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# A SUSTAINABLE URBAN MOBILITY PLAN - SOLUTION FOR A CITY OF THE FUTURE?

Literature Reviews

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## Abstract

*A Sustainable Urban Mobility Plan (SUMP) is a strategic document and an instrument of development policy, complementary to the General Urban Plan (GUP) using a transport model (software simulation), aimed at improving accessibility and better integration of different modes of mobility and transport in Bucharest-Ilfov region. It aims to achieve, during 2016-2030, an efficient transport system, integrated, sustainable and safe, to promote economic, social and territorial cohesion and to ensure a better quality of life, including a list of measures / projects to improve mobility in the short, medium and long term. Also Sustainable Urban Mobility Plan (SUMP) is a pre-condition for financing from European funds 2014-2020 (ROP and Operational Programme Large infrastructure).*

## INTRODUCTION

In the first part of January 2016, the Bucharest City Hall and Ilfov County Council put into public debate Sustainable Urban Mobility Plan 2016-2030 (SUMP) Bucharest-Ilfov Region 1 Final Report, representing a transport strategy for the region, which is prepared by Rom Engineering Ltd and AVENSA Consulting SRL. Sustainable Urban Mobility Plan 2016 - 2030 (SUMP) Bucharest-Ilfov region covers Bucharest municipality (divided into 6 main sectors and 27 districts) and Ilfov County, consisting of 40 administrative units including 8 cities (Bragadiru Buftea Chitila, Magurele, Otopeni Pantelimon, Popești-Leordeni and Volunteers) and 32 commons (1 Decembrie, Afumați, Balotești, Berceni, Brănești, Cernica, Chiajna, Ciolpani, Ciorogârla, Clinceni, Copăceni, Corbeanca, Cornetu, Dărăști-Ilfov, Dascălu, Dobroești, Domnești, Dragomirești-Vale, Găneasa, Glina, Grădiștea, Gruiu, Jilava, Moara Vlășiei, Mogoșoaia, Nuci, Periș, Petrăchioaia, Snagov, Ștefăneștii de Jos, Tunari și Vidra). The study area has a total area of 1,821 km<sup>2</sup>, of which 13.1% represents the administrative territory of Bucharest and 86.9% represents the administrative territory of Ilfov County. Bucharest is the capital and largest city in Romania, with a population of 1,883,425 inhabitants official in 2011.

Ministry of Regional Development and Public Administration (MDRAP) identified seven growth poles, along with Bucharest-Ilfov region, as polycentric growth areas in Romania. A key component in the growth poles policy is to promote urban development through the development of sustainable transportation. Sustainable Urban Mobility Plan (SUMP) outlines strategies, policy initiatives, key projects and priorities for sustainable transport, to support sustainable development in economic, social and environmental protection, growth poles in the regions.

According to European recommendations, a Plan of Sustainable Urban Mobility is a strategic document and a tool for developing specific policies, based on a transport model developed by software modeling traffic being developed to meet the mobility needs of people and companies in the city and surrounding areas for a better quality of life while contributing to achieving European goals in terms of energy efficiency and environmental protection.

The procedures for achieving a sustainable urban mobility plan are integrated into the European Union, being made by the European Commission and distributed to all countries (SUMPs - Sustainable Urban Mobility Plan) - *Developing and Implementing a Sustainable Urban Mobility Plan: European Commission*.

Guidelines for the *Development and Implementation of a Plan of Sustainable Urban Mobility* were published in January 2014 by the European Commission; they are intended to provide support and guidance for urban party concerned in the development and implementation of a plan for sustainable urban mobility.

SUMP achievement and respect are conditions in order for the countries / cities to access European funding for projects targeting transportation. In this regard, all SUMP must have a certificate issued by the company that made SUMP, stating that the guidelines are followed.

Under national law (Law 350/2001 regarding regional planning, republished with additions and changes in December 2013 and Order no. 233/2016 approving the Methodological Norms for the application of Law no. 350/2001 on regional planning and development and updating of planning documents), the Plan for Sustainable urban Mobility is a supporting documentation territorial development strategy peri-urban / metropolitan and general urban plan (PUG) and the instrument of territorial strategic planning that is related to spatial development of settlements and peripheral areas / metropolitan their needs for mobility and transport of people and goods.

Following the integrated approach supported by the European Commission, the developing Sustainable Urban Mobility Plans (PMUD) is required in order to finance urban transport projects in the Regional Operational Programme 2014-2020 and the Operational Programme 2014-2020. Develop and implement a Sustainable Urban Mobility Plan aims at an integrated approach with a high degree of cooperation, coordination and consultation between the various levels of government and between authorities. Local authorities need to create and develop adequate structures and procedures to manage such a plan.

Thus, according to a press release from the Ministry of Regional Development and Public Administration (MDRAP), a budget of 2.3 billion euros will be allocated in 2014-2020 exclusively for sustainable urban mobility projects, the Regional Operational Programme (ROP) managed the Ministry of Regional Development and Public Administration (MDRAP). The areas covered are: improving urban public transportation, electric transportation and non-motorized investments aimed at reducing CO<sub>2</sub> emissions in urban areas.

Investments that cities can achieve through this program are diversified Regional Operational Programme (ROP) compared with 2007-2013. It is, for example, about the purchase of public transport, modernization of trams, e-ticketing systems, pilot projects introducing public transport, intermodal terminals, filling stations for electric vehicles, urban reforestation etc. The program addresses all categories of cities.

SUMP would correlate with the Master General of Shipping (GTMP), the General Urban Plan (GUP), the Regional Development Plan (RDP BI), local strategies for urban development, as well as sectorial strategies for social services, health, education, job creation and economic development in the region.

### **THE IMPLEMENTATION OF SUSTAINABLE URBAN MOBILITY PLAN (SUMP) - A NECESSITY?**

The guidance document on *'Developing and implementing a sustainable urban mobility plan'* were published in January 2014 by the European Commission to provide support and guidance for urban transport stakeholders in the development and implementation of a sustainable urban mobility plan.

The main objectives of an Sustainable Urban Mobility Plan must be: to provide different transportation options to all citizens, so as to allow access to destinations and essential services; improving safety and security; reducing air and noise pollution, gas emissions and greenhouse energy consumption; improving the efficiency and profitability of transportation of people and goods; ncreasing the attractiveness and quality of urban environment and urban landscape for the benefit of citizens, the economy and society as a whole.

According to a notice to the European Commission on September 25, 2014, the Commission calls on Romania to take measures to reduce air pollution Bucharest, Iasi and Brasov are required to adopt these measures because the European Commission started the infringement procedure on air pollution (traffic road is the main polluter).

According to this notice, Romania fails to protect its citizens from pollution with fine particles (PM10). These fine particles come from emissions from industry, traffic and domestic heating and can cause asthma, cardiovascular problems, lung cancer and premature death. According to EU legislation, Member States are required to limit citizens' exposure to particles of this type. Citizens of certain areas in Bucharest, Brasov and Iasi were exposed to unhealthy levels almost continuously for PM10 since 2007, according to latest reports from 2012.

The Commission considers that Romania has not taken appropriate steps since 2007 to protect the health of citizens and calls Romania to take measures perspective rapid and effective for the period of non-compliance should be as short as possible. This action, which is technically a supplementary reasoned opinion, following a letter of formal notice sent in February 2013. Additional if Romania does not act, the Commission may refer the case to the EU Court of Justice.

On September 9, 2015 it was adopted a second resolution on the implementation of the 2011 White Paper, which has the subtitle *"Assessing the current situation and the way forward for achieving sustainable mobility."*

In the context of the review of the White Paper mid-term, Parliament called on the executive to maintain a minimum level of ambition of targets. In particular, the deputies insisted be given an overview of the status of implementation of the 40 initiatives described in Annex White Paper (which the Commission made by the publication of the working document on 1 July 2016). Parliament made a number of recommendations aimed at integration of all modes of transport in order to achieve a transport system more effective, sustainable, competitive, accessible and practical for users. Among the main points mentioned are modal shift and co-modality, modern infrastructure and smart funding urban mobility, placing users at the heart of transport policy and global dimension of transport.

### **THE BENEFITS OF DEVELOPING AND IMPLEMENTING A SUSTAINABLE URBAN MOBILITY PLAN**

The guidance document on *'Developing and implementing a sustainable urban mobility plan'* elaborated in 2013 for the European Commission and the Executive Agency for Competitiveness and Innovation (EACI) European Union use, outlines **the main ten benefits** which are, in the same time, ten main arguments to convince decision makers from local administrations of the added value of a sustainable urban mobility plan. Thus, the main ten benefits are: **improving quality of life, saving costs – creating economic benefits, contributing to better health and environment, making an uninterrupted mobility and improving access, making more effective use of limited resources, winning public support, preparing better plans, fulfilling legal obligations effectively, using synergies, increasing relevance, moving towards a new mobility culture.**

*Quality of life* is an important indicator that measures the attractiveness of public spaces, the safety of the roads, the level of air pollution or the the level of noise pollution air.

*Saving costs by creating economic benefits* could be consider another main benefit of a sustainable urban mobility plan. Mobility is very important for any local economy. The potential investors will want to develop the communities that pay special attention to the problems regarding the environment and congestion reduction.

The main difference between the planning process described in the guidance document on *'Developing and implementing a sustainable urban mobility plan'* and a more "traditional" planning

process is the core - focus on people and not only on traffic aspects, accessibility and quality of life, as well as sustainability, economic viability, social, equity, health and environmental quality being also very important, they describing qualitative indicators of life.

Experts of International Association of Public Transport (UITP) noted in their Study "*Public transport: the smart green solution!*" that the public transport provides *green local jobs*, in many cities the public transport network being one of the major employers. In Europe, for exemple, public transport operators alone created 1,200,000 direct jobs and every direct job in public transport is linked to four jobs in other sectors of the economy. Public transport represents between 1 and 1.2% of European Union GDP. That means every euro of value created from public transport is linked to a further value creation of 4 EUR in the total economy.

The global energy demand for transport has increased fivefold since the 1950s. According to the experts of International Association of Public Transport (UITP) the transport is responsible for approximately 23% of energy-related CO<sub>2</sub> emissions on a global level and 13% of all greenhouse gas globally. It seems that, on average, public transport consumes **3.4 times less energy** per passenger x kilometre than automobiles, this ratio being more favourable during the rush hours. For exemple, in **Vienna**, public transport supply density is about 75% higher than the average for West-European cities and is increasing by about 3% per year according to the Experts of International Association of Public Transport (UITP) in their Study "*Public transport: the smart green solution!*". Using a strongly integrated public transport and an urban planning, the authorities have managed to increase the public transport modal share: 29% in the mid 1990s, 35% today, and an expected 40% by 2020. Public transport ridership in Vienna currently stands at about 500 journeys per inhabitant per year, a performance which is, with Zurich and Munich, a European benchmark.

Experts of International Association of Public Transport (UITP) presented in their Study "*Public transport: the smart green solution!*" a case study about the public transport development in Geneva (Switzerland).

Early 2000s, **Generva** adopted an ambitious public transport policy because mobility development projections showed that private motorised mobility would have increased by 42% between 2006 and 2020. Thus, doubling public transport ridership by 2020, the authorities managed to limit the growth of private motorised mobility at 25%.

Generva elaborated a public transport master plan which envisaged a 26% increase in public transport supply between 2006 and 2010, following an

increase of 25% between 2002 and 2006. Measures applied included an increase in supply of tramway services, a better reporting of supply to mobility needs throughout the day, the improvement of operational efficiency, and further steps towards the development of a comprehensive suburban railway network (CEVA project).

Another big problem that a Sustainable Urban Mobility Plan has to find a solution is the **congestion** which invades cities, making these unattractive places to live and work in. The main causes of traffic congestion are: the continuous urbanisation and the increasing mobility demand in urban areas.

According to the Experts of International Association of Public Transport (UITP), the direct cost of congestion is estimated at around 2% of GDP, representing billions of euros every year. In the not too distant future, the employees which travell to work by car will need approximately the same amount of space to work in their offices as they need to park their car (about 20m<sup>2</sup> per person). Scary, does not it? That is why, the Experts consider that the investments needed to improve mobility and accessibility are at a level far below the costs of congestion or the external costs and social impacts of this.

## CONCLUSIONS

The demand for public transport has been growing and will continue to do so in most parts of the world due to urbanization, energy prices or environmental concerns, expectations from public transport growing, also, in qualitative terms as well (for example, lifestyle).

*The 2014 revision of the World Urbanization Prospects* elaborated by the United Nations notes that, at the moment, 54 per cent of the world's population lives in urban areas, a proportion that is expected to increase to 66 per cent by 2050, urban population of the world growing rapidly from 746 million in 1950 to 3.9 billion in 2014.

Thus cities are becoming ever more crucial for economic development and job creation, turning into poles of growth.

In present, **green growth** is considered a major factor of economic recovery in developed economies, and a condition for sustainability in developing economies, sustainable urbanization being the key to successful development.

The United Nations report notes that are needed a successful **urban planning agenda** because the cities could offer important opportunities for economic development and for expanding access to basic services, including health care and education, for large numbers of people.

Also, providing **public transportation**, as well as housing, electricity, water and sanitation for a densely settled urban population is typically

cheaper and less environmentally damaging than providing a similar level of services to a dispersed rural population.

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