



Infrastructure – transport, technical infrastructure

Transport and infrastructure

The transport infrastructure in the Austrian-Slovak border region is determined by:

- the degree to which the entire border region is connected to the European high-speed network,
- the area's accessibility in inter- and intra-regional terms
- lack of the connections in some areas (missing border crossings across river March/Morava)
- inner-urban and agglomeration traffic problems

Within the border region there are large differences in terms of inter- and intra-regional accessibility. Whereas the Vienna/Bratislava area and the trilateral border area of Slovakia/Austria/Hungary are internally linked both by roads and railways, though with qualitative shortcomings in infrastructure and transport organisation, these links are inadequately developed in large parts of the area along the border further to the north, which is mainly due to the peripheral location of this area and the barrier formed by the river March/Morava.

In an interregional and intra-regional context, the two large cities are each a central national hub within the transport network (railway, road, air and water transport). If viewed from an overall cross-border perspective, the main traffic axes of the two countries are symmetrical, because both Vienna and Bratislava are at an extreme peripheral position within their respective national territories, whereas within the border region they hold a central position and the intra-regional traffic flows are directed towards these centres.

Up to now, the limits of the existing infrastructure have become evident in the wake of the increasing traffic flows along the east-west and north-south axes. The development of the cross-border transportation network has failed to keep pace with the dynamic development of the region. Among other things, the road connecting Vienna and Bratislava is a bottleneck for the flow of west/east traffic (detour for road freight traffic, road travels through Hainburg, low capacity of the border crossing Berg/Petržalka). This gap is planned to be closed, when the highway connecting the A4 motorway linking Vienna and Budapest to the southern bypass of Kittsee and the highway border crossing Kittsee/Jarovce will open for traffic.

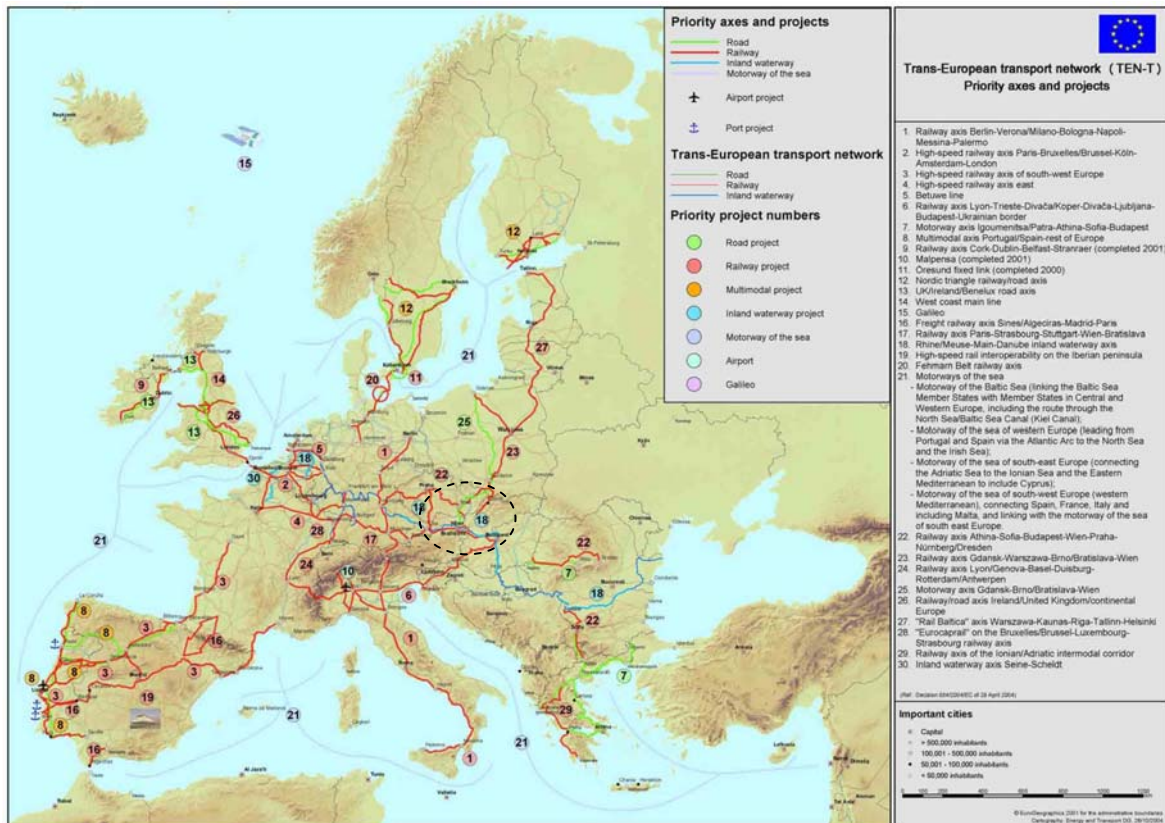
Within the agglomerations on both sides of the border, the high degree of integration of the cities and their surroundings causes traffic congestion on the roads that have to cope with regional as well as national and international traffic flows.

Of the European transport corridors defined in the Helsinki Agreement, corridors IV and Va have direct links to the region. In the future, the regional transport routes must be oriented on the major international routes in order to achieve a harmonised transport network. Particularly relevant in the co-operation area are the following TEN-T projects:

- 18 Rhine/Meuse-Main-Danube inland waterway
- 22 Railway axis Athina-Sofia-Budapest-Wien-Praha-Nürnberg-Dresden
- 23 Railway axis Gdansk-Warszawa-Brno/Bratislava-Wien
- 25 Motorway axis Gdansk-Brno/Bratislava –Wien



Map 5: Trans-European Transport Network (TEN-T)



Concerning the **roads** the main problems in the region are:

- The northern part of the Austrian border region, however, is largely undeveloped as regards motorway infrastructure. The main roads between Vienna and this area are national roads.
- Compared to other parts of the country, southern Slovakia (Šamorín, Dunajská Streda) is still somewhat behind in terms of road infrastructure, but there are plans to build a "Southern Road Line".
- Transport capacities on the road network outside of Bratislava are sufficient. The access roads into and the passage roads through Bratislava, however, pose certain problems
- In the northern part of the border region there is no border crossing possibility for the international traffic.

The connecting cross-border **railway** lines were largely neglected in the past and sometimes even dismantled. Given the expected increase in importance, some lines like the Parndorf-Kittsee-Bratislava line has been restored, and a restoration of the former Bratislava line (Vienna-Hainburg-Bratislava) appears to be an interesting option for the future. Although railway capacities, in general, may be considered sufficient, there is still a need for certain modernisation measures

- the further improvement of the railway connection between Vienna and Bratislava
- the connection of the railway system to the urban transport systems



- the modernisation of the rolling stock, stations,
- improving the links between railway system and air transport (connection to the airports)
- to improve the attractiveness of the railway (for cross border commuting)

As an international route of transport the **Danube** plays an important role in the border region. The geographical potential for transport was increased considerably with the opening of the Rhine-Main-Danube Canal and the extension of the Gabčíkovo storage lake. In the period 2000 – 2005 the freight transport on the Danube (measured at Hainburg) increased from 7.1 Mio. tons to 9.0 Mio. t.

The ports of both Vienna and Bratislava are designed to fulfil vital functions in handling cross-border freight traffic and in removing freight traffic from roads in the process of encouraging and expanding combined modes of transport. The waterway Danube is still important for tourist use connecting 4 European capitals and their surroundings. With the “Twin city liner” connecting the cities of Bratislava and Vienna a new attraction started to operate on 1 June 2006.

Given the mounting levels of freight transport, expanding the **combined modes of transport** and intensifying cooperation of the different transport operators (road, railway and water-borne transport, in particular) is going to be of vital importance in the region. The extension of freight terminals and the handling of logistical tasks by the ports are main activities in this context.

In the Austrian-Slovak border region two international **airports** are situated in immediate vicinity of each other in the border region. The Vienna-Schwechat airport has become one of the major traffic hubs between Western and Eastern Europe as well as for destinations to the Middle East. In 2005 15.89 Mio. passengers were counted.

Passenger frequency at the Bratislava-Ivanka airport, by comparison, is much lower. However, this airport has reported a significant increase in the number of transported passengers in last five years. In the period 1999 to 2005 the number of passengers (excl. transit) increased by 21% and the volume of cargo rose by 44.2%, what finally improved the Bratislava airport importance in the region. Recent trends, however, indicate that there is a considerable potential for synergy between these two airports and that Bratislava-Ivanka is already taking on a certain relief function for Vienna-Schwechat. An expansion of public feeding lines, such as the gradual expansion of the Bratislava line (express line from Vienna's city centre to the airport, enhancing existing services to Wolfsthal and establishing a connection to the Kittsee-Bratislava route), is also being discussed in this context. Furthermore, the Ivanka international airport in Bratislava is to be modernised and better integrated into the inner-regional public transport system.

As a result of long-standing cooperation, a number of cross-border **cycling routes** were established in the trilateral region between Austria, Slovakia and Hungary. The cycling route along the March/Morava and the international Danube cycling route are of particular importance for tourism in the Austro-Slovak border region. Both on the Austrian and the Slovak side of the border, various side routes were established (e.g., in Slovakia, a route to the Carpathians, Morava Cycling Rote) to add to the Danube route and make it even more attractive for tourists. Plans for a further expansion of the cycling routes network (in co-operation with Hungary) are under way; these also include a further integration of national nature protection areas (the Danube wetlands, Neusiedlersee, the March/Morava wetlands, Malé Karpaty, etc.).



Public utilities infrastructure

The public utilities infrastructure in the region is marked by a considerable difference in quality on the two sides of the border. While a high infrastructure level in the fields of water supply, wastewater management and waste management has been observed throughout the Austrian part of the region, there has been and is still a lot to be done on the Slovak side to ensure and improve the quality of these services. These basic facilities, as well as qualitative improvements in this sector are among the fundamental prerequisites for enhancing the appeal of the location and for initiating successful strategies to attract companies to the region.

Availability and treatment of groundwater are considered major problem areas. Long-term solutions have to be found here to counter pollution and drops in groundwater levels both on the Austrian side (especially in Marchfeld region along the March/Morava) and on the Slovak side (in the area between Trnava, Bratislava and the Danube).

Power supply

The border region between Austria and Slovakia is rich in watercourses, and these ample water supplies are used extensively for power generation. It is not only the newly-erected hydroelectric power stations in Vienna and Gabčíkovo which contribute significantly to the power supply of the entire region. 13% of Vienna's power consumption is covered by hydroelectricity, for example. On the Slovak side, local power suppliers are only able to cover 20% of the power consumption of the Bratislava region, while additional electricity has to be imported. Further power suppliers in the region are the hydroelectric power stations of Králová and Madunice as well as the nuclear power station in Jaslovské Bohunice.

The high energy demand from households and the production sector gave rise to searching for and utilising other forms of energy. In recent years the sources based on renewable energy increases in the entire border region. The most used energy is the energy of rivers, the utilisation of wind energy and biomass has started in last few years. Solar energy is used minimally.

But not only the natural resources for producing renewable energy also a high level of experience and research expertise in this field is available in the region. As one example the European Centre for Renewable Energy (Güssing and Bruck an der Leitha) can be mentioned. Bratislava and the University of Mosonmagyaróvár are partners in that trilateral network and one of the main activity of this network – financed by INTERREG IIIA – is the establishment of a “master course on Renewable Energy in Central and Eastern Europe”.

Telecommunications

The telecommunications infrastructure in the entire Austrian-Slovak border region is being brought up to modern, quickly evolving standards at a very fast pace. A modern ground-based and non-ground-based telecommunications infrastructure is crucial to ensuring the competitive power of the entire region.

While the telephone network in the Austrian part of the region virtually covers the entire area and three mobile telephone networks are already in operation, the number of telephone subscribers to the terrestrial network in Slovakia is still rather low and it declined by 2.9% in period 2003-2004.



The dynamic development in the sector of mobile telephony, however, lessens the urgency to expand the terrestrial telephone network. On the other hand, the DSL connections allowing internet access increased by 89% from 2003 to 2004.