

THE CURRENT STATE AND FUTURE DEVELOPMENT DIRECTIONS IN THE PUBLIC TRANSPORTATION IN THE MUNICIPALITY OF TIMISOARA

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Abstract. Timisoara holds several national premieres in the public transportation sector: the first electric tramway on the present territory of Romania (1899) and the first trolleybus in the country (1942). The public transportation network developed continuously, so that the Municipality of Timisoara has at the moment a dense public transportation network which serves all the districts of the city. As researches reveal that in Timișoara of the year 2030 the private car will remain one of the main means of transportation, a fast and functional public transportation system becomes an imperative condition to ensure urban accessibility and mobility. The projects of the local authorities aim to give the public transportation system of the Municipality of Timisoara European features: speed, efficiency and modernity, to develop the local public infrastructure to ensure mobility in the historical center and to render accessibility to the suburbs of the Municipality of Timisoara.

Keywords: public transportation, mobility, accessibility, Timișoara

1. Where does the urban public transportation go in Romania?

In numerous cities of the world the importance of the urban public transportation has been firmly reaffirmed, at least for the last decades. Starting with the sixth decade of the 20th century, a downfall of the public transportation on behalf of the private cars was noticed, first in North America and then in the large majority of the major cities of the world. This determined the considerable decline in less than a quarter of a century of traffic fluency within the cities. The deadlock was overcome gradually in the 70s by the return to the public transportation. The importance of the public transportation in ensuring the need of mobility can be noticed in all major cities of Europe, where it was a common belief that a high mobility for the citizens can only be ensured by consolidating and modernizing the public transportation system.

The first objective of the public transportation into a 21th century European city is the prioritization of the individual mobility within the city and especially in the central and the high density areas compared to the individual motorized transportation. Second, public transportation has the role to cover (in the large urban centers) the largest possible metropolitan area which represents, in its role of nucleus of the metropolitan area, a dynamic area for the continuous development of the city. It is only by an optimal connection to the other transportation systems (road, rail, naval or air transportation) that is possible an

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intelligent interconnection of the urban, suburban and external transportation which in the same time ensures an optimal exploitation of the existing transportation infrastructure.

At national level, public transportation, which in the communist period represented the sole means of reaching the large urban industrial platforms, became after 1990 a stringent problem due to insufficient financial means. In the same time, the process of deindustrialization affecting numerous cities determined the dramatic decrease of the public transportation (3,5 billion passengers in 1992 and only 2,1 billion passengers in 2008) rendering unprofitable numerous urban transportation systems, especially in small and medium sized cities (figure 1 and 2). In the same time, some major cities could not support the rhythm of development and extension of the public transportation network started before 1989 which led to the abandonment of the most expensive transport infrastructures (especially the tramway). Only 13 cities of Romania have at the present functional tramway railways (compared to 15 in 1990), two important cities of Romania gave the tramway up (Constanța and Brașov), but the imminence of giving up to this means of transportation is obvious in other cities as well due to the precarious state of the infrastructure, of the tram carriages and the financial impossibility to sustain their modernization (Iași, Reșița, Sibiu, Craiova).

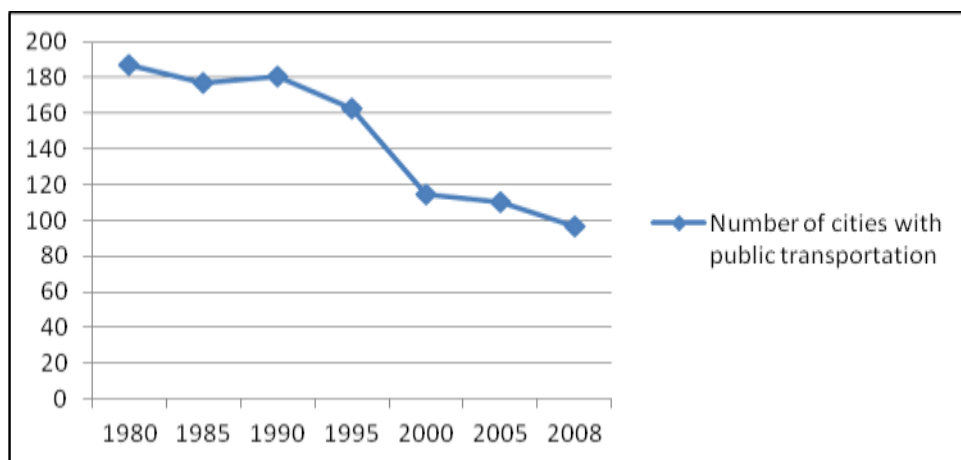


Figure 1: The evolution of the number of cities with public transportation systems in Romania between 1980 and 2008

The required solutions which have to be adopted by the local authorities of the various cities are not at all simple. Facing a shortage of finances, local authorities must choose between passenger safety and more efficient and cleaner means of transportation. Numerous cities gave up clean means of transportation in favor of busses (the city of Suceava gave up the trolleybus for the bus, Constanța replaced the tramway with the bus, Iași replaced the trolleybus with the bus), options which were grounded in the lower cost of purchasing such modern transportation means within an European context characterized by the preference of clean transportation means². None of the major cities of Romania have managed thus far to modernize entirely its public transportation system, but it must be noticed that there are, however, cities which had positive evolutions and brave development and modernization

² In the last decades numerous cities of France acquired modern and expensive tram lines in spite of the reticence showed before (Strasbourg, Bordeaux, Angers, Nice, Grenoble etc.). Paris as well, having a traditional aversion for the tramway reintroduced this public means of transportation in the suburban communes.

projects for the urban public transportation. The capital city renewed its tram fleet and modernized its management and traffic control system for the underground railway, extending at the present its network; Oradea partially renewed its tram fleet; Iași is presently modernizing its tramway infrastructure and has renewed its bus fleet; Timisoara rehabilitated more than 50% of the total length of the tramway infrastructure and renewed its bus and trolleybus fleet. These are evolutions which underline the gradual increase of interest in the promotion of public transportation as a standing alternative for increased mobility within the urban space according to the increasing problems of the urban traffic.

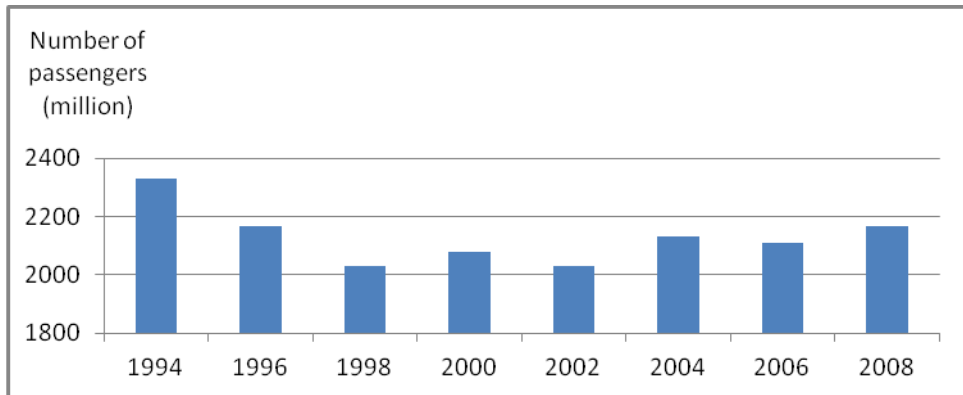


Figure 2: The evolution of the number of passengers in the urban public transportation in Romania between 1994 and 2008

2. The urban public transportation in Timisoara between tradition and modernity

Timisoara has several national premieres in the field of public transportation: the first electric tramway on the present territory of Romania (1899) and the first trolleybus line in the country (1942). The public transportation network continuously developed so that the city currently disposes of a dense public transportation network serving all the districts of the city. As the city lacking a bypass road, there are frequent traffic jams as the public transportation intersects with the heavy traffic within the city. Public transportation serves the majority of the population being traditionally mainly electrical and oriented towards the center of the city. Timisoara has the most important tramway network of Romania (after Bucharest), which interconnects the various districts and having a greater density towards the center of the city (figure 3).

One of the most ambitious modernizing projects of the tram line went on in the last years. It consisted in the rehabilitation of the tram line for a total length of 40.1 km of simple line, representing more than 50% of the total network length. This work can be considered a national premiere as for the entire length was used, for the first time in Romania, the ISOLast continuous elastic fastening and suspension system of the rail with chamber sections, designed by the German OTREC GmbH. This system diminishes the shocks produced by the tram and decreases the noise substantially. Modernization works to the street network financed from the local budget went in parallel with the work at the railway which was co-financed by the European Bank of Investments. The major investments for the modernization of the tram railways unfortunately did not result in the improvement of the public transportation services offered to the passengers. Although the modernization of the rails enables the increase of the

cruising speed for tramcars, this cannot be done to optimal levels due to the heavy road traffic and the lack of priority corridors for the means of public transportation. More so, the 78 second-hand tramcars bought 15 years ago from Germany (from Bremen, Munich, Frankfurt on Main, Dusseldorf, Karlsruhe) have a very poor condition which renders impossible the maintenance of decent comfort standards.

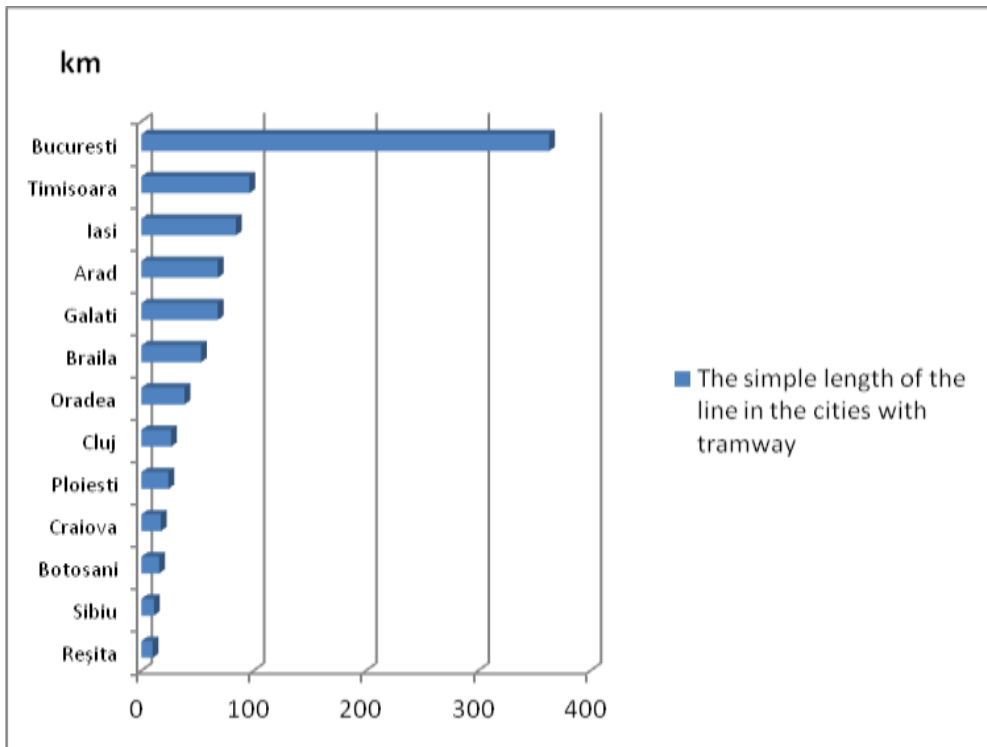


Figure 3: The simple length of the line in the cities with tramway network in 2008

In the case of busses and trolleybuses, the acquisition in leasing of new units represented important steps for increasing the comfort: 55 new Mercedes Conecto busses, 50 Skoda Irisbus trolleybuses and, very recently, 30 more articulated Mercedes Benz Conecto busses were acquired. In this case also, the modern European standard means of transportation cannot ensure a satisfactory transport speed due to frequent traffic jams within the center of the city. Nevertheless, the existing lines cover currently in its entirety the daily transportation requirement by its own means, ensuring satisfactory frequencies on the majority of the routes. The public transportation in Timisoara Municipality covers daily an average of 27,188 km and carries an average of 236,211 passengers.

The statistical data show an increase in public transportation for the last decade within the Municipality of Timisoara. The minimum number of passengers was registered in 2002, after which the number of passengers in 2009 overpassed that of 1991 (figure 5). The increased number of passengers should not be considered as a unique consequence of the transportation conditions, but of the aggressive policy to ensure transportation facilities especially to the elderly – approx. 45.000 retired people over the age of 65 benefiting of free transport. People residing in Timisoara have a discount of 20% in subscriptions, 86.8% of the passengers in 2009 being subscription passengers. The increase of passengers determined the introduction of the automated taxing system and of monitoring the circulating vehicles which

the possible metropolitan area (Timisoara has not established an official metropolitan area), and the frequency of transportation means that the covered area is still reduced.

Table 1: The recent evolution in number of passengers

Number of passengers transported (thousands) with:	2007	2008	2009
Trams	43.413	49.673	57.842
Trolley	12.824	14.895	22.267
Buses	29.980	28.648	25.086
Metropolitan lines (bus)	-	-	359
TOTAL	86.217	93.216	105.554

3. Malfunctions in public transportation in the Municipality of Timisoara

The current circulation and mobility situation in the city is similar to that of the other similar size cities of Romania. Due to the lack of special parking lots the cars are parked on the roads, thus jamming the traffic and determining the well-known consequences: low speed and fluency, sound pollution, toxic gas emission, difficult pedestrian circulation, on the whole, a general disagreeable urban picture. As studies reveal that even in the year 2030 the private car will remain one of the main means of transportation in Timisoara, the configuration of a functional and fast public transportation system appears as an imperative condition to ensure urban accessibility and mobility.

The public transportation in Timisoara was shaped in general during the 80s when the main passenger flows followed different directions. The most important flows in the communist period were heading from the large residential quarters towards the main industrial platforms. The most important was the east-west axis which ensured the connection between the large industrial platforms (Buziasului and UMT in the east and Solventul in the west) and included in the route the central railway station of the city (Timisoara North). This axis, parallel to the railway to Lugoj (Bucharest), without major obstacles, ensured also the main exit route of the city (to the east). After 1990, the deindustrialization process and relocation of industrial units and tertiary activities determined a major change in the orientation of the main transportation fluxes within the city. These changes and locations generated a new axe oriented from north to south, marked by the new industrial and tertiary locations from the extension of Calea Șagului, the university campus, the Mall, and to the north, by the commercial centers and the exit to Arad. Unfortunately, the new axis of the city has a major impediment due to the junction with the railway to Lugoj which crosses the city, this railway being an impediment even for possible bypass routes. The railway to Lugoj which crosses the center of the city, together with Bega channel generate a ring which strongly isolates the central area from the rest of the city and renders difficult the connection between the north and the south of the city due to the insufficient number of connection points (bridges over Bega and passages and viaducts on the railway) (figure 6).

Under these circumstances, the attempts of the local authorities to satisfy the demand in transportation generated by this new axis hits the spatial restraints above mentioned. There is just one public transportation route which connects the northern extremity of the city with the southern (Express 1 route from the Calea Șagului Bridge to Selgros) and the other partly north-south routes merge inevitably towards two over-jammed gates situated in the center of

the city (Piața Mărăști and the Bastion intersection). As the tramlines are traditionally oriented east-west, the north-south public transportation connections are ensured by busses and trolleybuses which use the same route infrastructure overcrowded by the road traffic. Consequently the speed of the public transportation means on these routes is very slow: 10km/h during the rush hours and approx. 18km/h during the rest of the day. Even on these routes public transportation encounter heavy traffic, the unfinished bypass route of the city often generating slow traffic and jams on the densest routes and especially in the center of the city.

The Municipality of Timisoara suffers from the lack of a fast and fluent urban transportation line from the central railway station of the city (Timisoara North) to “Traian Vuia” International Airport. There is a bus line connecting the old city center with the airport, but the circulating frequency is very low, especially during working days, and it does not function during non-working days. An older project which aims to transform the railway which crosses the city into a fast line of public transportation which would ensure the connection between the central railway and the international airport has returned in the attention of the city administration, the railway having to be moved outside of the city, but the production perspectives of this plan are very remote.

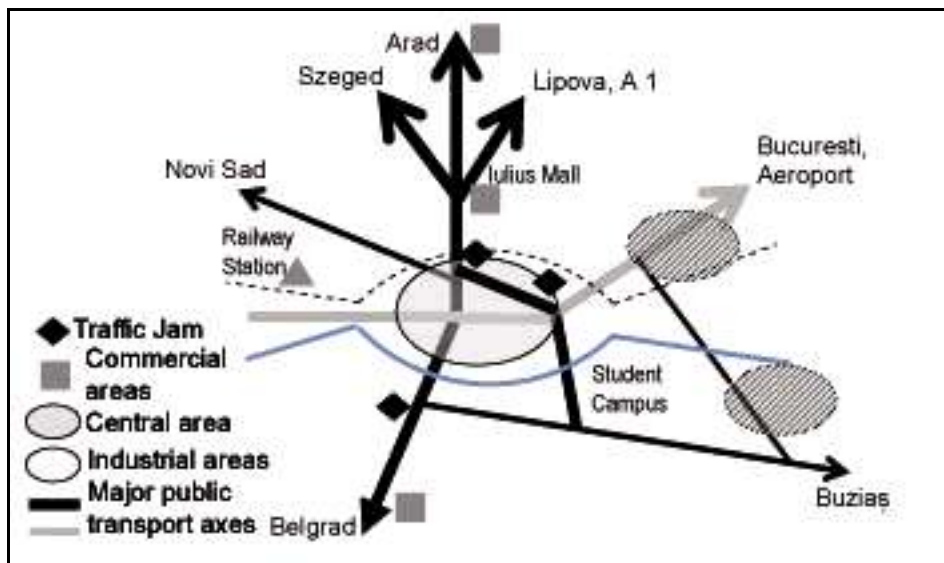


Figure 6: The major public transport axes in Timisoara

The traditional transportation means of Timisoara, the tramway, is presently in a degraded situation. While more than 50% of the rail was modernized, the present tram fleet is currently in an advanced state of degradation and the comfort standard of the passengers is entirely unsatisfactory. Although one must appreciate the efforts taken by city administration to renew entirely the bus and trolleybus fleet, more attention should have been granted to the modernization of the tramway as it is the most used transportation means in Timisoara. The journey by tram is discouraging although a modern tram fleet might have taken over a major part of the passenger fluxes and cruised with a higher speed, especially as many tram rails have special corridors separated from the road traffic.

Another problem frequently underlined by the citizens is the general low frequency of the public transportation means. Only a few lines have an average frequency of 7-9 minutes

during the rush hours (33 bus line, 14 trolley line, 4 tram line), most lines having a 12-18 minutes frequency during rush hours, and naturally an even smaller during the other hours. The express lines introduced several years ago for the longer routes and for the passengers who pay more have frequencies that reach to 30-40 minutes. Although the public transportation company's officials say that they ensure up to 100% the daily requirements for means of transportation, the reduced frequencies illustrate that the reality is not exactly as stated.

4. The future of the public transportation in Timisoara – vision and projects

The study “*Vision 2030 – Timisoara European metropolis*” mentions several projects for the development of public transportation in the city of Timisoara. These aim to extend the tramway, trolleybus and bus infrastructure, to ensure a public transportation line between Timisoara North Station and the international airport, to implement several intelligent traffic control and management systems, to include Bega channel within the public transportation network of the city.

A European city of the future must have a high level public transportation network characterized mainly by speed and passenger safety. The main projects of the local authorities aim to ensure for Timisoara a European standard transportation system, fast, safe, efficient and modern, in order to ensure mobility within the historic center and accessibility to the suburban areas of the Municipality of Timisoara.

The development plans for the public transportation in the Municipality of Timisoara must take into consideration the geologic conditions and the geographic position of the city. The study³ “*Vision 2030*” mentions the unfavorable geologic and geographic conditions (ancient marshland, region with numerous seismic focal points) in the detriment of a future underground railway transportation network. The reality is that there are worldwide numerous underground railway lines built under harsher geologic and seismic circumstances than those of Timisoara. The underground railway of Bucharest was built under seismic risk higher than that of Timisoara and in a very difficult geologic basement. The issue of building an underground railway network in Timisoara is more of an economic problem than a technical difficulty as only millionaire cities have the required flows of passengers for a metropolitan network.

Several locations requiring the extension of the public transportation network were identified: the industrial areas situated at the suburbs of the city (Buziaşului platform, Calea Şagului, Freidorf area, UMT area, Calea Aradului, Calea Circumvalaţiunii), the commercial areas (Iulius Mall, Aurora Market, Euro-Kappa, Mehala Market), the airport, the Green Forest, the Municipal Hospital, the Municipal Stadium - Regional Business Centre area. To cover these areas, the authorities aim to extend the existing tram, trolley and bus network and to create public places of great intensity traffic: Central Park, Green Froest, Airport, Iulius Mall.

The inclusion of the Bega channel in the public transportation network represents a specific element for the Municipality of Timisoara. Bega channel is the first channel built on the present territory of Romania. Its total naval length is of 44 km in Romania and 72 km in Serbia. The building of the channel started in 1728 upstream of Timisoara when Earl Claudius Mercy ordered the digging of a channel that would determine the drainage of the flooded terrains surrounding Timisoara. In 1793 engineer Maximilian Fremaut continues building the

³ *Vision 2030. Timișoara metropolă europeană – high-tech cu rădăcini istorice și culturale*, p. 40

channel and erects dikes to regulate water flow. Consequently, the risk of flooding is highly reduced in Timisoara and the surrounding marshlands are drained. Later on the channel is used for the transportation of logs from the forests near Făget to the city.

This naval channel which crosses the city of Timisoara and was only in 1990 considered for reopening. With the support of the Romanian government, a feasibility study for the reopening of the channel for naval traffic in the Romanian side was done in 2002. The study forecasts an annual traffic of goods of approx. 600.000 t especially on behalf of the interested companies of Timisoara (the sugar factory, CET, Dermatina, Spumotim). The study also considers the reopening of passenger and leisure traffic and the modernization of the two locks on the 44 km segment of the Romanian sector. In 2007 dredging works begin for the 44 km sector and after 4 years at the finish the channels is 70 cm deeper. Beyond the immediate advantages of these works - decrease of the risk of floods- the inclusion of the channel in the public transportation network of the city is a remote perspective for the year 2030. Nevertheless Bega channel represents an opportunity for sustainable development inclusively in the transportation sector Bega channel can take over an important part of the traffic of goods which currently is done on the roads of the city and thus it can improve the general traffic of Timisoara.

Conclusions

Despite the difficulties of the transition period, city authorities managed to preserve the functionality of the urban transportation system in Timisoara and even to perform important modernization actions. The mobilization of important financial resources for the renewal of the tram rails even if for sentimental reasons (to bring to actuality a means of transportation of European, not only national importance for the city) prepared the terrain for the modernization of a clean means of transportation with large development perspectives within the European space. Still remains the delicate problem of finances for the acquisition of a new tram fleet which would be not only reliable, but also emblematic for the city.

After a recoil period after the 1990s, the public urban transportation of Timisoara managed to exceed the number of passengers of 1990, but this increase of passengers is a consequence of the oversized system of facilities (especially for the pensioners) and not necessarily of the improvement in the quality of services (the relatively low frequency of the means of transportation on the majority of the lines seems to be an argument in this direction). The total renewal of the fleet and the modernization of the infrastructure are not sufficient for a modern and efficient public transportation system and the problem of the heavy traffic in the center of the city represents the main impediment for the increase of the cruising speed.

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