

## THE CURRENT SITUATION OF THE PUBLIC TRANSPORT ON BLAJ – ALBA IULIA AXIS

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**Abstract:** *The geographical axis is a space – time force line which allows the geographical diagnose and prediction of a given territory. The analysed territory may have different geometrical configurations and varied sizes according to their polarization capacity. The geographical axis contains territorial features such as history, population, cities, villages, education, politics, culture, et cetera. The following paper focuses on the Blaj – Alba Iulia geographical axis and on the current situation of the public transport, namely on the current situation of the road and rail infrastructure on the Blaj – Alba Iulia route.*

**Keywords:** *geographical axis; public transport; road transport; rail transport; urban mobility*

### 1. Introduction

The geographical axis is a space – time force line which allows the geographical diagnose and prediction of a given territory. The analysed territory may have different geometrical configurations and varied sizes according to their polarization capacity. As part of the territory, the geographical axis has the following characteristics typical for intelligent structures: it is ordered, coherent, and organized. In a geographical axis occur different and complex relationships which have material, energetical and informational functions. Also, the geographical axis contains other territorial features such as history, population, cities, villages, education, politics, culture, et cetera [1].

The following paper focuses on the Blaj – Alba Iulia geographical axis and on the current situation of the public transport on the respective axis. The paper presents the current situation of the road and rail infrastructure on the Blaj – Alba Iulia route, the level of satisfaction of the population regarding the public transport in the area and solutions proposed by the local authorities to develop the urban mobility and to encourage the citizens to give up on their personal automobile and choose more environmentally friendly means of transportation. The paper closes with conclusions on the current situation of the public transport on the Blaj – Alba Iulia axis and with proposals of mobility solutions for the respective route.

### 2. Materials and Methods

#### 2.1. General Aspects on the Transport Infrastructure on the Blaj – Alba Iulia Axis

The following paragraph summarizes the current situation of the road, rail and air traffic in Alba County, in the city of Alba Iulia, which is also the capital city of Alba County, and of the town Blaj.

Alba County is in the Central – Western part of Romania, in the Centre Region NUTS 2 along with the counties Mureş, Braşov, Covasna, Harghita and Sibiu [2]. Alba County has the following neighbours: at North is Cluj County, at West the Bihor and Arad Counties, in

Southwest is Hunedoara County, in South is Vâlcea County and in East are Sibiu and Mureş Counties. The surface of Alba County is 6424 km<sup>2</sup>, which is 2.6% of Romania’s territory. According to the Population Census from 2021, Alba County’s population is 325,941 inhabitants [3].

The transport infrastructure of Alba County consists in highways, European roads and rail roads which link the towns and villages of the county, the major cities from neighbouring counties and other key points of Romania. Alba County is crossed by the following highways: route A1 which links Bucharest to the Western border Nădlac to Hungary and route A10 (Sebeş – Turda) which connects to route A1 (Bucharest – Nădlac) and to route A3 (The Transylvania Highway). The rail network from Alba County is spread across the hill and flat plain areas from the Eastern part of the county, while the Apuseni Mountains has no railroads. The access to the Apuseni Mountains is made by roads: national roads, county roads and local roads. Alba County does not have infrastructure for air transport such as airports. However, Alba County is neighbouring counties such as Cluj, Sibiu and Mureş which have air transport infrastructure: the “Avram Iancu” International Airport from Cluj-Napoca, the International Airport from Sibiu and, the “Transylvania” International Airport from Târgu Mureş [4].

Alba Iulia is the capital city of Alba County, and it lies on the first terrace of the Mureş River. Alba Iulia is close to the following important transportation routes: A10 highway which links Alba Iulia to Sebeş in the South and to Cluj-Napoca in the North and the European road E81. Also, Alba Iulia is close to the railway junction Coşlariul Nou – Teiuş.

Blaj is in the Western part of the Târnave Hills, close to the junction of the rivers Târnava Mică and Târnava Mare. Blaj is connected to the A10 highway by the national road DN14B. Also, Blaj is crossed by the Pan European IV railroad which links Bucharest to Nădlac (the Western border to Hungary) via Arad in the Southwest. In Blaj there is also a railway junction from which a railway that links Blaj to Târnăveni and Praid starts.

From Blaj to Alba Iulia there are the following transportation routes: road transportation on the national road DN14B and on A10 highway via Teiuş (Fig. 1,a), road transportation on the national road DN14B and on the county road DJ107B via Sântimbru (Fig. 1,b), and rail transportation with link in the Teiuş rail junction (Fig. 2).

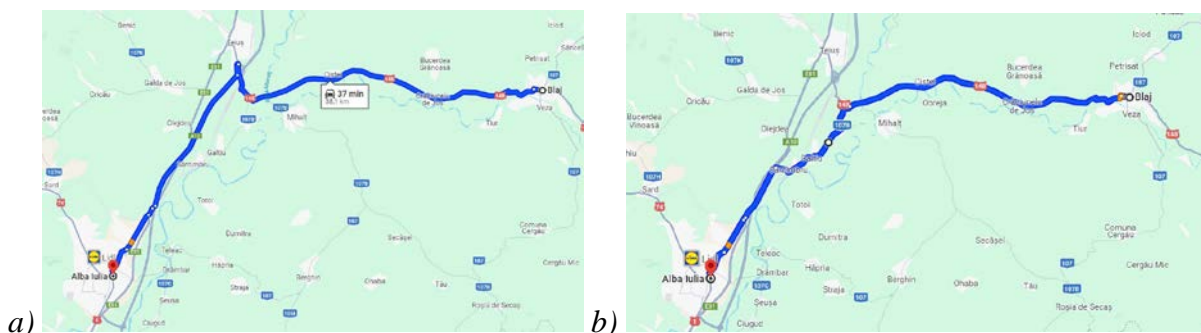


Fig. 1 – The Blaj to Alba Iulia road route: a) on the national road DN14B and A10 highway via Teiuş, b) on the national road DN14B and on the county road DJ107B via Sântimbru [7].

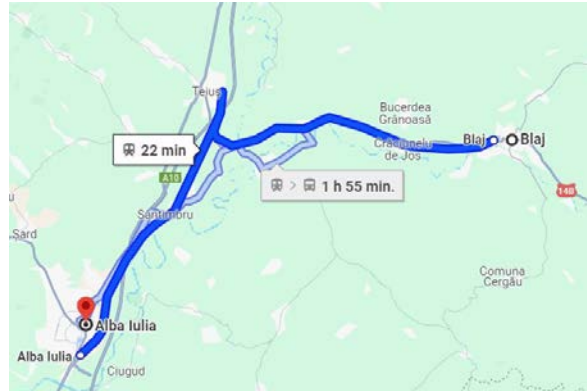


Fig. 2 – The Blaj to Alba Iulia rail route [7].

## 2.2. The Current Situation of the Public Transport in Blaj and in Neighbouring Areas

The Urban Development Strategy of Blaj for the period 2021 – 2027 revealed in the SWOT analysis that one of the weaknesses was the lack of public transport [5]. This aspect creates difficulties for the population which commutes from Blaj to Alba Iulia. In the survey presented in the Urban Development Strategy, the 125 participants said that the problems of the public transport were: the lack of operating schedules in the bus stops, low urban mobility, lack of public transport infrastructure, and traffic jam caused by the high number of cars. Also, out of the 125 participants 37.9% were unsatisfied by the public transport, while only 28.2% were satisfied by the public transport (Fig. 3). In the same survey, 86.4% of the participants considered that public transport development should be a priority (Fig. 4). This aspect shows that the citizens are open to using public transport instead of their personal cars.

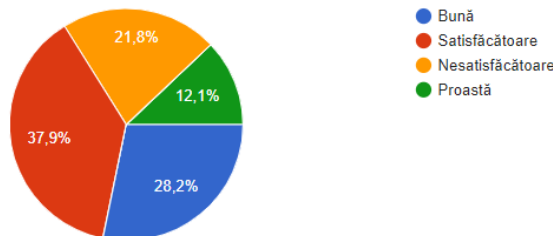


Fig. 3 – The level of satisfaction of the population of Blaj regarding the public transport [5].

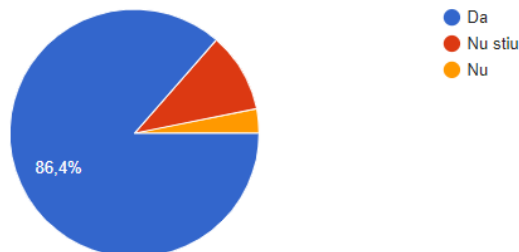


Fig. 4 – The percentage of the population of Blaj who considers that public transport should be a priority [5].

The Urban Mobility Plan of Blaj for the period 2020 – 2035 presents the current situation of the public transport in the area [6]. Currently the public transport in the area

around Blaj and from Blaj to Alba Iulia is operated by private companies. Buses operate at every 1 to 3 hours depending on the route and the distance between the final destinations. From Blaj to Alba Iulia only one private company operates, and the buses run every 2 hours, with the last bus departing from Alba Iulia at 6 pm (Fig. 5). The Urban Mobility Plan also mentions the bus which operate on the routes have reduced comfort and safety for passengers.

**Plecari Luni-Vineri**

Alba-Iulia	Blaj
06:45	05:40
10:00	06:40
12:30	08:20
15:30	11:15
16:20	14:10
18:00	16:45

Fig. 5 – The bus schedule on the Blaj – Alba Iulia route [9].

The alternative is rail transport. However, from Blaj to Alba Iulia there is only one direct train belonging to the public company CFR Călători, namely train number IRN 346 (Fig. 6). The rest of the trains need transfer in Teiuş where the waiting time may be up to 1 hour (Fig. 7). Given the fact that trains in Romania have delays up to 1 hour, there are high chances for the passengers to lose the transfer train to Alba Iulia.



Fig. 6 – Train number IRN 346 is the only direct train from Blaj to Alba Iulia operated by the public rail company CFR Călători [8].

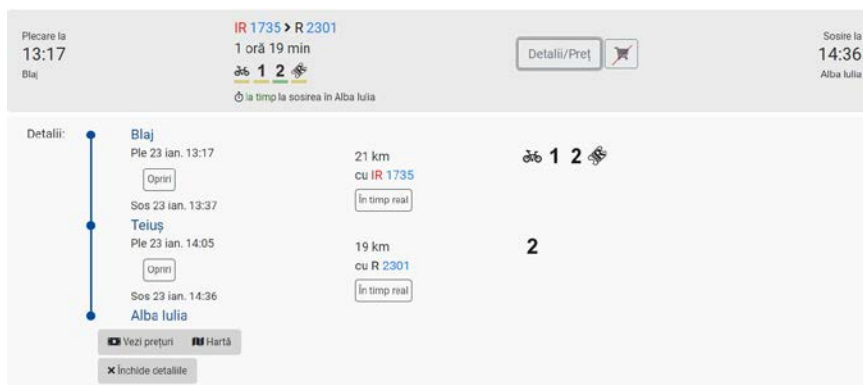


Fig. 7 – Train number IR 1735 from Blaj requires transfer to the rail junction Teiuş from where train number R 2301 departs to Alba Iulia. According to the rail company CFR Călători, the waiting time for the transfer train is about 40 minutes [8].

Therefore, the road transport from Blaj to Alba Iulia is, now, the best alternative for commuting as the time of the trip is on average 40 minutes.

### 3. Results and Discussion

The Urban Development Strategy of Blaj for the period 2021 – 2027 presents solutions to improve the public transport in the *Operational Objective 1.2 – “Development of Sustainable Public Transport Systems”* [5]. The proposed solutions are as follows:

1. Investing in integrated public transport networks: projects to implement the public transport system operated by Blaj Municipality which connects Blaj to all the 9 extra urban areas, to create local operators for the efficiency of the local public transport.
2. To design the public transport station: projects for the upgrade of the bus stops, install machines for issuing tickets, install electronic panels with information on the public transports, alternatives on the routes and transfers. Also, there is a project to design parking spaces outside Blaj to encourage the use of public transport to the town’s key points.
3. The upgrade of the train stations, introducing machines for issuing tickets.
4. Developing intelligent systems to monitor the road traffic.
5. Developing alternate solutions for public transport which are environmentally friendly. Here there are projects for purchasing electric buses and to develop infrastructure for bicycles.

These are general measures as the Urban Development Strategy of Blaj is more complex because it includes sustainable development measures in other areas such as tourism, culture, environment et cetera. The Urban Mobility Plan of Blaj provides more details on the measures to develop the public transport. It also includes a model to determine the greenhouse gas emissions. However, the Urban Mobility Plan of Blaj only focuses on the public transport inside Blaj and not on the public transport from Blaj to Alba Iulia.

### 4. Conclusions

The measures presented in the Urban Development Strategy and in the Urban Mobility Plan of Blaj, respectively focus only on the Municipality of Blaj and on its metropolitan area. To develop the public transport on the Blaj – Alba Iulia axis it is necessary to develop a mobility plan at regional level which would provide measures both for road traffic and rail traffic. In this case, first data should be collected related to the number of buses and trains which operate from Blaj to Alba Iulia, the number of commuters on the respective route, and the total number of passengers (both commuters and occasional travellers) on the respective route to determine the target population. The target population is necessary to see if private companies may be attracted for rail transport or if it is possible to create a public transport with electric buses, which would also be an environmentally friendly infrastructure.

### 5. References

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