

7th INTERNATIONAL CONFERENCE
"TOWARDS A HUMANE CITY"
Environmentally Friendly Mobility
Novi Sad 6th and 7th December 2019

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SUMP FOR THE CITY OF BANJA LUKA

Key Words

Transportation
planning;
Smart city;
Traffic forecast;
Land use study

Abstract

Sustainable Urban Mobility Plan - SUMP for the town of Banja Luka is conceived in accordance with spatial, economic, social characteristics and possible sources of financing. The proposed measures of traffic policy and the policy of land use, as well as the action plan of implementation and monitoring, are the result of the analysis of the specific conditions of implementation for the city and its surroundings. The plan was made for the period until the year of 2028.

1. INTRODUCTION

In the City of Banja Luka, the city centre (city core) is actually a functional urban space (FUA) for which the official data exist. The City consists of 57 smaller territories, in which one person is in charge of collecting the citizens' requests and bringing them to the headquarters of the town administration that contains all the city management services. The surface area of Banja Luka is large, but the majority of the population is located in the urban area. The implementation of strategic planning documents, such as the Urban Plan, had been interrupted due to war. Under such circumstances the problem occurred in the city, due to the fact that an increase in the number of motor vehicles was not followed by the construction and development of the infrastructure. Banja Luka is the main administrative centre of Republika Srpska, one of the two territorial units in Bosnia and Herzegovina. In the town centre there are almost all the Ministries of Republika Srpska, the Tax Administration, the Geodetic Authority, the city administration and authority, as well as a large number of public companies. In

addition to administrative and business facilities, in the town centre there are most of secondary schools, banks, commercial and catering facilities. Trips to the town area can be conducted in three possible ways: by using passenger cars, as pedestrians and by using buses.

Sustainable Urban Mobility Plan - SUMP for the city of Banja Luka has been conceived in accordance with spatial, economic, social characteristics and possible sources of financing. The city of Banja Luka in the previous period has made a few serious steps which are in accordance with the goals of sustainable town development: signing the *Covenant of Europe Mayors*, creation of *SEAP (Sustainable Energy Action Plan)*, creation of *LEAP (Local Ecological Action Plan)* for Banja Luka. However, due to social surroundings and known situation after the breakup of Yugoslavia, there is an evident lack of spatial plan documentation and strategic plans for the development of the city traffic system, as well as the data base which are the basis for different measures analysis, defining and testing. For this reason, the first phase of SUMP creation was directed to spatial planning documentation collecting and uniting and the analysis of the current state. After this phase of the project, based on the research results, comprehensive goals of SUMP have been defined, and in accordance with them, the instruments and priorities of work.

2. ANALYSIS OF CURRENT STATE

Analysis of the number of registered vehicles demonstrates that there has been a rising trend in the number of passenger cars in recent years, thus in comparison to 1990, the number of passenger cars has almost doubled. An increase in the number of passenger cars and average age of passenger cars of more than 15 years is the major problem for traffic safety and environmental pollution.

The network of public transport lines is well developed and population from almost all parts of the city has a direct connection (without interchanges) with the central city area. All the suburban settlements have a connection with Banja Luka by bus lines.

The above mentioned indicators with daily migration of the surrounding regions' population towards Banja Luka indicate that continuation of the current development trend of traffic system in Banja Luka would have a negative impact on the development of the City in the next years, which would be manifested through the following aspects:

- Increase of the participation of passenger cars to meet the mobility needs,
- Increase of traffic congestion and crowded streets,
- Negative impact on the environment and economic activities,
- Insufficient quality of public transport,
- Reduction of the number of passengers in public transport,
- Insufficient number of parking space and problems related to parking,
- Bicycle traffic will be very poorly developed,

- The traffic safety will be very poor.

Unless the policies change and activities direct towards creating a sustainable transport system, Banja Luka will become a city of cars that have an advantage over people. Integrated and sustainable mobility will not exist, and the city will lose its attractiveness and comparative advantages for development that it currently possesses in comparison with other cities in wider region.

3. GOALS

SUMP for City of Banja Luka has following goals:

1. **Active mobility and carless lifestyle** - refers to Banja Luka citizens attitude on the mobility and its realization. Almost every movement in the city, except going to school, in the last 15 years, is done by car. In order to change attitudes and behavior of the citizens and to promote new lifestyle based on other transport means, following priorities are defined:
 - To increase public transport usage – first choice for movement in the city
 - To increase usage of bicycles
 - To increase number of pedestrians
 - To increase accessibility and better conditions for public transport usage to the specific groups: children, elderly people and people with disabilities.
2. The second comprehensive goal is to **reduce the risk of traffic and traffic systems in order to increase the quality of life in Banja Luka and security**. The consequences of traffic, especially the traffic of passenger cars, are traffic accidents. Numerous examples have shown that the use of repressive, strict legal and regulatory measures, or interventions on the street network, cannot achieve the desired goals related to the number and structure of traffic measures in cities. Negative traffic products are emissions of pollutants, gases and substances that affect the increase of local and global pollution, as well as noise. To achieve this goal, the following priorities are defined:
 - To increase the level of traffic safety,
 - To reduce the emissions of pollutants,
 - To reduce the level of noise.
3. The third overall objective is **to increase the efficiency** that can be achieved above all through openness and accessibility. In order to increase efficiency and accessibility, the following priorities are defined:
 - The City of Banja Luka - good international accessibility,
 - Efficient mobility,
 - Increased accessibility to the city center and its regional capacities for all transport modes/means.

4. PROPOSED MEASURES AND INDICATORS

In accordance with the set goals and priorities of the development, various infrastructure and soft measures have been proposed for the creation of a sustainable traffic system in Banja Luka:

1. ***Creation of Urban City Plan and Transportation model by 2021*** - City Urban Plan represents a managerial policy of land use which directly influences the choice of non-motorized aspects of transport for the realization of journeys, thereby directly affects the realization of all project goals. Transportation model represents a set of relevant data (numeric, graphic and other), indicators, parameters and simulation models, in the way that in spatial coverage of the model and different time horizons, features and behaviour of the transportation system from the past can be reconstructed, certain regularities of transportation demands and offer can be determined on one hand, and on the other hand socioeconomic and spatial parameters. The current state of the transportation system has to be determined and estimated. Transportation system functioning has to be forecast and designed, or parts of it in the future, certain, existing or states defined by development scenarios have to be assessed by applying the elements of Transportation model.
2. ***Development of five zones of calm traffic by 2028***, which means the change of traffic regime by integrating all aspects of transport alongside the reconstruction of street profile.
3. A specialized site and printed publications for the promotion and informing in public transport, development of information centre, informing in real time at transportation stops and via mobile apps, that is, development of the functional informing system in the system of public transport in order to increase the use of public transport, especially for work journeys.
4. Data base, that is, a comprehensive base of socioeconomic characteristics on the area covered by transportation model, parameters and indicators of traffic demands and offers of the system and data on the land use and purpose.
5. Measures for the increase of public transportation participation in terms of modal distribution, defined through 3 special packages of measures in the field of public transportation, which will have a direct or indirect influence on the increase of public transportation participation in modal distribution, that is:
 - 5.1. Increase of number of buses
 - 5.2. Increase of the density and number of public transportation lines
 - 5.3. Increase of public transport accessibility
6. Construction of a system “park and ride” (P&R system) by 2023, as an infrastructure measure, whose implementation would enable the use of public transport to the outer migrants for everyday journeys towards the central zone of Banja Luka.
7. Parking policy (regime and fares) in order to improve the accessibility to the central zone of the city for business and commercial purposes by 2020-regulative and economic measures in the field of parking which have the most

significant influence on the reduction of passenger cars use and all accompanying negative effects, that is, the increase of all aspects of traffic system sustainability.

8. The design of the project for the development of cycling traffic by 2021 - a useful instrument for the organization of measures which encourage cycling, with a general aim to increase the participation of bicycles in relation to other means of transport.
9. The construction of 5 multimodal bus stops by 2024, which will enable cyclists' leaving their bicycle in a secured space and continuing their journey by bus, as well as enabling passengers who came by bus to take a bicycle and continue their journey.
10. A specialized website for cyclists, which includes web services and information altogether with marketing measures, therefore it offers an interactive platform, both for user and planners.
11. The increase of the number of bike sharing stations from 4 to 14 by 2025 and the number of bicycles in the system to 100.
12. The construction of 30 cycling parking sites at attractive locations.
13. The increase of the length of cycling paths from 14 km to 30 km, in the way that the existing and planned cycling paths are connected into a functional network which will enable a safe approach by bicycle to most attraction zones in Banja Luka.
14. The construction of 1 regional cycling route by 2023, as the first international cycling route which would connect the area of Banja Luka with the existing routes in the surroundings.
15. Promotional activities, media and public campaign about the recommendations for the use of public transport, bicycles and walking. The predicted activities will include not only the citizens but also the decision makers and planners in the local authorities.
16. Enabling accessibility to all facilities of tourist attractions in the central zone, bordered by the streets Olimpijskih pobednika, Gundulićeva, Aleja Svetog Save, Vase Pelagića, Tržnička, Bulevar Cara Dušana, Kninska, Vidovdanska, and Krajiškog Korpusa Street.
17. Vehicles speed limit at 30 km/h in the zones which are primarily residential.
18. Reduction of pedestrian waiting time at traffic lights in order to decrease the number of irregular pedestrian street crossing, pedestrian traffic and pedestrians would be treated at pedestrian crossings of the signalized intersections in relation to vehicles in accordance with the principles of sustainable development.
19. Promotion of sustainable mobility in 10 schools by 2023, with the aim of promotion of the aims of sustainable mobility to the young, that is, in secondary schools.
20. Reconstruction of the central pedestrian zone, as one of the measures which affects the increase of the attraction of the central town zone, which apart from

the primary has also got a secondary role, which is related to the promotion of walking as the most natural and the healthiest way of moving.

21. The introduction of a new concept of public space using in residential zones, which would define the standards to be followed when new objects are constructed, then the necessity of the implementation of Traffic Impact Assessment Study when blocks of flats or offices are built.
22. Removal of all physical obstacles in the central zone for the disabled persons by 2022, in aim to adapt the existing facilities to the disabled in sense of accessibility increase, as well as the implementation of the concept Universal Design in creating traffic system and all its elements in the procedures of planning and designing.
23. Setting a display showing the vacant places in the central zone by 2022, which will affect the increase of the nearby facilities attraction, reduction of travel time and emission of harmful pollutants.
24. Traffic management centre, in the way that the centre should not exclusively work on the increase of level of service of motor vehicles traffic but it will be in the function of public transport, cyclists traffic and pedestrians, in order to exclude the possibility of stimulating the use of passenger cars through its activity.
25. Optimization of phase plans and implementation of measures for active management of signalized intersection functioning by 2023, which would react to the change in traffic demands at the intersection approaches.
26. The increase of funds for e-mobility from 70,000 KM to 200,000 KM by 2023, by the participation of the city in different international projects.
27. The increase of the number of stations for electrical vehicles charging from 2 to 3 by 2023, then keeping the leading position of the City of Banja Luka as one of the first cities in Bosnia and Herzegovina and one of the first in the region which financed the charging station for electrical vehicles.

5. CONCLUSIONS

Unlike conventional methods of traffic planning which are constituents of all traffic studies done on the territory of former Yugoslavia in the previous period, the contemporary method incorporated in SUMP means a significantly wider array of instruments of traffic demand management. The measures proposed in this manner mean a great number of soft measures of the encouragement of greater use of sustainable transport means.

Due to the fact that the city of Banja Luka has not had strategic plans in the field of traffic yet and that there are not any systematic activities regarding data collecting and analyzing controlled by the city itself, a special attention of SUMP is directed to the measures which will enable the creation of the information basis, data basis and transportation model.