupation rates in handicap parking spaces and to share information with users about available spaces in real-time. Occupancy statistics may help the city to plan the better allocation of handicap parking spaces. Additionally, better information about the physical characteristics of each handicap parking space can help users identify a space that meets their needs. The urban form and a four-season climate in Oslo can prove a challenge for detection solutions, so this pilot project gives great insight into the possibilities and limitations of such technology.



Online map solution with information on road closures and detours (Agency for Urban Environment).

2. **Traffic management in Ring Road 1** (previously called ITS in freight transport)

The goal of this pilot is to facilitate handicap parking in the city centre through a better understanding of the users' needs and smart use of technology, without increasing the number of allocated parking spaces. Road work, construction projects, and events often lead to road closures and detours, which affects the accessibility and efficiency of goods delivery. The project tests different measures to share this information with craftsmen and delivery drivers who serve routes and customers in the city centre. The initial test solution was a newsletter, which has since evolved into an online map. Feedback from the pilot group is used to continually improve the format, content, and frequency of the distributed information. This work also gives insight into the development of a long-term, digital solution, such as open data.

There is a strong synergy between these two pilot projects. Lessons learned from the handicap parking project in particular can be transferable to other geographic areas and user groups. Insight gained on detection technology will, for example, inform future plans to offer real-time information about the availability of on-street delivery zones.

A third pilot project to improve traffic behaviour was terminated in December 2019 after it was determined that the legal framework was not ripe enough to move forward with testing the desired technologies.

The city centre in Oslo. Photo: Gregor Steklačič

REALISATION OF THE ACTION PLAN FOR THE GOTHENBURG REGION

Per Kristersson

The Action Plan for the Gothenburg Region consists of two actions:

- **Action 1: Influence "Sustainable Growth, Goals, and Strategies Focusing on Regional Structure"**
- **Action 2: "Calculate Sustainable Density in Station Communities"**

Web link:

https://goteborgsregionen.se/GR/toppmenyn/detta-jobbar-gr-med/miljo-och-samhallsbyggnad/projekt/smart-mr.html

ACTION 1: Influence "Sustainable Growth, goals, and strategies focusing on regional structure" (still in progress)

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.

The action aims to influence "Sustainable Growth, goals and strategies focusing on regional structure". The document Structural Illustration is included in the policy. The Structural Illustration is a political regional agreement that determines possible locations for new dwellings and workplaces. This means that transport corridors and station hubs are an important focus for development. The overall goal of the policy document is to achieve sustainable growth. This means that the larger proportion of necessary mobility should use sustainable modes of transport. The policy document is part of a multi-level governance model adopted in the Gothenburg region in 2001. This form of governing depends on joint political regional agreements. Altogether, 5 regional consultation rounds have been made since 2001. The latest document was adopted in June 2013 by the council of Göteborg Region Association of Local Authorities.

The policy document states the importance that the Göteborg Region becomes a strong and distinct European growth region; a region that is an attractive place to live, work, and visit. The policy document also states that the support of the regional Structural Illustration that creates long-term sustainability should design the urban environment and other built-up areas to stimulate richness in our day-to-day lives, with good housing and attractive places to meet.

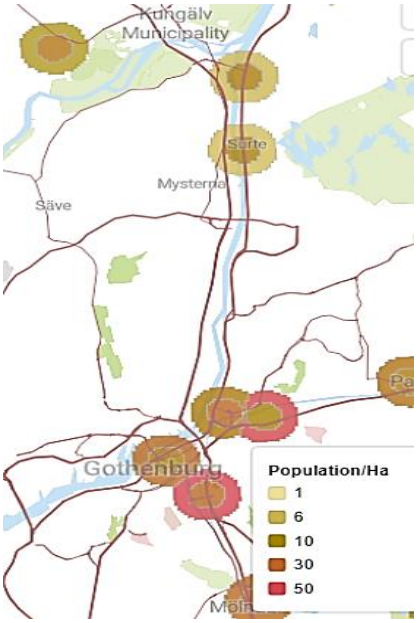
The policy states "*We will reinforce confidence and trust between individuals and in community services, contributing to quality of life and growth*." And "*develop the Göteborg Region in line with the structural illustration to give it a strong, attractive regional core and a number of strong competitive sub-regional centres along certain clearly defined corridors.*"

Implementation and progress

Discussions on establishing a 6th regional consultation round has been on the agenda for several years now. The political willingness to conduct an overview of the structural illustration is not clear. Perspectives on what a consultation round should focus on may change due to political changes. Even the format is under discussion. The current position is that some form of policy discussions will take place in autumn 2020, COVID-19 permitting. In the absence of concrete influence on the policy document, the annual budget has incorporated a focus for 2020 on developing the structural illustration with regard to the station communities.

ACTION 2: "Calculate Sustainable Density in Station Communities" (still in progress)

The study "Sustainable Density in Station Communities" was commissioned in the preparatory work for the SMART-MR workshop in 2017 in Gothenburg with the objective to give an understanding of how guidelines and indicators can be used. By applying land use recommendations, it is possible to determine where land can be used for development and what land should be preserved. To attain sustainable density, a certain distribution of land use is required so that densification does not impact the need for available open public spaces, traffic spaces, green areas, etc.



Map of population density, 0–1000m from a station Gothenburg Region

The suggested guidelines for sustainable density included rough indicators for land use within station communities. The sustainable density guidelines combine a number of indicators that are dependent on district floor space, a mix of residents and workers, land use, and the distance to the regional centre. The size of station communities was also taken into consideration. District floor space is used here as an indicator for density. The LOAD (Liveability-Oriented Area Development) concept was introduced

at the Gothenburg workshop. The action plan calculates these indicators and supports the concept of LOAD.

Implementation

LOAD (Liveability-Oriented Area Development) is a concept conceived during the SMART-MR workshop meeting in Gothenburg 2017. It was thought that TOD (Transit-Oriented Development) is a narrow definition of development that focuses too much on transport. Developing an area must be far more dedicated to the unique identity and to the people living there now and in the future.

The LOAD concept has been formulated so that an area needs a certain density of both inhabitants and workers, supported by the study "Sustainable Density in Station Communities" (Nordström, Swartz and Ståhle 2017). In the SMART-MR Guide "Transforming European Metropolitan Regions" a recommended density and land use was added for exploitation used by UN Habitat (2015).

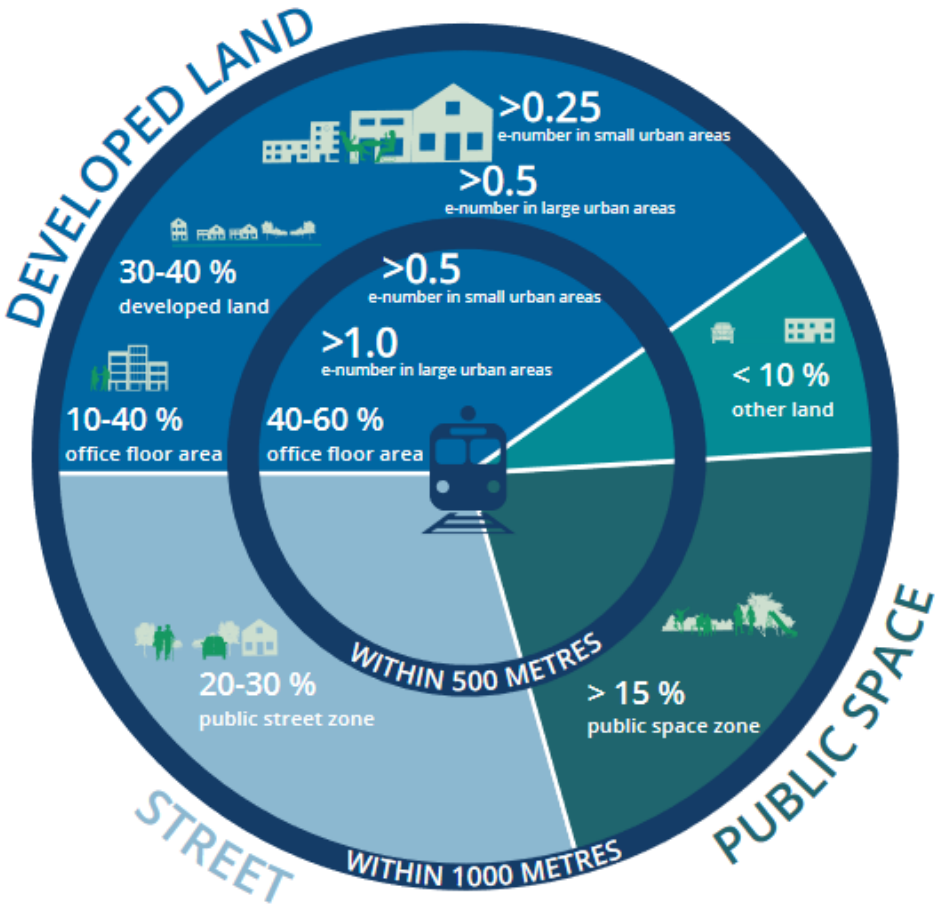
So, what is LOAD?

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

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

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 sustainable development goals in mind.



Now, LOAD is entering a new phase by adopting a tool for analysing existing areas.

- What is the current population density in Station Communities?
- What kind of industry is present for the local inhabitants to seek employment?
- How many different sectors are represented?
- What is the split of working locally or seeking regional employment?
- What kind of education is available, locally and regionally?

There is an overwhelming number of questions that can be asked and analysed with the aim to understand the principals for creating an attractive area.

A benchmarking analysis for Station Communities is created by using buffer zones of 500 and 1,000 meters from the station. 15% of the total population in the Gothenburg Region lives within 1 km from a train station. This value increases to 37% when the radius is expanded to 2 km. This shows that a large proportion of the population lives close to a station, but perhaps not close enough to walk and ride for regional access. The density figures also show that the density has not yet been reached according to the recommendation of 80 dwellers and workers in small Station Communities and 160 for larger Communities. Car dependency is high, especially regionally.

Combining the results from a variety of variables will result in a more complex description of a Station Community and together create a benchmarking tool for analysis. The LOAD tool for comparative analysis will guide local and regional planners about where and when to develop a Station Community to achieve the best results in transforming the metropolitan region sustainably.

REALISATION OF THE ACTION PLAN FOR THE HELSINKI REGION

Aino Hatakka

The Action Plan for the Helsinki Region consists of two actions:

- **Action 1: Smart Stations: Stations as a business platform for climate-friendly services**
- **Action 2: Promoting the Low-Carbon District concept for station areas in the Helsinki Region**

Web link:

https://www.hsy.fi/fi/asiantuntijalle/ilmastonmuutos/hankkeet/Sivut/smart_mr.aspx

ACTION 1: Smart stations: stations as a business platform for climate-friendly services

The Smart Stations project taps the potential of stations as development platforms of new low-carbon and climate-friendly services and solutions for a climate-smart everyday life. The project develops selected stations as business platforms for low-carbon businesses. It also promotes new types of low-carbon and business concepts and new intelligent service solutions to stations.

There have been new rail investments in the Helsinki Metropolitan Region, like the Ring Rail Line and West metro, and the transverse Light rail connection is being built, so there is a lot of untapped potential in the station areas. By developing services for passengers and local inhabitants, station areas can be service centres in the regional urban structure and thus strengthen the role of low-carbon rail transport. These are also potential nodes for city-logistics and last-mile services recognized in the project, as well as circular/sharing economy services. For this aspect, developing the services within station areas will both diminish the need of mobility and add value to trip chains.

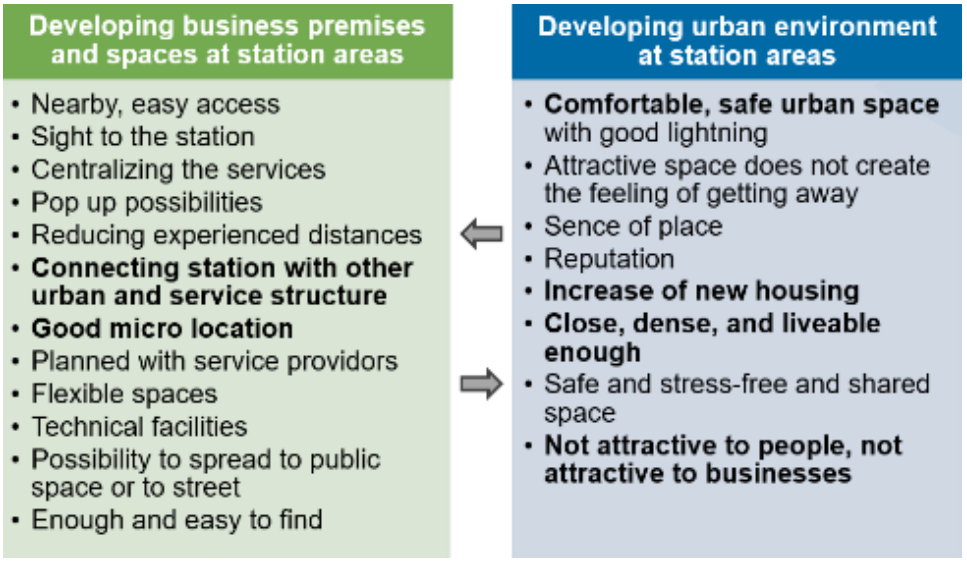
Implementation

The Helsinki Region Environmental Services together with the cities of Helsinki, Espoo, and Vantaa have implemented actions in the Helsinki Region to enhance station areas as pilot platforms for low-carbon services. An analysis of the needs and potential of low-carbon services in station areas was conducted. Several challenges have been identified for introducing new services in the station areas. Even though the number of users is high, the user flow scatters at the station, focuses mainly on rush hours, and emphasizes fast transit. Station areas are generally not considered as safe and tempting for users to spend time, but rather of a space to be quickly passed through, which creates limitations for business development. There is also a lack of suitable premises, a scattered ownership of land, and the premises diminish the development potential.

Next, the existing service range and service needs at station areas were analysed and a spatial data analysis was conducted. A potential was detected to promote low-carbon development by supporting the development of everyday, low-carbon services to reduce the citizens' climate footprint and mobility services to support sustainable travel chains. Locating everyday services in station areas can decrease the need to travel.

In the spring of 2019, a pop-up event was held at several station areas in the Helsinki Region, where business operators presented their new low-carbon products and services that support a low-carbon and streamlined everyday life. The event aimed to increase the awareness of station areas as being marketplaces, promote the residents' awareness that their local stations can serve as service centres, and to support low-carbon mobility choices and behavioural changes towards a low-carbon everyday lifestyle. An innovation contest was organised in collaboration with the City of Helsinki to support the development of new services.

Recommendations for developing station areas into business platforms include developing not only the commercial spaces, but also the urban environment around the station. Commercial spaces should be easily accessible, centralised and supporting each other, well located in terms of the micro location and flexible for multi-usage. The station areas should be developed by connecting the station with the surrounding urban structure, prioritising station areas in the new housing development, and by developing a safe and comfortable urban space.



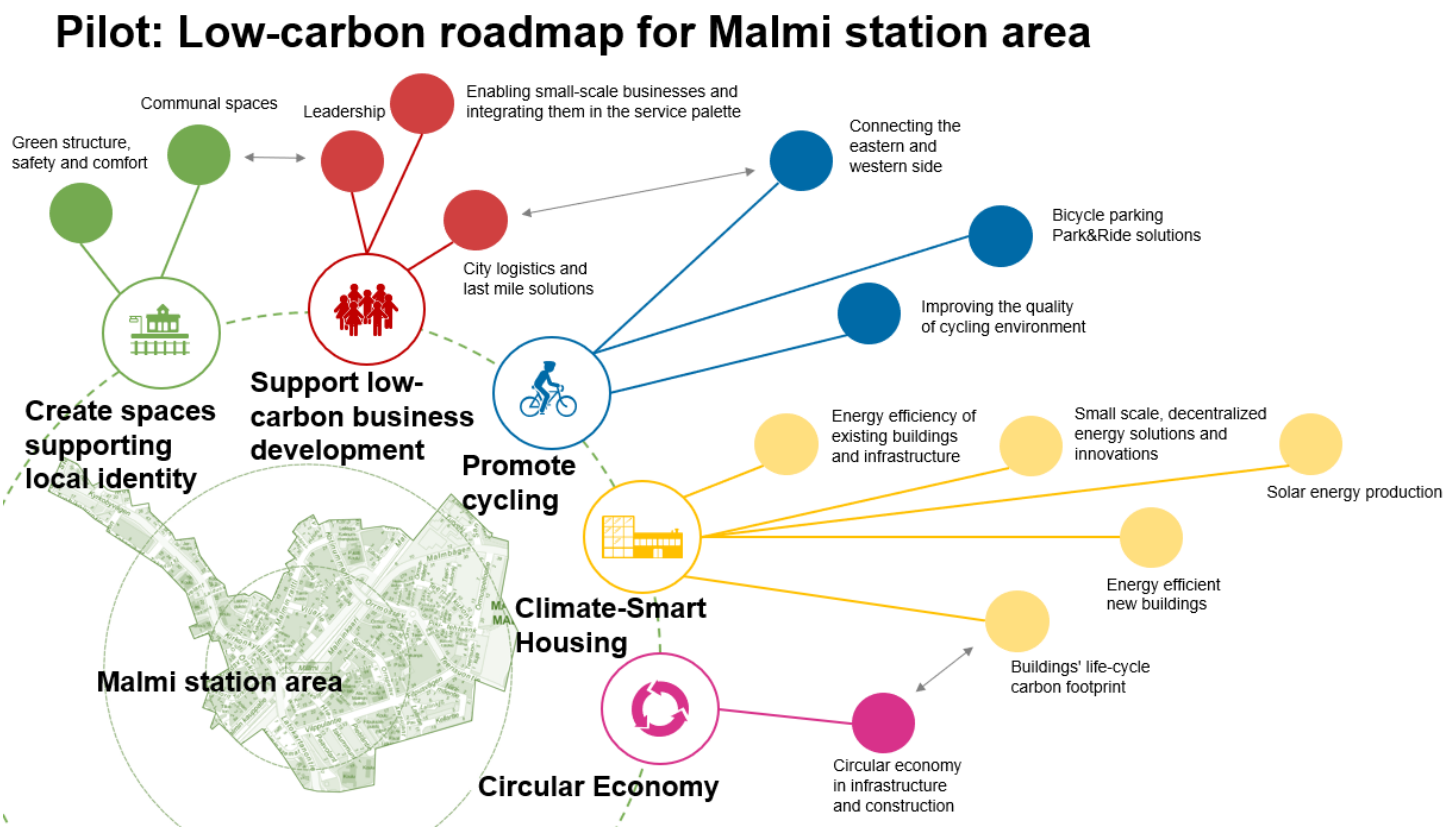
ACTION 2: Promoting the low-carbon district concept for station areas in the Helsinki region

The Low-Carbon District concept was formed within the SMART-MR project to include nearly 70 different planning criteria in themes ranging from climate change mitigation, adaptation, circular economy, and social sustainability & health. It also recognizes the potential of technology integrations. It is a planner's toolkit not only for station areas, but for sustainable urban development as well. The concept provides concrete measures and new ideas to comprehensively implement climate and sustainable development goals into urban planning.

Implementation

A planning concept for low-carbon station areas has been finalized and is prepared to be used in the form of a web tool for planners in metropolitan regions. The web tool will be published in English in April 2020.

The planning concept was tested and a low-carbon roadmap for the station area was prepared based on the concept in the Malmi station as the pilot area in Helsinki. The test process included creating a low-carbon roadmap to help planners recognize the climate targets and tailor the measures to the action plan. The work began with spatial analyses to identify the preconditions for the target area. The Low-Carbon District criteria were introduced and prioritized in a stakeholder workshop and a low-carbon road map was created as the result of the workshop. The roadmap was then used as a basis in a participatory planning process where a shared vision for the Malmi station area was created by urban planners, property and landowners, companies, citizens, NGOs, and other local actors.



There is a need for a regional cooperation. Photo: Simon Ilyiró

ACTION 1: Institutional developments for an enhanced regional cooperation (still in progress)

The current transport-related institutional system in the region is remarkably fragmented due to conflicts of interests between the municipalities, even within the capital city. Even reforms to the transport-related institutional system (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). In 2014, sectorial disintegrational processes began as a consequence of the reorganisation of BKK (e.g. the separation of some suburban rail services). There is also a great need for close cooperation in the area of service provision.

In light of these institutional characteristics, the capital region cannot handle the constant city evolution, development trends, and their transport implications. From a functional aspect, the city has sprawled beyond the city border a long time ago and the fragmented institutions are only able to follow these on-going dynamic changes to a very limited degree. The lack of regional transport integration manifests itself in inappropriate regulations, insufficient services, fares, and information systems. IKOP contains development projects for the region, however their realization is split between national and local stakeholders, which results in insufficient coordination and a conflict of different interests of the city and the region.

Implementation

The governance structure in Hungary was slightly changed in 2018. A new state secretariat was established within the Prime Minister's Office, called the State Secretariat for the Development of Budapest and its Agglomeration. The aim of this new institution is to coordinate national developments within and around the Hungarian capital. Following this change, close negotiations have begun between the new state secretariat and the Mayor of Budapest. As a result, a new council has been set up (FKT, Fővárosi Közfejlesztések Tanácsa – Council for Public Investments of Budapest) in November 2018 for a closer cooperation between the Municipality of Budapest and the government in terms of development projects. The state established a new body (originally called KKBK, currently BFK – Centre for Budapest Development) to manage the development projects decided by FKT on the state side. On the city's side, BKK is involved in transport-related developments. Politicians and important players on both sides talk more and more about the need for a future formal regional cooperation. The SUMP for Budapest

REALISATION OF THE ACTION PLAN FOR THE BUDAPEST URBAN REGION

Balázs Fejes

The Action Plan for the Budapest Urban Region consists of four actions:

- **Action 1: Institutional developments for an enhanced regional cooperation**
- **Action 2: Establishing the basis of a regional SUMP-based policy and a strategy-making process**
- **Action 3: Application of the CONSUL platform for institutional and public consultation**
- **Action 4: Proposals on procedure control to enhance the efficiency of operative programmes**

All the actions address the policy instrument Integrated Transport Development Operational Programme (IKOP) 2014–2020. The key success factor for enhancing the effectiveness of IKOP is the regional cooperation between the local and the national level, which is addressed by Actions 1 and 2. Action 3 emphasises the importance of public consultations and provides a useful tool for this, while Action 4 mainly addresses some technical aspects of the implementation of operational programs.

Web link
https://bkk.hu/en/news/

(called BMT – Budapest Mobility Plan) was approved in 2019: it contains an institutional analysis that proposes a formal regional cooperation, as well as a project proposal to set up a dedicated body for this.

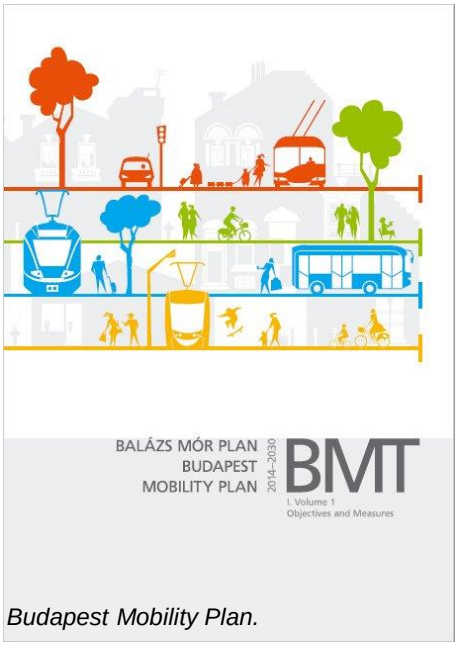
There is a need for a regional cooperation. Photo: Simon Nyirö

ACTION 2: Establishing the basis for a regional SUMP-based policy and strategy-making process (still in progress)

The Hungarian transport policy lacks an approach at the regional level. Consequently, transport development projects of regional relevance (e.g. the ones on the IKOP project list) are often given little attention in national and local planning processes. However, regional territorial conflicts can be identified in many national projects and the relating impacts are often neglected. While regional development needs can be identified at a local level, the lack of competence often impedes acting upon them. Due to these competency and coordination problems, regional projects frequently drop down the priority lists and cannot be part of the IKOP. Another related issue is that the selection itself of regionally important national projects for the IKOP project list has never been transparent nor definite. In light of all of this, covering the missing regional link in strategy-making processes could be a way to overcome the many transport-related problems and to create a definitive project list for the IKOP by all the relevant stakeholders.

Implementation

The SUMP for Budapest (BMT) was approved in 2019 and places great emphasis the integration of local, regional, and national systems. An independent body was set up (called BMB, Balázs Mór Committee) during the preparation phase consisting of high-ranking representatives of all stakeholder institutions affected by the mobility strategy on both the state and the municipal side. The BMB meetings were a good forum to discuss comprehensive mobility issues and the regional aspects. The conceptual work made by BMT has been gaining more regional relevance, e.g. the development of the unified transport model, the Park & Ride concept, the need to establish a unified regional tariff system, etc. The setting up and operation of the Council for Public Investments of Budapest (FKT) is also a good step towards a regional policy and a strategy-making process. FKT meets on a monthly basis; it consists of representatives from different ministries and the Municipality of the City of Budapest, where they discuss Budapest-related developments, which are partially in the competence of the municipality, partially of the state, e.g. state-financed railway developments within the city, which have impacts on city transportation (due to new stops) and on regional connections as well. Furthermore, the Centre for Budapest Development (BFK) is working on a city development strategy 2030 from the state perspective, which is currently being harmonized with BMT.



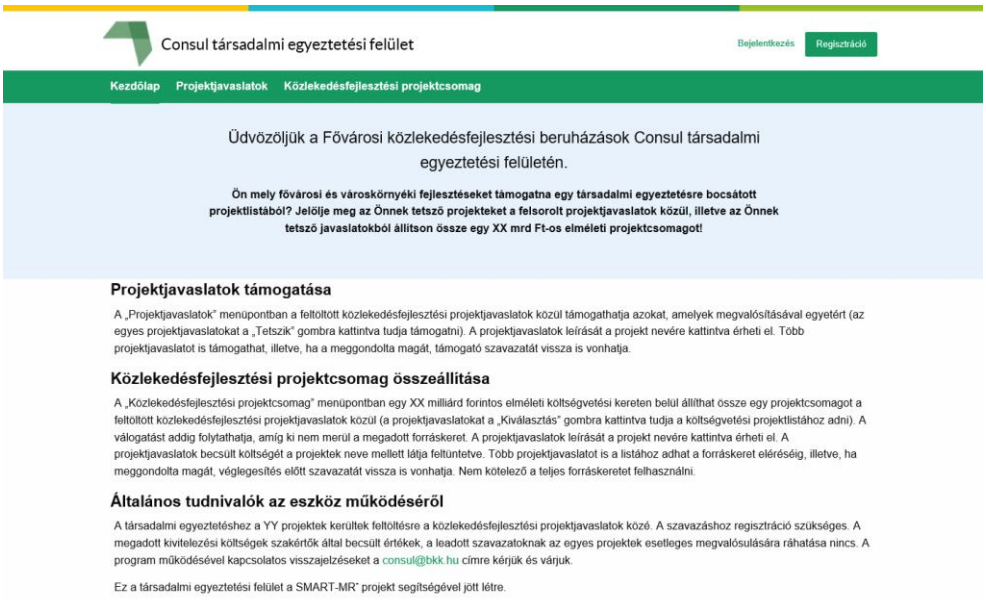
Budapest Mobility Plan.

ACTION 3: Application of the Consul platform for institutional and public consultation (still in progress)

The participation process is essential in transport planning; however, these differ from country to country and also in terms of the desired achievements. In some cases, participatory planning is not a realistic method, as project range from wide scale to small scale. Participatory transport planning is much more difficult on big-scale regional projects, since these are often more complicated and are difficult to comprehend by the general public. Hence, participatory planning should be institutionalised at the regional level. Based on the IKOP's analysis, the learning process in the project, and a benchmarking analysis of different consultation tools, CONSUL was selected for BKK as an adequate platform for institutional and public consultations. It enables the creation of an online platform with a consistent layout and functionality. After adopting the tool, an initial public consultation process was 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.

Implementation

Public participation is becoming more relevant in the process of implementing public developments. The newly elected city government (the city council, the mayor, the deputy mayors, etc.) has set different priorities from the previous regime.



CONSUL public consultation tool.

They have put great emphasis on public participation, consultations, and discussions in general. Together with the BKK management, they have become familiar with the CONSUL software, which is able to guide public participation. CONSUL was adopted for BKK's needs and two functions—voting and budgeting—were implemented; commenting was also enabled for certain users in the test phase. The tool was not fully functional, so the GDPR compatibility and vulnerability tests could not be provided, which led to the disuse of the tool. An examination is currently underway as to whether and how CONSUL can be used for all BKK-led public consultations, concurrently with the discussions on the municipality's needs. If CONSUL is determined as suitable, the final functionalities will be defined, implemented, tested, and the tool will be put into use. BKK published an article in the Scientific Review of Transport, a paper about the CONSUL implementation and tests in order disseminate this interesting development.

ACTION 4: Proposals on procedure control to enhance the efficiency of operative programmes (still in progress)

The main take-away from the project's learning phase was the importance of institutional consultation in the participation process. We conducted several consultations with the relevant stakeholders affected by IKOP within the region. Based on the interregional learning gathered in phase 1 and the consultations on the operational experiences of the Hungarian EU-funded operative programmes (mainly IKOP), several efficiency problems were identified in the Hungarian execution of the procedure.
These are related to:

- A lack of pre-financing mechanisms mainly in the preparation phase of operational programs, which could enable a better preparation on high-value infrastructure development projects. Without the pre-financing possibility of analysis, the projects are not ranked well enough, as there is not enough available data on the financial demands, technical details, and timing.
- The absence of an option for inter-programme financing of complex projects, which leads to efficiency problems. Larger projects with longer implementation periods or projects affecting different stakeholders are harder to realize due to procedural difficulties.
- Weak pro-subsidy requirements lead to prioritizing maintenance-based projects over real developments. Projects for maintaining the existing infrastructure (e.g. existing metro lines) have a higher priority than developments, which results in the latter being eschewed or being realized to an extremely limited degree due to lack of financial resources.

Implementation

The proposed actions of setting up a pre-financing mechanism, the possibility of a mixed (inter-programme) funding, and the possibility of determining stronger pro-subsidy requirements were mainly based on the discussions with the Municipality of the City of Budapest. After last year's elections, a new city government has been set up with new priorities. In parallel, BKK also faces some changes in the management as well as the organization structure, which are currently ongoing. After the final structures have been defined and competences have been finalized, we will contact the Municipality again to discuss these issues.

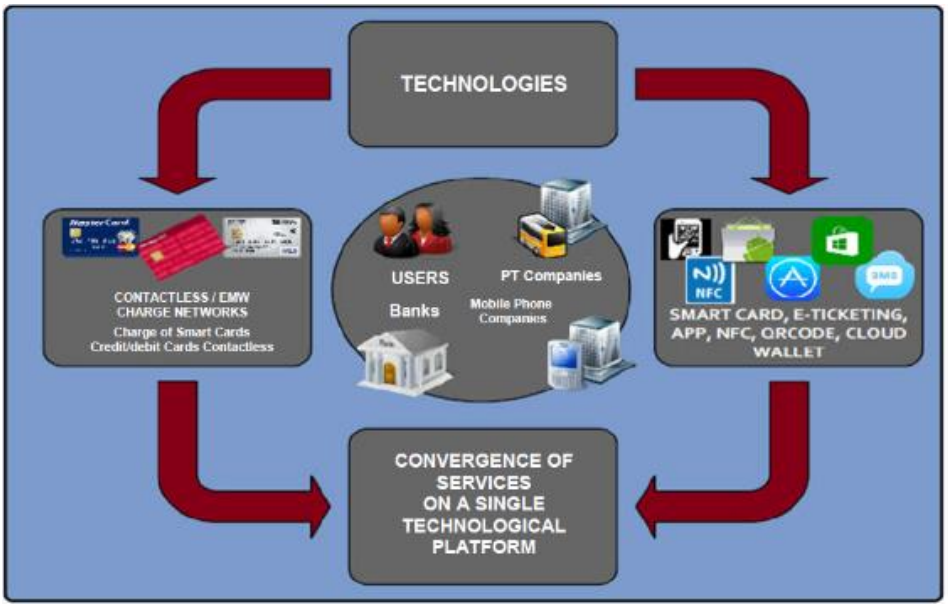
REALISATION OF THE ACTION PLAN FOR THE METROPOLITAN CITY OF ROME CAPITAL

Annabella Bucci, Renzo Liburdi, Gianluca Luciani, Roberto Pomettini

The Action Plan of the Metropolitan City of Rome Capital contains one action:

- **Electronic Ticketing Systems software evolution. Installation of new on-board, storage, and territory systems in the metropolitan area of Rome** (*Evoluzione software SBE. Installazione nuovi sistemi di bordo, di deposito e di territorio nell'area metropolitana di Roma*)

Web link:
https://www.cittametropolitanaroma.gov.it/progetto/5316/



Intelligent Transport Systems Project Overview

ACTION 1: Electronic Ticketing Systems software evolution. Installation of new on-board, storage, and territory systems in the metropolitan area of Rome

Public transport should be the backbone of a metropolitan region's transportation system, as it is one of the most effective and sustainable ways of moving people. One of the future challenges of mobility planning is to find the right mix between various transport modes, shared mobility solutions, and autonomous vehicles to reduce greenhouse gas emissions and create a liveable urban environment without limiting mobility options.

Various bilateral meetings were held between the Metropolitan City of Rome Capital and the Lazio Region to select the most appropriate project for the action plan. The SMART-MR workshop in Porto, also attended by representatives of the Lazio Region, was a valuable experience, as they had the opportunity to attend the presentations of the ANDANTE project about an integrated mobility ticket in Portugal and the ANDA project that integrates infomobility and e-ticketing on mobile devices. In 2017, representatives of the Lazio Region held a meeting at which the project **Intelligent Transport Systems** was proposed and chosen for the action plan, to be directly managed by the Region and funded under the Axis 4 POR 2014−2020 – Action 4.6.3 that provides support for the design, acquisition, and realization of an integrated IT systems for the territory.

In order to promote and develop Intelligent Transport Systems (ITS), the Lazio Region intends to setup a Local Public Transport service centre (RCC – Regional Clearing Center) by creating an integrated, interoperable system based on common and non-proprietary technologies; the system is open to new regional LPT operators, with a view to transferring the management of the entire Metrebus system (metro and bus lines) to the Region itself. The project will be carried out by the regional road company Astral SpA.

Implementation

The project consists of two interventions: the "Electronic Ticketing System" (*Sistema di Bigliettazione Elettronica − SBE*) and "Infomobility" phase, when the real-time collected data will be used to improve people mobility. Their aim is to mitigate vehicle traffic by strengthening the current in/out flows of passengers of the metropolitan area and reducing waiting times, road accidents, the use of private vehicles, and consequently traffic congestion. The Electronic Ticketing System has outfitted the public transport vehicles with Automatic Vehicle Location, so the Lazio Region is able to collect data about the number of routes and kilometres travelled: these devices will be integrated with the SBE this year, enabling the collection of further data, which will mark the conclusion of the first project phase (number and flows of passengers etc.) and the start of the Infomobility phase.

The Lazio Region foresees the following timeframe for the individual steps:

- Call for tender: 02/2020,
- Granting: 09/2020,
- Implementation of SBE devices: 10/2020–3/2021.

ACTION 1: Elaborate the sustainable urban mobility plan for the Porto Metropolitan Region

In 2016, the Metropolitan Area of Porto (AMP) developed the Action Plan for Sustainable Urban Mobility in the AMP (PAMUS) for 17 municipalities in the region as part of the North 2020 programme. The PAMUS lists a series of measures and actions that will promote sustainable mobility and reduce emissions. Its aim is to encourage the use of healthy and sustainable modes of travelling, improve the attractiveness of public transport, and increase its utilization rates, balance the allocation of public space to various modes of transport, promote public transport as an element of social cohesion, provide accessible public space, create passenger interfaces, use ICT in logistics management, and promote public participation. The proposed options are evaluated mainly using a cost-benefit analysis; the benefits are in line with the desired results and in line with our policy instrument.

When reviewing PAMUS, AMP decided that instead of conducting an ordinary review, all the good practices should be incorporated into the SMART-MR project.

A work team was set up by experts from the 17 municipalities and AMP and a new plan was made without external expertise. It was decided that the plan would be a Sustainable Urban Mobility Plan (SUMP). The work is ongoing at the same time as the PAMUS implementation. The good practices from the SMART-MR project are being integrated.

Implementation

A meeting was held in January 2019 of the City Councillors of Mobility, where it was decided the SUMP would be developed internally. SUMPs were regarded to be essential tools for planning not only mobility, but the cities themselves. The suggested methodology entails bringing together a work team with the greatest responsibilities and tasks in AMP, composed of experts from all municipalities to participate actively in the various phases and activities. A deadline for the development of the plan was set (2 years), including precisely scheduled tasks.

The work team meets on a monthly basis. Some of the already completed tasks include:

- Update the diagnosis and SWOT analysis of PAMUS;
- Define a metropolitan vision and common strategic objectives for the 17 municipalities.

The vision defined for all of the regions is “AMP: a territory that grows sustainably. Cohesive, inclusive, efficient: for everyone and everywhere.” Our strategic goals are:

- Change the modal split of transport in AMP, with particular emphasis on reducing the use of private transport;
- Improve the attractiveness of public transport and increase its utilization rates. Promote public transport as an element of social cohesion, economic development, territorial cohesion, continuity of physical space, displacement of population flows, accessibility to the territory, and markets for goods and services;
- Improve road safety, which is one of the main disincentives for active mobility.

REALISATION OF THE ACTION PLAN FOR THE METROPOLITAN AREA OF PORTO

Carmo Tovar, Carla Oliveira

The Action Plan for the Porto Metropolitan Area consists of two actions:

- **Action 1: Elaborate the Sustainable Urban Mobility Plan for the Porto Metropolitan Region**
- **Action 2: Simplify and reduce public transport prices**

Web link:

http://portal.amp.pt/pt/2/temad/362#FOCO_2

ACTION 2: SIMPLIFY AND REDUCE PUBLIC TRANSPORT PRICES

To ensure the success of the strategy for a sustainable and resilient transportation in metropolitan regions, it is important to implement short-term measures that can achieve significant gains over a period of four years. These short-term wins should be communicated to the public in order to mobilize the stakeholders and the citizens around the same targets. In the SMART-MR workshops, the partners, specialists, and stakeholders were able to identify the measures that produce these kinds of positive and visible results.

The SMART-MR project emphasized the use of public transport, which is an effective way of moving people, and should be the backbone of the transport system.

In early 2019, part of the metropolitan territory has still not been included in the

intermodal ticket system, which creates varying access to public transport for the residents in different municipalities in the metropolitan area. This meant some people had to pay for more than one monthly pass; the complexly of two different systems (the intermodal and the monomodal one) also meant different passengers were paying completely different prices, depending on their place of residence and the modes of transport that they were able to use.

In order to speed up the increase of public transport passengers, AMP implemented an action to simplify and reduce the prices of public transport: one Metropolitan Public Transport Pass that can be used in all public modes of transports: metro, train, and busses. A flat rate per month (€ 40) covers the entire metropolitan area, while the Municipal Public Transport Pass (1 pass, one municipality, € 30) is free for children under 12 years of age.

Communication campaign material

Implementation

1st phase:

a) Enlargement of our intermodal ticketing system

- February to May 2019: negotiation with the transport operators;
- 15 March 2019: agreements with the Andante transport operators
- 1 April 2019: starting with measures for the transport operators with lines in the intermodal system (Andante)
  - One price per month covers the entire metropolitan area (flat rate): € 40
  - 3 zones or fewer: € 30
- AMP supports the cost of the measure

2nd phase:

- March to September 2019:
  - agreements with the transport operators outside the system
  - technological compatibility of the ticketing systems
- 1 May 2019: the intermodal ticket system is extended to the entire territory of the metropolitan area and to the majority of the transport operators
- 1 September 2019:
  - Children under 12 ride for free
  - Agreements with (almost) all transport operators
- Until December 2019:
  - A Metropolitan Public Transport Pass (to travel in the entire metropolitan area) – € 40; a Municipal Pass (to travel in one municipality) – € 30
  - Children under 12 ride for free

The main results of this action were:

The figure below shows the number of monthly passes sold in each quarter of the year compared to the previous year. In the first quarter of 2019, with no introduced measures, 4% more monthly passes were sold than the previous year.

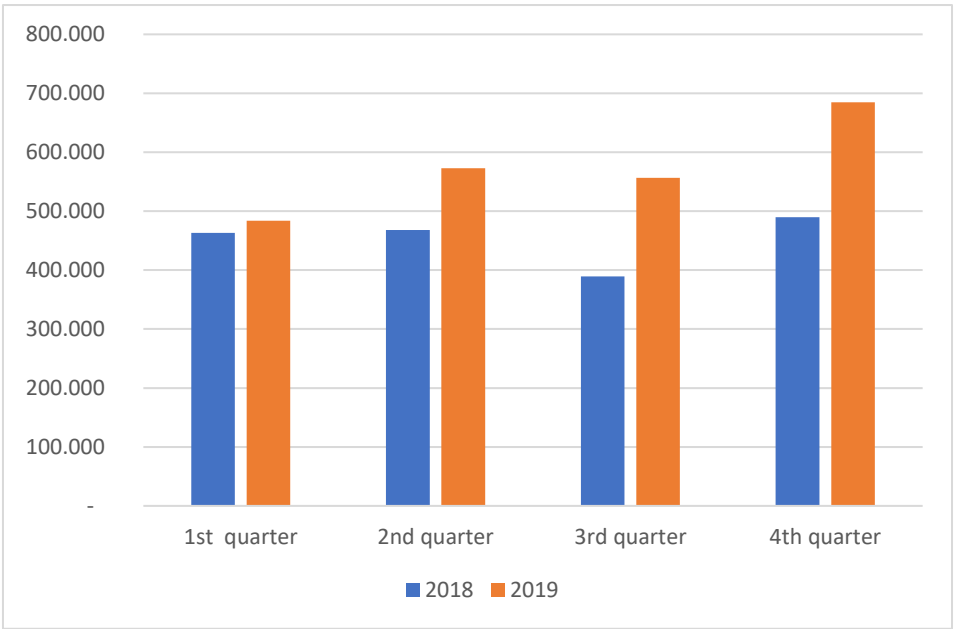
After implementing the measures, the number of sold passes increased drastically.

The number of passengers using public transport with a monthly pass showed similar growth to the number of monthly sold passes.

It should be noted that part of the change can be attributed to the increase in the number of operators in the intermodal system.

Nevertheless, an examination of the data for the Metro (light rail train) before and after the measures were applied reveals a similar increase in the number of users.

The costs of these measures were € 17.8 million, and they were financed by the Environment Fund (€ 15 million) and by the municipalities of the metropolitan region. The main objective of this measure was to quickly increase the number of people using the public transport with a better intermodal system and the same prices for everyone. In 2019, the goal to increase the number of users was reached. The next goal is to increase the offer of the public modes of transport.



Number of passes sold in the Metropolitan Area of Porto (Data from the TIP - Transportes Intermodais do Porto).

ACTION 1: Low-Emission Zone – Barcelona Ring Road (still in progress)

Barcelona registers high levels of pollution, especially PM_{10} particulates and nitrogen dioxide gas (NO_2), both of which are very noxious to human health, especially for some risk groups. A major part of these pollutants can be ascribed to the high volume of urban traffic. On a daily basis, over 1 million vehicles drive around Barcelona's access roads; nearly 800,000 vehicles across the city's main roads and almost 270,000 across the Barcelona Ring Road.

The Barcelona Ring Road Low-Emission Zone (LEZ) has been created as a response to traffic congestion and pollution to progressively restrict the traffic of the most polluting vehicles within the inner area of Barcelona, starting with the ring road and gradually covering the entire metropolitan area in the near future. The aim is to achieve a 30% reduction in traffic-related emissions in the next 15 years.

The Barcelona Ring Road LEZ covers 95 km^2 and encompasses the entire municipality of Barcelona, except for the neighbourhoods of Vallvidrera, el Tibidabo, les Planes, and Zona Franca. It also includes the surrounding municipalities of Sant Adrià de Besòs and l'Hospitalet de Llobregat and part of Esplugues de Llobregat and Cornellà de Llobregat.

The access restrictions became permanent on 1 January 2020; from then on, vehicles without a Spanish environmental badge (or the international equivalent) will not be allowed to travel within the inner area of Barcelona's Ring Road during workdays from 7 am to 8 pm.

Implementation

Works on the Barcelona Ring Road LEZ are progressing on schedule. During the last two years, the Barcelona Ring Road LEZ was scheduled to activate access restrictions only in cases of a high atmospheric pollution episode.

A number of important tasks have been executed during this initial stage, such as defining and equipping the area with the proper signalling, creating a working group with the participating municipalities, defining the technical specifications for the metropolitan management platform, and developing specific annual communication campaigns.

On 1 January 2020, the access restrictions became permanent and vehicles without a Spanish environmental badge (or the international equivalent) are not allowed to travel there during workdays from 7 am to 8 pm.

Street life in the Barcelona Ring Road Low-Emission Zone. Photo: Robert Ramos

REALISATION OF THE ACTION PLAN FOR THE METROPOLITAN AREA OF BARCELONA

Ruth Lamas Borraz

The Action Plan for the Metropolitan Area of Barcelona (AMB) consists of three actions:

- **Action 1: Low-Emission Zone – Barcelona Ring Road**
- **Action 2: The e-Bicibox Service**
- **Action 3: Metropolitan Parking Platform (AMB Aparcament)**

These three actions were selected because they integrated the most elements of the knowledge process from the SMART-MR project.

Furthermore, they are the most effective actions to contribute to the promotion of carbon reduction strategies (Axis 4 for Catalonia's policy instrument, ERDF OP) and to resource efficiency and environmental protection (Axis 6 for Catalonia's policy instrument, ERDF OP). All three actions are focused on improving the urban environment and revitalizing cities, one of the priorities of Axis 6 of Catalonia's policy instrument.

Web link:

http://www.amb.cat/en/web/amb

This step was achieved by changing the vertical signalling along the perimeter of the affected Ring Road and implementing a technological vehicle control system and a technological platform for the management of the exemption register. Furthermore, all the involved

municipalities have coordinated to approve the same LEZ regulation in their localities, making them obligatory for vehicles, determining the exemptions (mainly emergency services) and the exact authorizations. The regulation foresees a one-year moratorium period on commercial vehicles and a gradual sanctioning regime.

An extensive communication campaign has been developed explaining the measure through different communication channels (print, radio, and television). A LEZ web page has been created with all the relevant information. A telephone number has also been set up for customer service as well as an on-site information point in AMB's headquarters.

ACTION 2: The e-Bicibox Service (still in progress)

The success of public bicycle-sharing experiences in many European cities and metropolises as well as the already existing Bicing service in the city of Barcelona have led the AMB to consider the possibility of offering a similar solution to promote bicycle usage as a clean and sustainable mode of transport.

In recent years, the AMB has been developing the Bicivia network, which represents a network of metropolitan cyclable and walkable tunnels that quickly, directly, and safely connect the metropolis from north to south and from east to west. Although the Bicivia network has not yet been completed, interurban connections for pedestrians and bicycles have been significantly improved.

The AMB has been developing the suitable environment for soft transport modes, such as walking and cycling, increasing and enhancing the public space dedicated to pedestrians and cyclists, and at the same time promoting, creating, and regulating bicycle-sharing.

The *e-Bicibox* represents the newest electric bicycle-sharing service in the Metropolitan Area of Barcelona. The AMB has chosen the Bicibox service, which is already in operation, to implement a new feature of incorporating a public e-bicycle sharing scheme.

The management of this new e-Bicibox public bicycle-sharing system uses Bicibox modules as stations for the renting and returning the electric bicycles, since they offer more security and protection against vandalism. The e-Bicibox electric bicycle service features removable batteries and a GPS tracking system that accurately tracks the exact location of the vehicle at all times and provides information on the battery charge level.

Implementation

In 2019, the AMB launched the first phase of the e-Bicibox service with a fleet of 300 bicycles (272 in service and the rest on deposit or in maintenance) in the municipalities where the Bicibox private bicycle-parking service had already been consolidated. The bicycles have been distributed among 45 stations with 14 spots each, where they will be collected and returned between 7 am and midnight. In total, 630 parking spots are available, guaranteeing free parking in any station during the entire day.

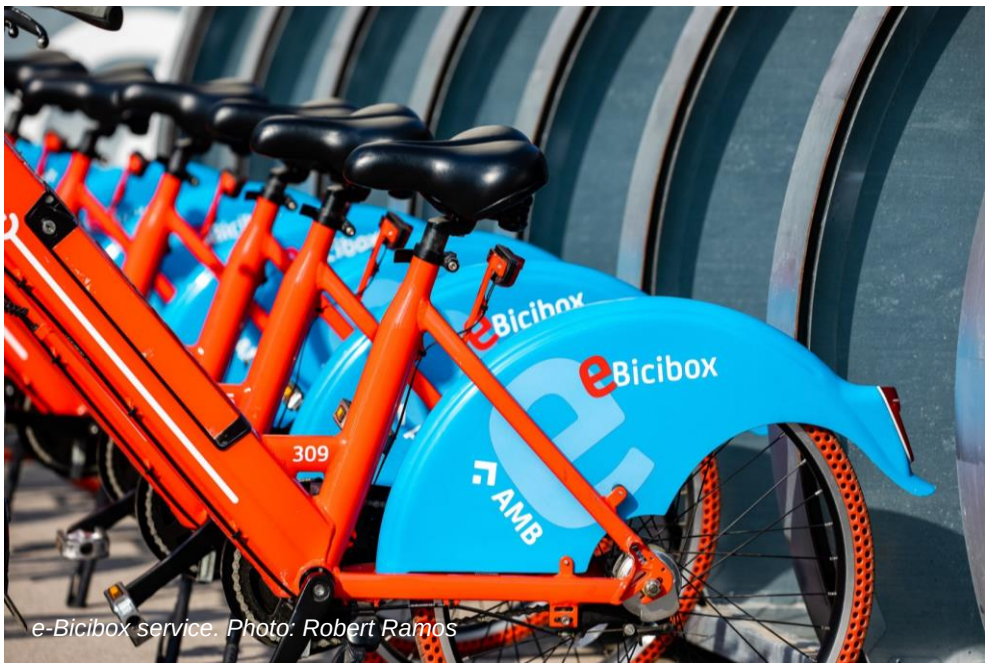
Users pay an annual fee of € 30. The first half an hour of usage is free of charge; any additional time accrues a fee. The service is available 365 days of the year.

During this initial phase from the launch of the service until 31 January 2020, 557 users have registered and a total of 28,180 trips have been made. In general terms, the first phase has begun as projected and its objective to consolidate the e-Bicibox service in terms of users and usages has been maintained.

Information about the e-Bicibox service is available on its webpage where users can register, sign up, and access their personal account. In addition, an application for mobile devices has been created, in which users can get information regarding the service (module location, availability of bicycles ...).

ACTION 3: Metropolitan Parking Platform (AMB Aparcament, still in progress)

The Metropolitan Parking Platform integrates new technologies in urban



e-Bicibox service. Photo: Robert Ramos

mobility management and in particular in the management of parking in regulated parking areas. To this end, the aim of the AMB's Metropolitan Parking Platform is to optimise and simplify travel in urban cores by providing a solution to ease the search for a parking space in real time and hence avoid driving in circles, looking for a parking spot.

AMB Aparcament is an application for smartphones that allows users to manage and pay the fees in the regulated areas of nine different municipalities (Barcelona, Badalona, Castelldefels, l'Hospitalet de Llobrergat, Esplugues de Llobregat, El Prat de Llobregat, Santa Coloma de Gramenet, Sant Joan Despí I Sant Just Desvern) in the metropolitan area of Barcelona, which eliminates the need to go to the parking meter every time the parking period is over and a new operation is required. The mobile app also allows users to consult the time they have left in an ongoing parking session and shows the exact location where the vehicle is parked.

The application allows the authorities to improve traffic planning and facilitate parking management in regulated parking areas, but not only that: by integrating in the same application, these municipalities (except Barcelona) have begun the process of standardizing and homogenizing the parking characteristics (schedules, maximum duration of parking, and operational control). In addition, a reference framework will be integrated into the regulatory framework of each municipality, which will establish a joint strategy on key elements, such as tariffing.

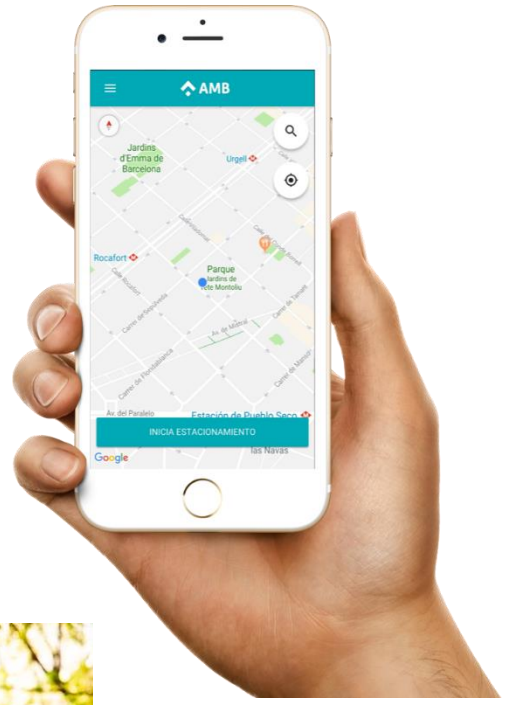
Implementation

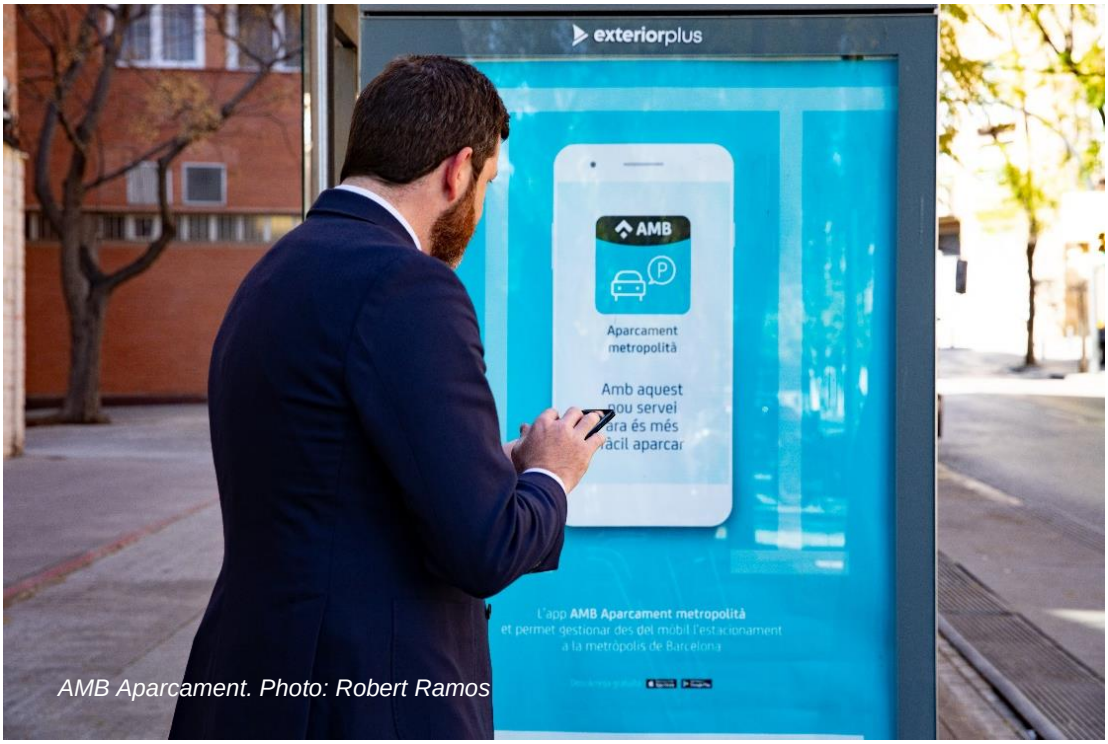
The app was launched in April 2019, at first in five municipalities. A sixth one was added in September 2019 and three more municipalities have been included recently. This has meant the same application can be used to manage the parking areas of nine municipalities of the Metropolitan Area of Barcelona.

The initial planning foresaw the expansion of the AMB Aparcament to five municipalities during 2020, meaning this objective is currently maintained.

The first quarter of 2019 featured the launch of the application as well as a specific communication campaign through different communication channels (print and online). Information about the service and the application is available on the webpage.

The latest management report for the app with data for December 2019 shows a positive evolution for the majority of the indicators. For example, the number of downloads has shown a constant increase, reaching its peak last December with 1,993 downloads. A similar trend is occurring in terms of the active users or the number of monthly operations, showing a constant increase with a peak last December with around 4,100 active users or 8,500 monthly operations.





AMB Aparcament. Photo: Robert Ramos

Metropolitan region	Partner
Ljubljana	Research Centre of the Slovenian Academy of Sciences and Arts
	Regional Development Agency of Ljubljana Urban Region
Oslo/Akershus	City of Oslo, The Agency of Urban Environment
	Akershus County Council
Göteborg	Göteborg Region Association of Local Authorities
Helsinki	Helsinki Region Environmental Services Authority
Budapest	BKK Centre for Budapest Transport
Rome	Metropolitan City of Capital Rome
Porto	Porto Metropolitan Area
Barcelona	Barcelona Metropolitan Area

Interreg Europe project SMART-MR (Sustainable measures for achieving resilient transportation in metropolitan regions) supports local and regional authorities in eight European metropolitan regions to improve mobility policies. It also aims to provide sustainable measures for achieving resilient low-carbon transportation and mobility in metropolitan regions of Barcelona, Budapest, Göteborg, Helsinki, Ljubljana, Oslo/Akershus, Porto and Rome. Project will be running from April 2016 until March 2021 and is coordinated by the Research Centre of the Slovenian Academy of Sciences and Arts and funded by European Regional Development Fund.

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