

14. Road traffic in Ljubljana

Matej Ogrin

Although Slovene roads are in general considered to be among the less busy European roads, road traffic is currently experiencing major changes. This can be seen in the rapid growth of freight transport, mostly transit traffic. During the first years of independence, traffic was very light in the country and, due to the instable economic and political situation, nobody predicted the changes that would occur in the next 15 years. Nevertheless, economic growth after 1995, gradual stabilization of the situation in the republics of the former Yugoslavia and the revived upswing of tourism on the Adriatic coast put Slovenia on the map as one of the relatively important transit countries of Europe by 2000.

Economic growth resulted in a rapid increase of motorization, leading to 517 passenger cars per 1000 inhabitants in 2009. The building of motorways and the revived upswing in tourism have contributed to the growing importance of Slovenia in terms of tourist transit. Economic growth and the increase of motorization can be observed in neighbouring countries as well, especially in Croatia and Hungary, since Austria and Italy had already reached this level.

Figure 53: Highway system in Slovenia.

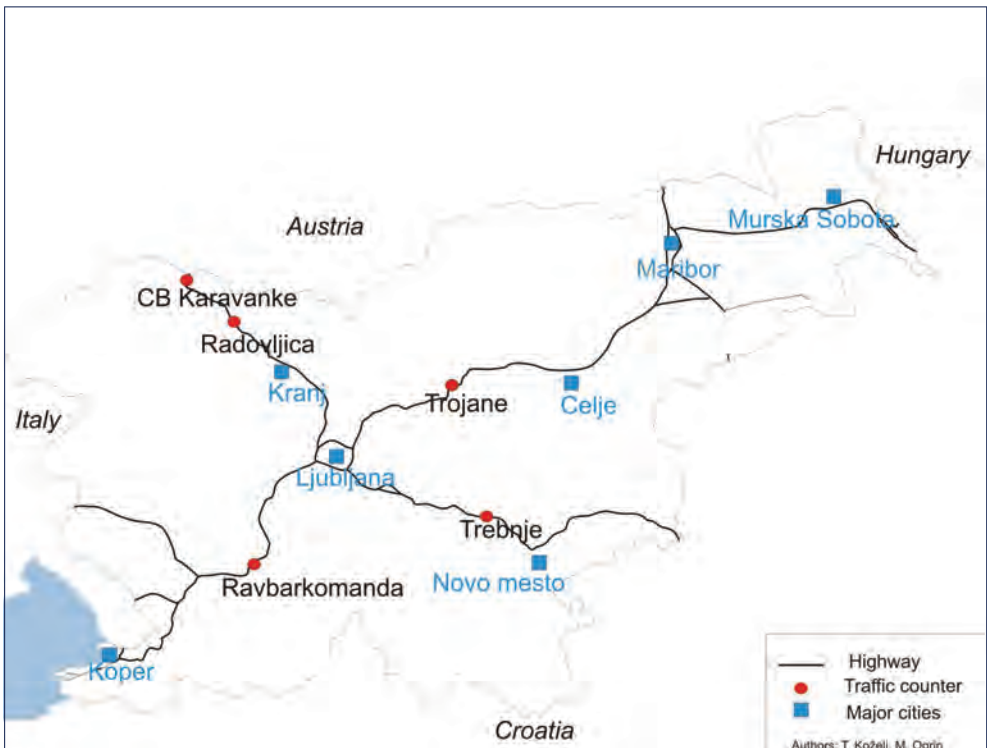


Table 42: Traffic on motorway crossing sections 1992 – 2009.

Method of privatization	1992	1994	1996	1998	2000	2002	2004	2006	2008	2009
BC* Karavanke (A1)	2.344	3.732	4.644	4.735	4.950	5.652	6.100	6.283	6.604	6.681
Radovljica (A1)	12.386	16.139	20.675	21.859	23.806	24.904	26.402	27.195	27.709	/
Trebnje (A1)	7.058	8.277	12.461	14.400	15.100	18.199	19.500	19.805	21.149	23.000
Celovška road (Lj)	22.000	47.000	56.692	60.000	60.000	58.533	58.968	59.721	60.261	48.000
Ravbarkomanda (A2)	14.884	19.957	21.578	23.658	26.169	28.053	30.758	34.168	37.316	37.528
Trojane (A2)	9.967	13.379	15.030	16.100	17.204	19.779	22.585	28.312	31.347	35.600

Note: * Border Crossing with Austria.

Source: DRSC archive.

Table 43: Traffic increase index 2009/1992.

	index 2009/1992
BC Karavanke	285
Radovljica	224*
Trebnje	326
Celovška road (Lj)	218
Ravbarkomanda	252
Trojane	357

Note: index 2008/1992.

Table 44: Annual average daily traffic on sections of the Ljubljana Bypass between 2000 – 2008.

Method of privatization	2000	2002	2004	2.006	2008
East Bypass	28.086	42.772	49.190	55.111	60.026
South Bypass	34.254	45.230	49.920	53.961	59.992
West Bypass	64.102	62.114	65.452	68.500	67.568
North Bypass	54.330	53.182	56.398	59.468	61.274

Source: Prometne obremenitve 2000 – 2008, 2010.

Table 42 indicates a great increase in traffic from the years right after the emancipation of Slovenia to 2009 on all of the sections. The main transport axes, A1 (Dolga vas – Koper) and A2 (BC Obrežje – BC Karavanke), which cross the Ljubljana bypass, have an important effect on the traffic around Ljubljana. The increase in traffic implies a general increase of motorization in Slovenia, as well as the growing importance of the main transport axes in Slovenia, mostly roads A1 and A2, as transit roads. Table 43 indicates a relative increase in the period mentioned. On most of the sections the increase is between 200 to 300 percent.

Figure 54:

Ljubljana bypass is also crossroad of main Slovenian highways A1 and A2; many times it is overloaded with traffic, so congestions occur daily.

Photo: M. Ogrin.



The trend of increasing traffic can be noticed in Ljubljana too, which has a few special characteristics when it comes to traffic. Ljubljana is not only the largest city in Slovenia but also its financial, administrative, economic and demographic centre. This means that numerous traffic flows cross, join and emerge here as well. Table 44 indicates the increase of traffic on the Ljubljana Bypass from the time it was built. On the Ljubljana West Bypass the increase was low, only 5 %; on the Ljubljana North Bypass the traffic increased by 13 %; on the Ljubljana South by 175 %; and on the Ljubljana East by as much as 214 %. The annual daily traffic on all of the sections were already very similar and in the range of between approximately 60.000 and 68.000 vehicles.

Ljubljana's population has been declining over the past few years, but only because its residents are moving to the periphery, often situated already outside of the Urban Municipality of Ljubljana (UML) area. Nevertheless, all of the stated factors have a great impact on the city's traffic. If we consider the unsuitable public transportation system of the city and very bad inter-urban traffic system, it is understandable that a passenger car is the most widely used means of transport. In Ljubljana, which is the largest employment centre in the country, there are more than 170.000 workplaces with 47.000 students, 79 % of whom come from other municipalities (Bajt, 2006). The number of cars in Ljubljana has been increasing throughout the whole post-war period. The number of motor vehicles increased from 135.567 in 1996 (the year when the UML was founded) to 171.516 in 2008 (Statistical Yearbook of Ljubljana, 2009). In 2008, Ljubljana had 276.091 residents and 141.758 registered personal vehicles (Statistical Yearbook of Ljubljana, 2009), which amounts to 513 vehicles per 1000 residents or 1.9 residents per vehicle. Despite the slight decline in the population, we can see an increase in daily kilometres driven, car ownership and daily migration (Plut, 2007).

In UML 65 % of all the trips are done by car. Among the trips between the city and the urban region this share increases up to 90 %. Inside UML the picture of daily trips is a bit different, since 55 % of them are done by car. Walking takes second place with 19 %, after which comes public transportation (14 %), while 10 % of the residents use their bicycles for internal migration (Bajt, 2006). Inside UML 1.2 million trips take place daily, 70 % of which are taken by Ljubljana residents and 30 % by the rest. According to different estimations between 90.000 and 120.000 people come to Ljubljana every day, two thirds of them by car (Strategija trajnostnega razvoja ..., 2001; Lej ga, tramvaj..., 2002; Pichler Milanović, 2005).

The infrastructure for stationary traffic is inadequate for such a number of vehicles, since only 13.216 public and private parking facilities are registered in Ljubljana. Under this category come parking spaces on the streets, parking spaces belonging to Slovene Railways, parking spaces managed by the public company Parkirišča, parking spaces in parking garages and private parking facilities (Možina, 2005). If also we take the parking spaces in front of residential areas into consideration, we can see that at the end of the nineties the total number of parking spaces in UML was 28.000 (Prostorski plan UML – Plan ..., 2000).

Most of the daily commuters who come to the city by car park in unregulated parking facilities, a large number park illegally as well. Ljubljana Public Transport (LPP), which operates on 23 lines, has experienced some changes in the past few years. It has started to adapt to the needs of the residents, which is the first major step forward in the field of public transport in Ljubljana. The access to LPP bus stops has been good for years. 94 % of residents live within 500 m of the nearest bus stop, although there are still some uncovered areas such as Kozarje, Glince and Zgornji Kašelj (Bajt, 2006). The main problem LPP has is the slow speed of the buses, which at only 17 km/h is 10 km/h lower than the average speed of private vehicles, even in peak hours (Bajt, 2006). A positive change which occurred in 2008 was a trial extension of the network to Brezovica and Barje.

During 2009 parking fees in UML varied according to the position of the parking space in relation to the city centre. On the periphery, in parking facilities P+R, the fee was only €1 per day. In the city centre one hour's short-term parking cost €0.6, whereas in garages in the city centre the fees were higher, costing up to €1.5 to €2 per hour. An electronic card called Urbana is used to pay for bus rides. One ride costs €0.8 and lasts for 90 minutes, during which time the passenger can change to an optional number of buses. After that he needs to pay an additional €0.8. A comparison of prices between a visit to the city by car and by LPP still favours the car, which hinders the progress of LPP in Ljubljana. The number of passengers who use the LPP has been declining for the past two decades, although in recent years the decline has been less strong. In 2003, 94 million passengers used the public transportation system, while in 2008 only 84 million did so (Predstavitev ...2010).

For the urban region of Ljubljana, which includes several municipalities around UML, it could be said that railway passenger transport does not even nearly meet the needs of the residents. Railway traffic is developed in the directions towards the cities of Kamnik, Litija, Grosuplje, Logatec and Kranj. Dispersed settlement, which is becoming more and more frequent with the construction of new residential neighbourhoods and shopping centres on the periphery of Ljubljana is contributing to the increased use of passenger cars. This is one of the reasons for frequent congestions in Ljubljana and the traffic is in accordance with this.

It is evident that there are local, regional and European traffic flows in Ljubljana, and this can cause major congestion and traffic jams when peak hours coincide. The new Šentvid Tunnel has probably managed to reduce traffic for a few years since it was opened in the second half of 2008, but in the long run traffic will probably increase because of it.

Table 45: Annual average daily traffic in March 2009 on selected roads in Ljubljana.

Celovška road Mercator	44.900
Celovška road Tivoli	40.760
Dolenjska road (London)	21.078
Drenikova road (podvoz)	31.078
Dunajska road podvoz	41.898
Dunajska road (bridge across the Sava river)	19.774
Erjavčeva road	10.121
Poljanska road	6.119
Slovenska road (Drama)	19.117
Slovenska road (Nebotičnik)	26.320
Šmartinska road	31.862
Tivolska road (Tobačna factory)	32.318
Tržaška road (Vič)	35.310

Source: UML traffic data archive.

Table 46: Change in annual average daily traffic on chosen arteries in Ljubljana.

Section	MDT* 2004	MDT* (March 2009)
Celovška road (Mercator centre)	58.972	44.900
Dunajska road (underpass)	41.275	41.898
Tržaška road (Vič)	32.627	35.310

Note: * mean daily traffic.

Source: UML traffic data archive.

Traffic is high only on the sections of arteries and on connecting roads which connect the arteries (Tivolska road, Drenikova road). Most of the sections of more important roads in Ljubljana have a load of between 10.000 and 30.000 vehicles per day. Low vehicle speed in urban areas is also an important factor, as this contributes to the low traffic flow capacity and pollution of the city atmosphere. So the traffic on city roads with lower travelling speeds cannot be compared with that of regional streets with faster travelling speeds.

Table 47: The proportion of private vehicles, cargo vehicles of all kinds and buses on some of the roads in Ljubljana in 2004.

Section	Percentage of private vehicles	Percentage of cargo vehicles of all kinds and buses
Drenikova road at the underpass	99	1
Slovenska road at Drama	94	6
Tržaška road at Dolgi Most	96	4
Zaloška road at the heating plant	97	3
Celovška road at the underpass at Tivoli	96	4
Šmartinska road at Emona	97	3
Dunajska road, the underpass by Gospodarsko razstavišče	96	4

Note: * mean daily traffic.

Source: UML traffic data archive.

The greater proportion of traffic in the city is composed of private cars, between 94 and 99 %. This is not surprising, since cargo vehicles are usually forbidden from or restricted in cities. Among other categories only public transport has a significant share of vehicles, especially on main Ljubljana roads, such as Celoška, Dunajska and Zaloška roads.

Figure 55:

Slovenska road is still main transport axe in the centre of Ljubljana; railway system in Ljubljana is unexploited and in form as it is today, contributes to road congestions.

Photo: M. Ogrin.



Ljubljana's traffic network has a star-shaped structure, which is formed by the main arteries, surrounded by the city motorway circle. The internal city traffic circle is not yet fully built. The bus routes and bus stops network are incorporated into this structure very well, and are highly adequate for the city area in terms of space, as there are not a lot of areas with bad access to bus stops. This is the case only with recently built neighbourhoods, for which it cannot be said they took access to public transportation into consideration (for example the neighbourhood in Mostec). The same applies to the larger shopping centres (such as BTC or the Rudnik shopping centre) and the Stožice sports centre. Public transportation is adapting to these changes slowly and only in some cases, additionally strengthening the already strong dependence on passenger cars.

The star-shaped structure, in which some of the arteries lead straight into the inner city, causes great congestion in peak hours, which are a very common occurrence in Ljubljana. As a lot of the traffic is oriented towards the city centre, this makes slow moving and stationary traffic one of the main problems of traffic in Ljubljana. The parking policy still promotes parking in the city centre. This is evident in the low prices of the existing parking places and the fact that there are quite a few parking garages in the city centre. As if that were not enough the city authorities are building a new parking garage in the centre and another one is planned. The possibility of parking in the centre still stimulates driving into the inner part of Ljubljana and that causes daily heavy traffic loads on the arteries, which at peak hours already exceed the road capacities. Most of the passenger car traffic heading into the city centre should be stopped on the periphery and redirected to public transport. In this way the overloaded roads would be less busy; at the same time the negative effect of traffic on the environment would be reduced and the numerous parking facilities in the centre would gain different character. Traffic flows from other regions into Ljubljana should be stopped sooner and people should have quick and easy access to the city centre by public transport.

Although UML is introducing the first changes to public transport in decades, it should be more flexible. At the moment, buses still cannot take cyclists, and there are no parking spaces for bicycles at bus stops. On some lines the frequency of the service is still too low and the prices are not competitive. Yellow lanes are considerably too short and more and more empty buses stand in traffic between passenger cars with one or two passengers. For several years a uniform ticket for all Slovenian public transport has been discussed but it has not been introduced yet. In numerous settlements on the periphery, the basic infrastructure for walkers and cyclists such as the pavement or a part of the road reserved for bicycles or even a bicycle lane is still missing. Although pavements and bicycle lanes are being built more frequently, they are still too rare, while lack of connectedness remains a big problem.

Bicycle traffic is growing fast in Ljubljana and exceeds the capacities of the infrastructure, but the impossible circumstances of motorized urban traffic have caused the number of cyclists on the streets of Ljubljana to be much higher than it was a decade or two ago. This is why a lot of the residents of Ljubljana are encouraging the authorities to create a good and safe network for bicycle transport. In 2010 Ljubljana implemented a bicyclist strategy, which should be the foundation for the development of Ljubljana as a bicycle-friendly city.

Fast motorization in Ljubljana brought predominance of a car on roads and parking lots. Public road transport has only a minor role at intra urban mobility and even smaller role at mobility between Ljubljana and the suburbs. State railway system is old and incapable to take an important part of migrations from cities around Ljubljana to Ljubljana. To achieve better intra urban mobility, many citizens of Ljubljana started to cycle daily to school or work due to problems with road transport in the city, however cycling infrastructure is developing far too slow to fulfil the cyclers needs.

With regard to the trend of increasing settlement on the periphery, we can expect that public transport in the city will continue to lose its meaning if it is not thoroughly reformed. The existing situation leads to continuing traffic jams and the predomination of passenger cars. Inevitably, this has a major negative effect on the environment, especially the use of space, noise, air pollution and energy consumption. Because of traffic pollution the quality of air in Ljubljana is becoming a serious problem, since particle pollution in the city as well as nitrogen dioxide and ozone pollution in some parts already exceed legal boundaries.