

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

Jovan Hristoski, MSc¹

E-mail: jani.hristoski@unt.edu.mk

Goran Jovanovic, MSc²

E-mail: goran.jovanovic@appia.si

Andon Petrovski³

E-mail: 24ingbt@gmail.com

Olivera Petrovska, PhD⁴

E-mail: jani.hristoski@unt.edu.mk

¹ *Faculty of Technical Sciences, University Mother Teresa-Skopje, R. of N. Macedonia*
Mirce Acev str., no. 4, 1000 Skopje, MKD

² *APPIA doo Ljubljana*
Leskosekova cesta 9e, 1000 Ljubljana, SLO

³ *24 ING dooel Bitola*
Borka Talev str., no 24, 7000 Bitola, MKD

⁴ *Faculty of Technical Sciences, University Mother Teresa-Skopje, R. of N. Macedonia*
Mirce Acev str., no. 4, 1000 Skopje, MKD

SUSTAINABLE URBAN MOBILITY PLAN FOR MUNICIPALITY OF VELES 2019-2030

Key Words

Sustainable
urban mobility
plan;
Traffic planning;
Traffic studies

Abstract

Integrative traffic planning is a new way of planning that originates from experiences and good practices of many European cities and regions that have been working on successfully implementing its key principles. Its main objective is to reduce environment related burden caused by transport system and contributing to establishment of a sustainable, livable, attractive, accessible and healthy environment. The central element of the integrative traffic planning is Sustainable urban mobility plan (SUMP). It is based on EU documents and guidelines set by European commission. Integrated traffic planning does not reject, but upgrades current planning practices and it has a long-term and strategic vision striving towards sustainable mobility. SUMP is a document in which the Municipality of Veles drafted a set of measures which will help achieve a shift toward more sustainable transport modes and higher quality of living. The key to the change is a shift towards integrative traffic planning.

Public involvement in all stages of the planning process allows set a clear vision and goals whose achievement is measurable and that are accepted by relevant stakeholders and general public. SUMP of the Municipality of Veles is aiming towards an attractive public passenger transport, branched network of safe cycling routes and good conditions for pedestrians. It focuses on city center as a regulated, attractive, accessible and safe urban space. This paper summarized the sustainable measures and projects that are planned for implementation and have impact on the city and its inhabitants.

1. INTRODUCTION

Integrative traffic planning is a new way of planning that originates from experiences and good practices of many European cities and regions that have been working on successfully implementing its key principles. Its main objective is to reduce environment related burden caused by transport system and contributing to establishment of a sustainable, livable, attractive, accessible and healthy environment.

The central element of the integrative traffic planning is Sustainable urban mobility plan (SUMP). It is based on EU documents and guidelines set by European commission. SUMP offers possibility for transition from classic to modern and comprehensive traffic planning. Integrated traffic planning does not reject, but upgrades current planning practices and it has a long-term and strategic vision striving towards sustainable mobility.

SUMP is a document in which the Municipality of Veles drafted a set of measures which will help achieve a shift toward more sustainable transport modes and higher quality of living. It is aiming towards an attractive public passenger transport, branched network of safe cycling routes and good conditions for pedestrians. It focuses on city center as a regulated, attractive, accessible and safe urban space. Municipality of Veles will use the proposed document to upgrade existing spatial acts and strategic documents, leading to more comprehensive planning and inclusion of sustainable strategies into planning act.

2. SUSTAINABLE URBAN MOBILITY PLAN (SUMP)

A Sustainable urban mobility plan (SUMP) is a document that incorporates and upgrades existing strategic documents of municipality. It is a new way of thinking and planning that represents a step towards more sustainable traffic planning in the region - in line with modern guidelines and recommendations of the European commission.

SUMP is comprehensive integrated traffic planning that upgrades current planning practices and it has a long-term and strategic vision striving towards sustainable mobility. Sustainable urban mobility plan is a result of the participation of an expert

group on transport planning, local authorities and affected social groups. Local institutions and citizens played an important role in the creation of the document as their values and proposals serve as a basis for proposed measure packages.

The planning process consists of eleven main steps made up of 32 activities. They should be taken as part of a regular planning cycle in the sense of a continuous improvement process.

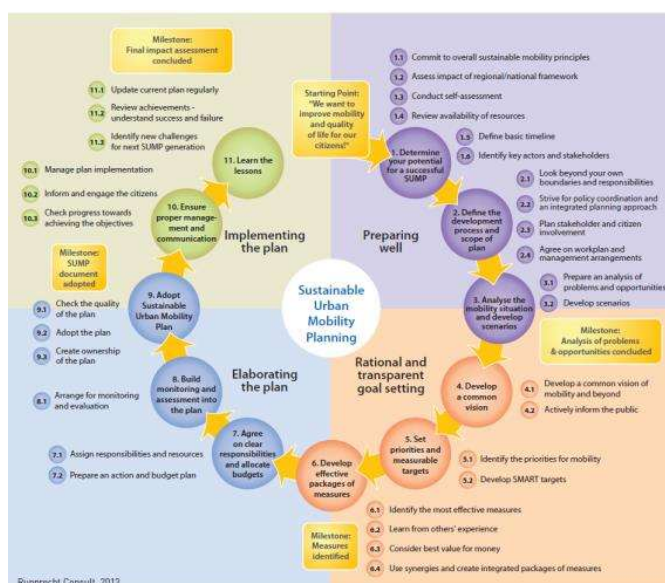


Figure 1. Planning cycle for a sustainable urban mobility plan, source: Guidelines, 2014, <https://www.eltis.org/guidelines/sump-guidelines>

3. SUMP OF MUNICIPALITY OF VELES

The document reflects the planned development of city of Veles and is prepared in line with existing spatial and urban planning documents. Individual measures can be implemented and coordinated with existing and incorporated in future planning documents. Infrastructural projects will be implemented in connection with soft measures, aimed at reducing demand for private motorised transport and incentivising other more sustainable modes of transport, strengthening each other's impacts.

In course of preparation of the document, public consultations regarding challenges and opportunities that municipality faces were held with local authorities and interest groups. The participants presented their aspects and views on the existing situation in the municipality while their comments were evaluated and utilised in preparation of proposed vision and measures.

3.1. Challenges

An analysis of the current situation in the Municipality of Veles was made in the framework of the development of the Sustainable Urban Mobility Plan.

Identification of current situation represents an important step in achieving sustainable mobility in the municipality of Veles.

UNSUSTAINABLE TRAVEL HABITS - In the development of Sustainable Urban Mobility Plan, a questionnaire was prepared for the general population of municipality. The survey of 4200 inhabitants (almost 10% of population) examines travel habits and the opinion of citizens on the current situation in the field of transport. Majority of population (53%) uses car as primary means of transportation. Other more sustainable means of transport are used by 47% of respondents of which 39% are pedestrians, 7% use JGPP and cycling only 1%.

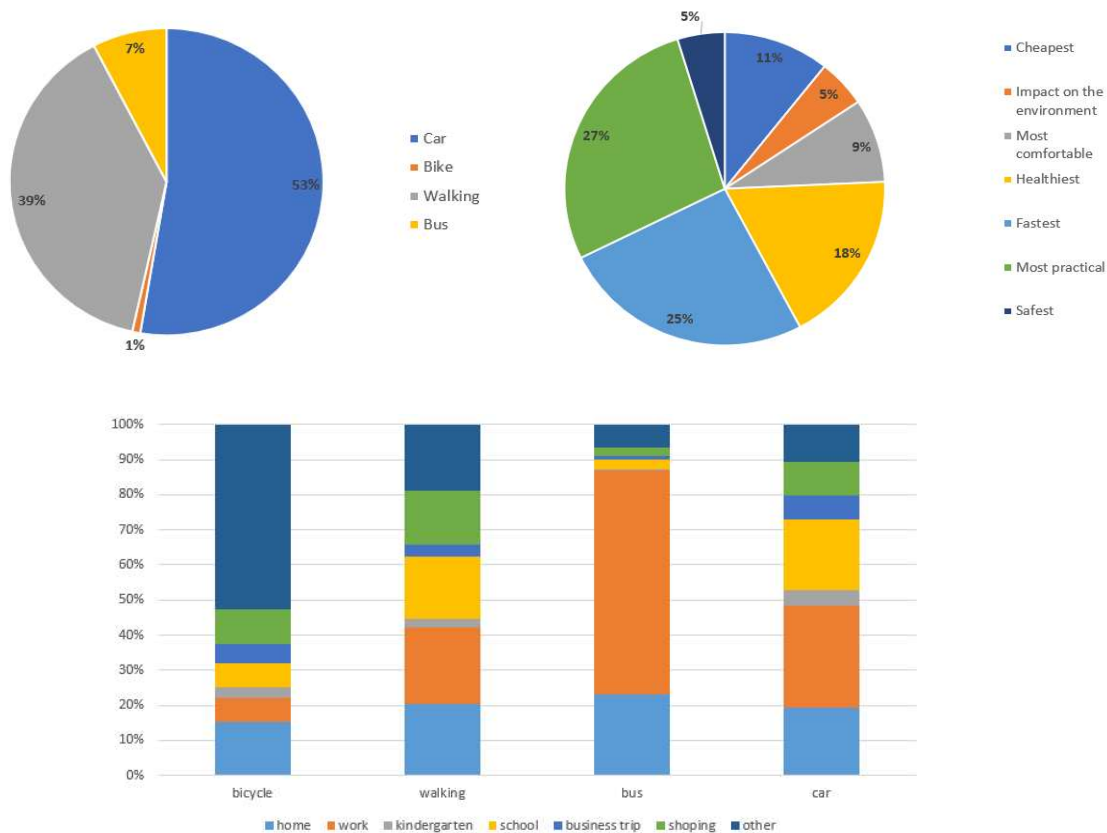


Figure 2. Modal split and purpose of trip by individual means of transport

LACK OF INTEGRATED TRANSPORT PLANNING -Traffic planning investments were oriented in motor traffic and in most of the cases were carried out within the framework regulation of motor traffic.

REDUCED ACCESSIBILITY FOR PEDESTRIANS - While the city centre is well equipped with pedestrian infrastructure the existing sidewalks are in many cases deteriorated, their surfaces are in bad condition and there are frequent conflicts in relation to other traffic modes (parking, crosswalks) in addition the infrastructure is inadequately equipped for access of sensory and physically impaired citizens.

UNSUITABLE CONDITIONS FOR CYCLISTS - Despite many advantages of cycling there is almost no cyclist infrastructure available in the Municipality of

Veles. In most of regional and local roads the cyclist is a subordinate position compared to the motor traffic.

UNOPTIMISED PUBLIC PASSENGER TRANSPORT - Public passenger transport has been largely neglected in urban planning after the increase in motorization and could not flexibly follow personal car use. Only 7% of citizens use public transport as their main mode of transport for daily trips. More than half of respondents never use public transport, and 31% use it rarely.

HIGH DENSITY OF MOTOR TRAFFIC IN CITY CENTRE – City of Veles is located on the X European corridor. The consequence of heavy traffic load (especially freight traffic) is a decrease in road safety and quality of life due to noise, vibrations and emissions. Illegal parking occurs on sidewalks, bus stops, traffic lanes and greenery and hinders accessibility for pedestrians (especially for people with disabilities) and cyclists and additionally decreases the attractiveness of the area.

3.2. Vision and objectives

The Municipality of Veles has the potential for successful future development of transport and the vision has been established as: *"The City of Veles will implement people-centric and environmentally friendly transport policy. Integrated and innovative approaches will encourage the establishment highest level of road safety and an environment for high quality of life and benefits local economy and tourism."*

Strategic objectives proposed in this document strive for liveable urban environment and safe and accessible transport network based on sustainable planning principles:

- Greater accessibility for all population groups for a higher quality of life in the municipality,
- Establishing greater integration, competitiveness and accessibility among all transportation modes, with an emphasis on existing public passenger transport,
- Establishing a smart parking policy that will relieve the city centre of vehicular traffic,
- To halve the number of accidents with serious injuries and to achieve zero mortality on the roads in the municipality,
- Promotion of sustainable travel methods for all groups of citizens, with an emphasis on young people.

3.3. Scenarios and transportation model

Within the framework of the working group and cooperation with stakeholders, four scenarios for the development of the transport network in the Municipality were designed. For each scenario, measures were identified that are integrated and verified using traffic modelling tools for the period 2019 to 2030 year.

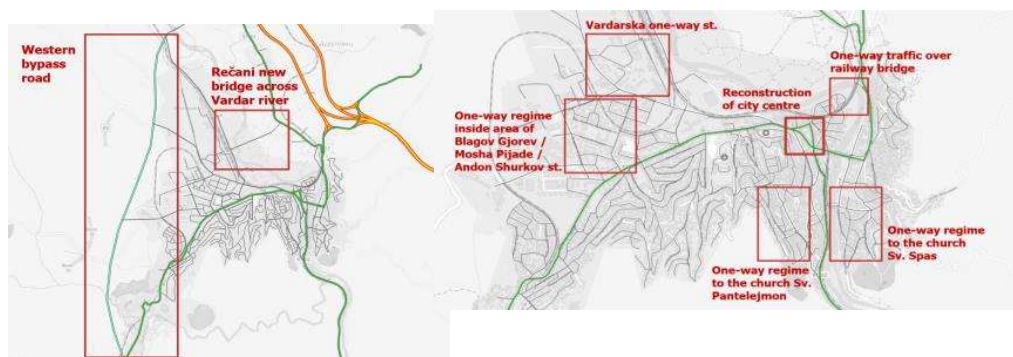


Figure 3. Different scenarios and measures for development of transport network

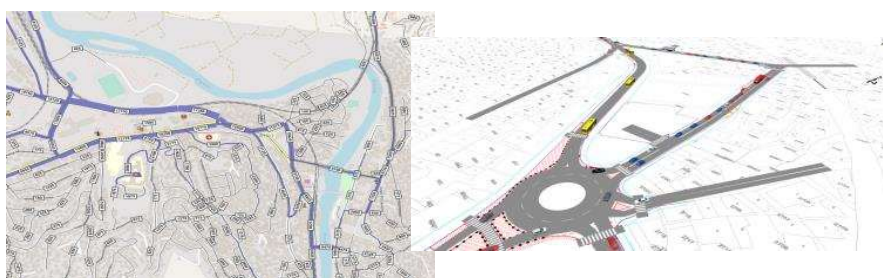


Figure 4. Transportation model and traffic simulation of city center

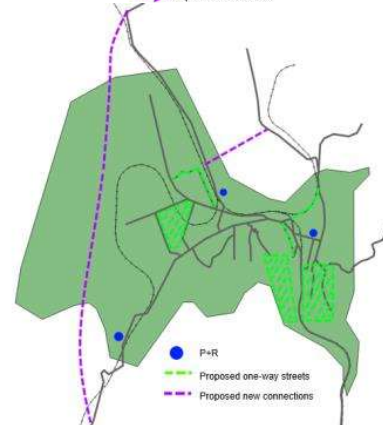
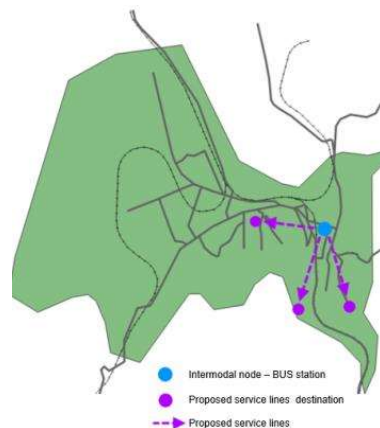
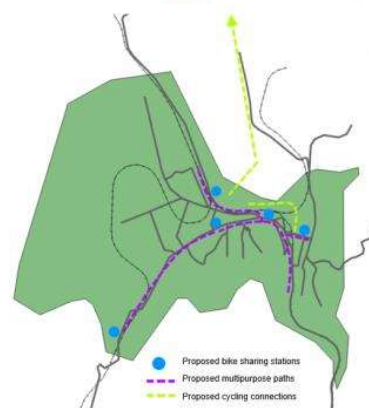
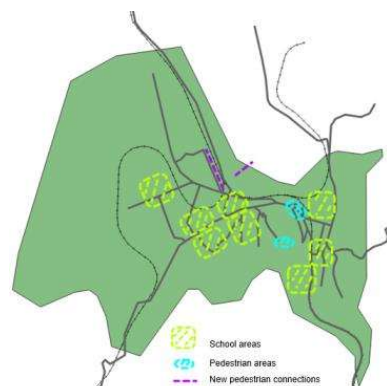
4. SUMP MEASURES

Sustainable urban mobility plan of the Municipality of Veles is based on five key areas of action. The objectives have been defined for five intervention areas and a set of measures was assigned to each of them. Measures include infrastructural projects and soft measures which will be developed and implemented and represent tools for implementation of the Plan. By realizing goals in complementary strategic areas, the vision of an intelligently organized city in the field of transport can be achieved.

	MEASURE - EFFECTIVE GOVERNANCE
G1	Acceptance, commissioning, revision and reform of the SUMP
G2	Personnel training in field of sustainable mobility and its implementation in planning processes
G3	Preparing a balanced budget
G4	Periodic survey on travel habits
G5	Promotional and educational campaigns for promotion of sustainable transport modes



	MEASURE – PROMOTION OF WALKING AS IMPORTANT TRANSPORT MODE
W1	Pedestrian areas
W2	Implementation of safe pedestrian crossings
W3	Building a new and improving the current infrastructure
W4	Adaptation of infrastructure for people mobility impairments
W5	Safe school routes documents
W6	Promotion of walking
	MEASURE – BICYCLING IMPROVEMENT
C1	Arrangement of cycling along the main road across the city
C2	Regulated traffic signalling on long distance cycling routes
C3	Construction of the bicycle network - multipurpose paths
C4	Parking lots for short-term and long-term parking of bicycles
C5	Bike rental system
C6	Promotion of cycling
	MEASURE – PUBLIC TRANSPORT DEVELOPMENT
P1	Improvement of existing bus stops and arranging safe access for Public transport users
P2	New bus service lines
P3	Reassignment of main bus station into intermodal transport centre
P4	A comprehensive study of the development of Public transport
P5	Public transport on-demand
P6	Promotional campaigns to promote the use of public passenger transport
	MEASURE – TRAFFIC FLOW OPTIMIZATION
M1	Implementation of a parking policy
M2	Regulation of one-way roads
M3	Implementation of P+R system
M4	Analysis and registry of accident blackspots
M5	Expanding the network of charging stations
M6	Extension of the road network
M7	New environmentally friendly vehicles
M8	Urban consolidation centre



5. CONCLUSION

Measures and projects that have impact on the city of Veles and its inhabitants are planned and will be implemented in line with the framework proposed in this document. Strategic transport development practices are in synergy with urban development of the area and give priority to increasing quality of life by promotion and implementation of sustainable measures.

Adoption of the SUMP of Municipality of Veles does not mean its conclusion, but a transition to its implementation.

The planning process will not come to an end with adoption of Sustainable urban mobility plan of Municipality of Veles. The process will continue with gradual preparation and implementation of proposed measures. The monitoring system is set to evaluate implemented measures and their contribution to set strategic goals. Integrated traffic planning is a cyclic process and should be considered as a continuous improvement process with regular reassessments and renewals.

REFERENCES

- [1] CH4ALLENGE Measure selection Manual – Selecting the most effective packages of measures for Sustainable Urban Mobility Plans, European Commission, Brussels, 2016.
- [2] CH4ALLENGE Monitoring and Evaluation Manual: Assessing the impact of measures and evaluating mobility planning processes, European Commission, Brussels, 2016.
- [3] General urban plan for City of Veles, 2008.
- [4] GREEN PAPER Towards a new culture for urban mobility, European Commission, 2007.
- [5] Guidelines. Developing and Implementing a Sustainable Urban Mobility Plan, European Commission, 2014.
- [6] WHITE PAPER Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, European Commission, Brussels 2011.