



STRATEGY OF PUBLIC PASSENGER TRANSPORT IN THE ZAGREB COUNTY – CURRENT STATUS AND PERSPECTIVES

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1 Introduction

By recent administrative organisation the Republic of Croatia is divided into counties, towns and municipalities. The Zagreb County, together with the Town of Zagreb, is the region having economical and other potentials that require travelling for various purposes, such as work, education, recreation etc. These travels generate large traffic volume which is typically daily return travel, wherein travels to and from work represent dominating share.

The current organisation of public passenger transport, intended to meet the needs of population in the region, reveals every day more and more shortcomings, both in organisation and in quality of services provided. It poses the objective need for analysis of the current transport organisation which would be the basis for improvement in organisation of public passenger transport in the region.

2 Current status

2.1 Service coverage area

Territory of the Zagreb County is bordered Republic of Slovenia in the west, with Krapina-Zagorje County, the capital Zagreb, Varaždin and Koprivnica-Križevci County in the north, Belovar-Bilogora County in the east and Sisak-Moslavina and Karlovac Counties in the south.

The backbone of economy of the Zagreb County comprises of small and medium-size entrepreneurship, agriculture and viticulture and, more recently, tourism. Here are some basic data:

Surface area:	3060 km ² ,
Population	309 696
Population density:	101.2 inhabitants per 1 km ²
Level of motorisation	340.5 vehicles/1000 inhabitants
Number of municipalities:	26
Number of towns:	8

The City of Zagreb is the capital of the Republic of Croatia and administrative, economic, banking - financial, scientific - research, educational - university and cultural centre

Surface area:	641.3 km ² ,
Population:	779,145
Population density:	1.215 inhabitants per 1 km ²
Level of motorisation	437.4 vehicles/1000 inhabitants
Town districts:	17

In traffic terms, the County area can be characterised as transit area with concentration of traffic routes becoming higher in direction to the Capital Zagreb.

2.2 Legal framework

The above data show that public passenger transport in the territory of the Zagreb County is today carried out by buses and railway. Organisation of public passenger transport in the territory of the Republic of Croatia is regulated by a number of laws, basic acts and a series of rules derived from these regulations. The most important laws that regulate method of transport organisation are indicated herein. Other regulations will not be mentioned here, especially not those that stipulate organisation and provision of income by local government units and financing by the state budget.

Railway passenger transport is defined by the Croatian Railways Act, which defines organisation of the railway system, way and conditions of performance of railway transport, status of railway infrastructure and conditions for access to railway infrastructure, regulation system in railway transport. Railway lines and departure time schedules are regulated by the Croatian Railways together with Ministry of the Sea, Transport and Infrastructure.

Public road passenger transport, primarily bus transport, is regulated by Act on Transport in Road Traffic, i.e. the part related to travels within a county (county line transport) and to transport between two or more counties (intercounty line transport). Permits for carrying out of county transport are issued by competent county authorities, and permits for intercounty transport are issued by Ministry of the Sea, Transport and Infrastructure as responsible ministry.

Public passenger transport within towns or municipalities is regulated by the Law on Communal Services by which the function of public transport is defined to be a communal service. The Law regulated the mode of carrying out of public line transport only within individual units of local government (so-called local transport). Permits for carrying out of local transport are issued by the competent authority of individual towns and municipalities.

2.3 Transport demand

Trend of daily travels is present toward towns with attractive contents such as workplaces, schools, faculties, cultural institutions etc. Significant portion of these travels is performed by individual transport, especially travels to work and cultural events or shopping. Use of personal cars causes increase of traffic volume in towns, especially in larger ones (for example, Zagreb) with already overloaded traffic infrastructure, both roads and parking areas (capturing already insufficient traffic infrastructure-both roads and parking lots). In the territory of the Zagreb County there is significant daily migration to the City of Zagreb (57%) which is surrounded by the Zagreb County. One quarter of travels is carried out within individual municipalities and towns (26%), and the smallest share of travels is made among municipalities and towns within the County (17%), among which important travel destinations include the Town of Velika Gorica, with over 65,000 inhabitants, followed by the towns of Samobor, Jastrebarsko and Ivanić Grad.

The share of public transport in modal distribution of travels is unfavourable. Modal travel distribution demonstrates dominant (large) share of individual transport (62%), bus transport accounts for one third (29%) and railway transport holds minimal share (9%) which is markedly surprising taking into account very favourable location of the railroad in the County.

2.4 Transport offer

Railway transport is organised by the Croatian Railways that, according to its capacity should be the strongest public transport. Rail lines of the Croatian Railways run from the centre – the Zagreb central train station – toward Novska, Koprivnica, Bjelovar, Sisak, Karlovac, Zaprešić, Dobova and Varaždin.

Railway traffic in the territory of the City of Zagreb and neighbouring counties is carried out along total of 300km of railroad tracks, out of which 162 are electricified, and only 43km are double track lines. There are 88 stops and stations at average distance of 3.4km, with 1,280 departures per day on 20 lines in both directions. Departures are not organised according so-called cyclic principle, i.e. they are not scheduled and realised in regular time intervals (for example, each 15 or 30 minutes). Transport is carried out by 24 electric locomotives at electricified lines and by diesel locomotives at not-electricified lines (Krapina-Zagorje County). Due to their characteristics, both types of present trains do not suit to urban-suburban traffic. Information contained in the Study of Integrated Traffic System which can be considered as relevant ones are used to present characteristics of transport demand.

From the point of view of meeting transport demand, it can be stated that there is lack of mobile capacities in railway transport (trains), especial at urban-suburban lines (Zaprešić-Zagreb Central Station-Zagreb Sesvete), within the administrative area of the City of Zagreb wherein a joint prepaid tickets of transport companies ZET (Zagreb Electric Tram) and HŽ (Croatian Railways) are in use at Zaprešić – Zabok line during so-called peak times (rush hours) (6-9 and 14-17), i.e. going to work or schools/faculties.

Such peak demand could be compensated by introduction of additional trains (departures) at suburban lines and by double train sets at urban lines.

At other lines, and especially during other periods, the railway capacities are still underused. Reasons are the following:

- Less coverage of the area with railway traffic network, insufficient mobile and appropriate infrastructural capacities,
- Lack of subsidies to citizens to cover a part of costs of railway transport by the Zagreb County and local government units (towns and municipalities).

According to the Law on Communal Services, each local government unit is obliged to provide public transport for its population, and therefore larger local government units, such as the towns of Zagreb, Split, Rijeka, Osijek etc. founded own transport companies. Smaller local units use transport companies (carriers) from larger companies or private bus carriers.

In the territory of the Zagreb County bus transport companies are mainly private transport companies, and one company owned is by the City of Zagreb. Today they organise traffic at 179 county and intercounty bus lines with 3.097 departures per day in both directions, with departure frequency at each line ranging from several departures per a line to several dozens of departures per a line during a day.

Till 15 years ago Zagrebački električni tramvaj (hereinafter referred to as ZET) was the largest transport company in the area, which is today within Zagrebački holding, because then the largest part of the present Zagreb County was within the City of Zagreb in administrative terms. Upon decentralisation of the City of Zagreb in middle 90-ties of the past century, i.e. by separation first of the Town of Samobor, and then the towns of Velika Gorica and Zaprešić, and upon changes in legal regulations in the Zagreb region, local transport in new towns and transport toward the City of Zagreb, was taken over by private transport companies which have developed and profiled in time.

Currently, various tariff systems and payment of fare tickets are used, which result from different requirements of individual types of transport (railway, bus transport).

Most of mentioned bus transport companies have contracts with ZET on joint ticket (monthly or annual) and for the time being there are no joint tickets of private bus transport companies and railway. Such situation is caused by absence of agreements between local government and Croatian Railways concerning support of railway transport. The exception is the administrative territory of the City of Zagreb wherein joint tickets of Croatian Railway and ZET are used, and the City of Zagreb has a contract on subsidy support for a part of unearned income to Croatian Railways.

2.5 Comments on the current organisation of public passenger transport

Public passenger transport in the Zagreb County is not properly organised. It is organised in traditional way, as separate transport subsystems which causes lack of connectivity, i.e. there is no coordination between public passenger transport by road and railway.

Railway transport is under-utilised due to three main reasons: its offer is not attractive (low frequency of departures, unattractive facilities etc.), high transport prices, no coordination with bus transport.

In road passenger transport bus lines are not coordinated – harmonised, and routes frequently overlap both with other carriers and with railway transport. Bus carriers offer under-utilised capacities and therefore they are forced to keep high transport prices. In order to alleviate the impact of high transport price on citizens, bus carriers receive subventions by local governments whose financial potentials are frequently poor.

All involved entities are not satisfied with such situation, including passengers who, if use bus transport travel rather slowly, because buses share the roads with personal traffic. If they opt for faster public transport, railway, they have to pay comparatively expensive fare ticket (County and towns in the County do not subsidize railway transport). So they frequently opt for individual transport which, although it is expensive (however, a part of cost is compensated by companies who pay their employees for transport to work) and slower, but it is comfortable and they do not depend on others.

Carriers are also not satisfied because they lose passengers, their revenues reduce and, in order to survive, they put pressure on local government (County and towns and municipalities) either to reduce the volume of transport service or to increase supports.

Local government is also not satisfied faced, usually before elections, with displeased citizens, poor public transport and usually has no funds in the budget for additional support to carriers.

3 Proposal of future strategy for public passenger transport in the Zagreb County

3.1 Proposed strategy

The best possible solution for above described situation is to change the present strategy of public transport. In the course of time growth of towns and municipalities have exceeded concepts of public passenger transport that had been efficient many years ago and that had not been following such growth and development. Solutions for such issues already exist and they have been applied for years in many countries within European Union. It includes forming of so-called transport union, i.e. integrated passenger transport. According to this scheme, railway transport should be the basis of transport within the County, between The Zagreb County and the City of Zagreb, as the main target centre, and maybe later on Krapina-Zagorje County and Sisak-Moslavina and Karlovac Counties which also gravitate towards Zagreb.

According to the new concept, passengers expect and demand from public transport provision of transport offering through:

- frequency and appropriate speed of transport service,
- clean facilities and comfortable travelling,
- transport within regular time intervals (especially in railway traffic),
- adequate transport price.

If the above mentioned conditions are met, higher interest of passengers can be expected, especially those using personal transport, and their conversion from personal to public transport which may produce benefits for all participants (passengers, carriers, local government).

The current railway transport is still the strongest type of transport, however, it has to be additionally strengthened, reorganised and modernised, to make it more attractive than other modes of transport (faster, cheaper, more comfortable). It is necessary to procure new trains, built new stations, rebuild existing stations giving them multi-modal character, i.e. make them suitable for bus transport as well, i.e. equip them with infrastructure for parking of passenger cars and bikes. It is also necessary to procure new equipment for fare collection and to harmonise it with such equipment of other carriers.

Passengers using buses have to be transported to bus-railway terminals adjusted and built for such purpose, and then they should travel by train to the City of Zagreb. Timetables of bus and railway transport should be harmonised to minimize waiting times to interchange the train/bus. In such way total travelling time would be shorter than current one, because the operating speed of railway transport is much higher than speed attainable in road transport (because of jammed roads).

Bus carriers would experience significant reduction of operating costs. Their lines would be shorter, they would need less buses at these lines than today, and they could do their business either with cheaper tickets or with lower supports. If there are surplus buses after reorganisation, they could be used in other modes of public transport and so increase income or, if existing buses are worn-out, it will not be necessary to purchase new ones.

Passengers will enjoy better transport (more frequent departures), because at shorter routes carriers will be able to make more tours than today even with smaller number of buses and, because of lower carriers' costs, transport would cost less. Those passengers, who use several carriers, will be able by using only one ticket to utilise transport of all carriers. In such way realised income will be allocated according to a selected model.

Local government would also be more satisfied because transport in their area would be of better quality, citizens would be more satisfied and pressure of carriers for supports would decrease.

Such transport type has also a disadvantage, i.e. larger number of changes of a means of transport which is not popular among passengers. However, by proper scheduling of arrivals and departure times at contact points of buses with railway, strict observance of timetable, good information given to passengers and travelling speed provided by railway transport, the mentioned disadvantage can be mitigated, even eliminated.

In the stage of preparations for system introduction, a series of projects and activities shall be made, which all together will contribute to functioning of the entire system.

For example:

- Transport organisation project (to optimize organisation of bus transport (eliminate parallel drives, transport more passengers at the same route, determine optimal frequency of bus transport, determine contact points of bus and railway transport).
- Tariff system project in the coverage area of ITP. It includes transport prices, required financial support (subsidies) etc.
- Project of revenue distribution among carriers within the system (to determine acceptable distribution model among carriers who participate in transport and model of support granted by local government),
- Project of fare payment system (to introduce modern electronic fare payment systems at carriers who do not use the yet, and harmonize (connect) electronic fare tickets at all carriers who have already introduced electronic payment,
- Project of transfer of internal information on carrying out of transport and required equipment,
- Project of passenger information system
- Project of reorganisation and needed equipment of Integrated Transport Centre,
- Project of stations (stops) and vehicles within the integrated passenger transport system,
- Construction projects of transfer stations (stops) as a part of construction of infrastructure.

In addition, the following has to be implemented:

- Certain modifications in legal regulations related to passenger transport, primarily in road transport (method of allocation of lines to carriers etc.),
- To impose quality standards for transport to carriers in accordance with European standards ,
- To select carriers who will perform transport in the set transport organisation,
- To repair railway infrastructure (tracks, stations, management) and procure new railway vehicles required for fulfilment of transport demand of the current number of passengers and for receipt and transport of additional number of passengers that will occur after implementation of integrated transport,
- And many other required activities

Such project preparation is extensive and demanding, but it is needed. The project implementation, especially infrastructure ones, as well as procurement of railway vehicles above all will require significant financial resources, which should be, to a great extent, provided from EU funds. As co-financing requires to have completed documentation, state administrative authorities and local government units shall have to allocate initial funds for preparation of required documentation.

As experience of the users of integrated transport, the whole implementation process requires several years and it is carried out in stages and continuously refined, and the coverage area is increasing. According to models in EU states, an operational body, i.e. an independent company shall be established that will manage all activities related to preparations for implementation of the integrated transport system, and upon implementation, it will manage transport. Such a company is usually founded and co-owned by counties, towns and municipalities, and it represents professional unit that protects their interests and interests of passengers transported within the system.

3.2 Proposed legal framework

Upon joining European Union, the Republic of Croatia shall harmonise public passenger transport with regulations of EU, some of which shall be applied directly (ordinances) and some shall be integrated in the Croatian legislative (regulations, directives, standards).

One of basic ordinance is Regulation of the European Parliament and the Council on public passenger transport services by rail and by road (Regulation No.1370/2007) of October 2007 and has been applied since October 2009. It defines conditions for carrying out of public passenger transport and the way to establish relations between local government units and carriers.

In order to implement the integrated transport models, each state wherein it already has been applied, has subordinated its existing regulations to it or adopted new laws that regulate this matter. In Republic of Croatia, the Ministry of the Sea, Transport and Infrastructure, as responsible ministry, shall decide how to approach the issue of regulation that will regulate integrated transport. It shall be decided whether to modify the current traffic regulations, such as Act on Transport in Road Traffic, so that powers related to organisation of transport in the regions, could be transferred to Integrated Transport Centre (CIP), depending on the type, for example, bus lines, which at present exist in towns, counties and the Ministry of the Sea, Transport and Infrastructure or a new regulation concerning this matter will be adopted. Anyway, CIP should be enabled to invite public tenders for selection of the most favourable carrier in accordance with requirements of optimised transport organisation and EU ordinances on allocation of transport, negotiating method of transport services and quality level required by regulations, recommendations and standards of EU and Republic of Croatia. In addition, laws regulating financing of local government units and financing by the state budget shall be refined, because the integrated passenger transport cannot function without co-financing by the state and local government. In determination of financing of public passenger transport, examples from European countries, such as FR Germany and other, should be used.

4 Instead of conclusions

The current organisation of public passenger transport in the Zagreb County (the Zagreb County and the City of Zagreb) is uneconomical, expensive and inefficient from the point of view of the social community, and from the passengers' point of view (users) it is unattractive, which all together results in insufficient utilisation of transport. Such situation caused dominant use of personal car in passenger transport for all purposes. The result is disturbing; the community invests significant funds to support public passenger transport which to not accomplish the goal, users are not satisfied with the service quality and quantity, and carriers are also not satisfied with the situation in transport of passengers, and the City of Zagreb, as dominant target destination, and other towns in the region, are faced with the issue of disproportion between increased traffic volume of personal cars and lack of traffic infrastructure for such traffic volume.

Therefore, conclusion begs to be made that it is necessary to redefine the strategy of public passenger transport in regions. In order to do it, the first task is to modify the legal framework and the strategy which will create framework for changes in organisation of integrated public transport. It is neither short nor simple task, but it is indispensable because the present status is unsustainable.

References

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