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# STRATEGIC DIRECTION SESSION ST2
## *Roads and quality of life*


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**SLOVAK REPUBLIC**

**Abstract**

The Slovak Republic (SR) is a small country with a transitional economy, lying in the centre of Europe. In light of its geographic position and dimensions, roads play a significant role here.

**Priorities for construction of roads** come out of the basic strategic development documents passed by the SR Government. They are primarily aimed at society-wide economics, savings for road users, the securing of internationally agreed obligations and the protection of the environment. The highest national priority is European integration, joining Slovakia to trans-European corridors, addressing problems of road overcrowding, removing congestion and construction of main highways and motorways to improve access to country estates and regional territories.

**The planning and evaluation of road construction suitability** on SR territory is based on valid legislation. Its basis is judging the suitability of a road project from the viewpoint of its effects on the environment, and at the same time the financial feasibility of the project must be appropriate. From 1994 in Slovakia the Act on the environmental impact assessment (the EIA process) has been in force. This law is fully compatible with EU legislation, which very strictly defines the needs and extent of the evaluation of transport constructions on the environment. From this follows a reciprocal relation between technical proposals, environmental protection and the evaluation of the suitability of road construction.

**The impact of road development** is clearly in the area where it is a question of quality improvement of the road network by the construction of highways and motorways. The development and building-up of urban roads, in light of a depleted financial situation, has stagnated. The degree of motorization and automobilization has sharply increased, especially in large cities. This is also contributed to by a lessened demographic development in rural areas. Changes in the roads network have led to a change in life-style evidenced in changes of the time/space characteristics of road transport (mobility, trip purposes, imbalances in loading on the road network and vehicle usage). The most marked change has been in the transfer of a significant volume of travellers from public transport to the individual automobile transport. The appearance of congestion on the road network has increased, particularly in large urban areas and on the access routes to their feeder territories. The negative impact of road transport on roads' surroundings is also on the rise. Due to lacks of financing, research on transport has been limited, which worsens the flow of information to both decision-making spheres and to the public.

The present **state of roads** in Slovakia **still appears under-dimensioned.** Therefore road construction is very well-received by the public. The increase in road loading has led to the adoption of a wide variety of measures for limiting the negative impact of roads on the environment. In many cases, the initiators of the preparation and implementation of these measures has been a petition action by citizens, who ever increasingly realize the value of a healthy and quality environment.

The basic principle **of the policy of implementation of long-term sustainable development** of roads is contained in the document, "National Strategy for SR sustainable development", which was approved by the Government of the SR in 2001. A strategic goal is to improve the accessibility of regional and peripheral areas of the country by sustainable development of the road network. This trend has been gradually incorporated in legislative instruments for the planning and construction of the road network, while the basic law in this area remains the EIA Act. In the coming period, there will be consideration of seizing the transport applications of telematics for the road network, which would enable coordinated administration of transport processes on the territory and would contribute to a significant degree to the implementation of a policy of sustainable development and a higher level of quality of life.

**The formation of groups for projection of roads** is based on the specialist capabilities of authorized engineers and architects, in the sense of Act no. 236/2000 Coll. The road design, as constructions in the public interest, is carried out in the form of public procurement, which is also strictly regulated by the relevant laws. For the needs of each project are formed implementation groups with the representation of all necessary specializations which a given project calls for.

## 1. PREFACE

The Slovak Republic (SR) lies in inland Central Europe. It has approximately 5.4 million inhabitants, an area of 49034 km2 and a population density of 110 inhabitants per $km^2$, comparable with Denmark, Belgium or Portugal. According to the new administrative territorial division of 1996, it is divided into 8 regions with a size of from 550 to 790 thousand inhabitants. The individual regions are divided into 79 districts. The Slovak Republic borders with 5 countries – the Czech Republic, Hungary, Poland, Austria and Ukraine. Its geographic position and dimensions of 226 x 429 km underline the need for a road infrastructure not only to secure the internal needs of the country, but also its regional and international contexts.

From the viewpoint of its inhabitation structure, Slovakia is an urbanized country where a majority of the inhabitants live in towns of over 5,000 inhabitants. The capital is Bratislava, with a population of 450,000 and an area of 364 $km^2$. Bratislava is the administrative, political and cultural centre of the country, with a developed economic and business potential. It lies in the south-west part of the country on the border with Hungary and with the European Union, close (60 km) to Vienna the capital of the neighbouring state Austria. The advantages of this position multiply the economic potential and transport accessibility of both the city itself and its hinterland region, where employment, productivity of labour and localization of direct foreign investment is the largest in the country, and on the other hand an unemployment rate and work incapability have for a long time been on the lowest level.

From the viewpoint of evaluating the transport processes on the territory of Slovakia, requirements following from the changed priorities of both social and individual life are changing. As any social change, this is a long-term process where some indicators act very quickly and operatively but others require time, patience and the activation of certain phenomena. For example the dramatic increase in the level of motorization and automobilization was immediately reflected in overloading of the road network and in negative impacts of road transport, however, the formation of a value scale reflecting the higher degree of quality of life development is a long process of education and social change which Slovakia, like any country, must go through.

This applies similarly to the process of operation and up-grading of the road infrastructure, from the viewpoint of its needs and its function in society as required by **sustainable development**, otherwise put, "**such development in which the satisfaction of the needs of the current generations does not endanger the satisfaction of the needs of future generations".**

## 2.PRIORITY REQUIREMENTS FOR THE CONSTRUCTION OF SLOVAKIA'S ROADS

Economic development and the raising of the standard of living bring with them at the same time an increase in the intensity of road traffic, personal individual automobile transport in particular. This situation places increased demands on the quality of the road network and brings about the need for modernization and construction of new routes, along with requirements for securing a higher degree of quality of life for the inhabitants.

The management of the road economy, including planning and development of the transport system and a conception for development and road-construction belong to the authority of the Ministry of Transportation, Posts and Telecommunications (MDPT SR). Each government, at the beginning of its term in office, accepts in its programme declarations tasks which contain the priorities and projects of state-wide development as well as development of individual industries, and this necessarily includes the area of transportation.

The planning and development of the transport system on the territory of towns and municipalities, under the sense of the Road Act, falls to the activity of the relevant state bodies and self-administration units.

In elaborating the current planning conceptions of road development in Slovakia, the transportation department begins from government-approved basic strategic development documents, which include mainly:

- Conception of Transport Development, 1993
- Up-dated Conception of the Territorial Development of Slovakia (KURS)
- Government Programme Declarations, 1998
- Conception of Motorway Infrastructure Development, 1999
- Principles of State Transport Policy, 2000
- New Project of Motorway and Highway Construction, 2001

At the present time, within KURS, a Development Plan of Road Transport of the SR is being developed.

Priorities observed by the Government and secured by the Ministry of Transport contained in these documents are primarily focused on:

- society-wide savings with reference to e.g. decrease in accidents, improvement in the environment, accessibility of territories...
- savings for users with reference to e.g. savings in time, fuel, operating expenses...
- savings in administration and maintenance of roads... as well as
- securing of internationally agreed obligations from the viewpoint of internal and international transportation linkages and
- environmental protection.

The implementation of the priorities and specific fulfilment of the complex investment, operating and ownership functions in relation to the road network in the activity of the state are guaranteed by the Slovak Road Administration (SSC), established by the Ministry of Transport, Posts and Telecommunications of the SR.

As a significant basic and informational resource for the planning of the development and assessment of the quality of the road network serve the documents (transport surveys, accident rates, quality of the road pavements) secured by the Slovak Road Administration (SSC).

From the viewpoint of external relations, the highest priority of the state is European integration and the incorporation of Slovakia with the trans-European corridors, which will make access to the common European market easier. From an internal viewpoint this is a solution increasing the intensity of road transport and reducing congestion, mainly by upgrading main routes, from which would follow to an improvement in the accessibility of built-up areas and regions.

These are priorities:

- upgrading of motorways and highways on the routes of the TINA European corridors (Figure 1) for:
- the territory of the capital of the SR, Bratislava
- in the north-south corridor Bratislava-Zilina-Čadca-SR/PR state border
- in the east-west corridor Zilina-Poprad-Presov-Kosice-Michalovce-SR/Ukraine state border
- on the other corridors outside of the TINA network
- as part of the development of I, II and III class roads of the road network:
- build and reconstruct those road sections with exceeded transport usage, mainly I class, and those with unfavourable technical parameters (mainly II and III class)
- build road bypasses for communities whose travelled sections have exceeded transport capacity
- remove spot defects and critically unsuitable localities
- build and reconstruct roads leading to border crossings.

## 3. PLANNING AND EVALUATING THE SUITABILITY OF ROAD CONSTRUCTION

The planning and evaluation of the suitability of road construction on the Slovak Republic territory comes out of valid legislation, with emphasis on environmental protection and territorial plans on each level:

- national
- regional
- built-up areas
- zones

and in part 2 stated basic development documents

The basic instrument is a judgment on the suitability of a road project from the viewpoint of its impact on the environment. At the same time a project must be suitable from the point of the financiability by the principle of economic effectiveness of the investment (Internal Rate of Return - IRR). The stated criteria are solved on the level of pre-investment preparation by the elaboration and evaluation of technological and environmental documentation (studies). In the sphere of roads, the decision-making bodies are the Ministry of Transport, Posts and Telecommunications of the SR (MDPT SR) and the Ministry of the Environment of the SR (MZP SR).

The process of designing of new road construction takes place in principle according to the approved territorial plans valid for the relevant territory. In the Slovak Republic are prepared three levels of territory planning documentations:

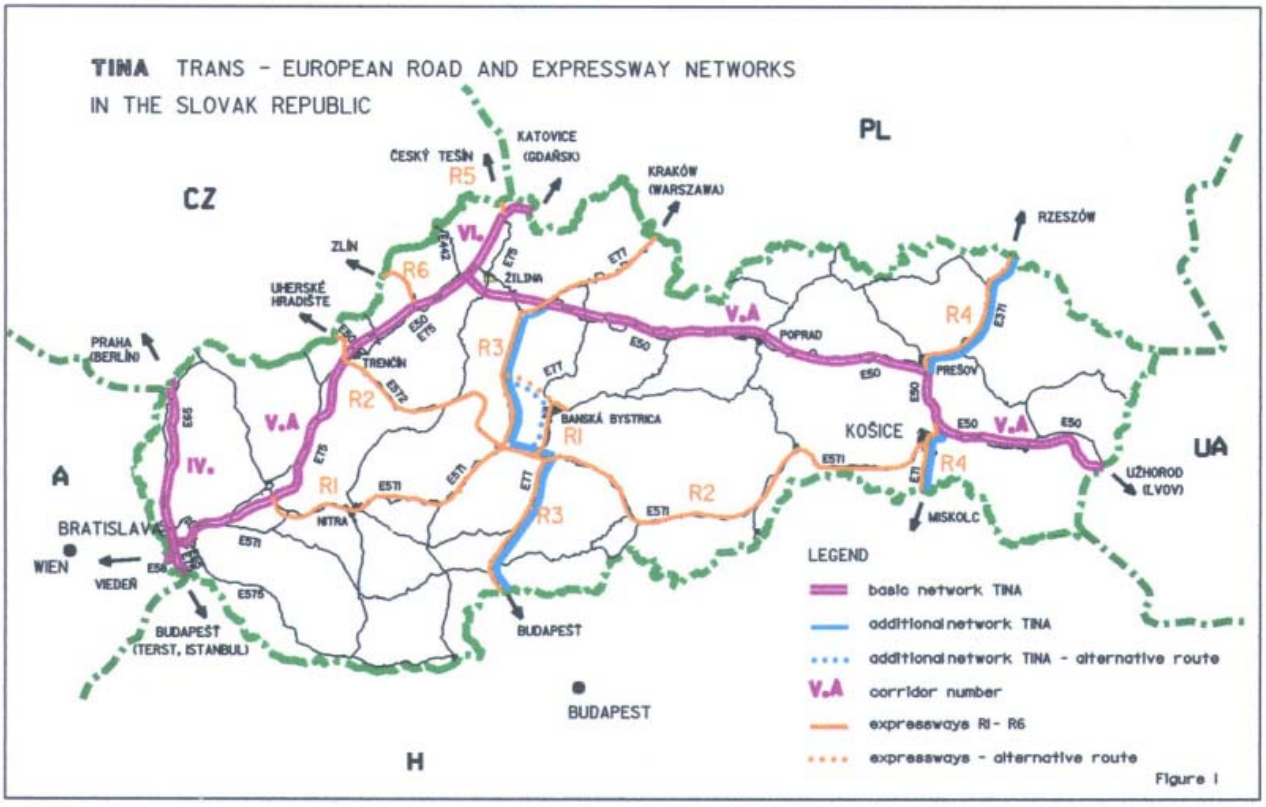
- Conception of the Territorial Development of Slovakia (encompasses the entire territory of Slovakia, approved by the Government of the Slovak Republic)
- Territorial plans of the Large Territorial Units (there are 8 in Slovakia, and all are approved by the Government of the Slovak Republic)
- Territorial plans of individual towns and municipalities; it is the duty of each municipality of over 2,000 inhabitants to have a territorial plan elaborated. The territorial plans of towns and municipalities are approved by the municipality or town administration.

In Slovakia Act no. 127/1994 on Evaluating the Influences of Activities on the Environment (EIA process) is in force. This law was prepared in close cooperation between specialists from the countries of the EU, and it is completely compatible with European legislation. This law defines very specifically the need and extent of the evaluation of transportation constructions on the environment. From this follows a reciprocal relation between a technical proposal, the protection of the environment and an economic evaluation. The entire process is overseen by MZP SR in cooperation with MDPT SR.

At the stage of elaborating project documentation for individual constructions are solved the technical, transportation and also environmental aspects of each construction. The project cycle has several degrees:

- Technical Study, as a basis for the EIA process
- Prebriefing and Report on the EIA process evaluation
- Construction programme for the performance of state expertise (Feasibility Study)
- Documentation for Territorial Decision (Preliminary Design)
- Documentation for Construction Permit (Final Design)

- Construction Drawings




The most complex stage of the planning and preparation is the time spent in the elaboration and approval of the documentation for the territorial planning permission, which presumes that all conflictive points have been resolved, as well that the coordination context of the new work in the existing and future territorial organization has been evidenced.
The organizational and investment aspects of the preparation and implementation of state roads (new construction, reconstruction and repair) are secured by the Slovak Road Administration centrally, along with its local organizational units. The financing of the construction and reconstruction of roads is dependent on the national budget and the MDPT SR budget chapter.
In the present transitional period it is necessary to weigh very carefully investments to the transport infrastructure, because demand for finances is markedly greater than the possibilities of financing by the state. The most recent material which has in detail evaluated the conception of development of the motorway and highway networks is the "New Project of Motorway and Highway Constructions", which was adopted by the Government of the Slovak Republic in 2001. This material has support in extensive analytic studies. The starting point for the material was the "Updating of Pre-investment Studies of the Motorway Development Programme in the SR", elaborated by a consultant company. The study, prepared in 2000 and 2001, in detail analysed and evaluated the motorway and highway network, its present state and presumed development, based on the demand for transportation services on Slovak territory (domestic and foreign). The up-dating came out of a detailed analysis of the demographic and economic development of the entire territory of Slovakia down to the district level and its impact on the need for development of the roads infrastructure. The analyses were prepared by specialist firms and the documentation was prepared by SSC database, statistical materials and a good number of direct research and field findings.
The studies looked at both the present state and follow-up prognoses of development in the time horizon to 2035. The presumed development and potential of the territory were transferred to the foreseen demands on transportation services, in this case on road transport and its diffusion throughout Slovakia and its existing and planned road network. Under evaluation was the technical state and efficiency of the road network and the requirements following from this for improving the quality and increasing the standard and capacity of the road network.

## 4. IMPACT OF ROAD DEVELOPMENT ON HUMAN ACTIVITY

In recent years the development of the motorway and road network has come under the influence of changes forced on it by internal and external political considerations. Emphasis has been placed primarily on the connection of Slovakia to the international road network, along with priority integration into the E.U. and, within the country, the accessibility of regions. These changes have caused a strengthening of the north-south transport linkage along the route of trans-European Corridors VA and VI, and have led to structural transformation and upgrading of the road network in favour of the decisive motorway and highway sections.

| Year | Motorway | 1st class road | 2nd class road | 3rd class road | Total |
|---|---|---|---|---|---|
| 1990 | 192.147 km | 3,060.728 km | 3,855.913 km | 10,828.047 km | 17,936.835 km |
| 1995 | 198.042 km | 3,073.988 km | 3,878.275 km | 10,718.219 km | 17,868.524 km |
| 2000 | 295.718 km | 3,221.719 km | 3,826.302 km | 10,393.658 km | 17,737.397 km |

At the present time, the density of state roads in Slovakia stands at 0.362 km/km$^2$, or 3.286 km/1000 inhab. I. class roads have a decisive transport efficiency, while the I-III class road network is sufficiently dense and covers the needs of delivery service of the territory of Slovakia.
The development and construction of urban roads (total, appx. 25,000 km) is stagnating due to the worsened financial situation. In essence there are being built only those sections of urban roads which are part of newly built or reconstructed feeders for state roads on town land. Other urban roads are maintained so that they ensure the operation of urban transport and the functionality of public transport. In the larger cities (Bratislava, Kosice), public transport companies share in the maintenance and repair of streets used for tram transport.
In the recent period, the development of motorization has seen a very steep rise.

| Year | Number of inhabitants (thou.) | Number of motor vehicles | Number of passenger vehicles | Degree of motorization (vehicles/1000 inh.) | Degree of automobilization (PV/1000 inh.) |
|---|---|---|---|---|---|
| 1963 | 4 314 | 222 357 | 43 599 | 52 | 10 |
| 1980 | 4 996 | 789 806 | 551 724 | 158 | 110 |
| 1990 | 5 311 | 1 116 400 | 876 024 | 210 | 165 |
| 2000 | 5 401 | 1 751 840 | 1 274 247 | 324 | 236 |

In spite of the degree of motorization and automobilization in Slovakia has not yet reached the standard of developed countries, there are regions where this degree is substantially higher than the national average. For example the Bratislava region has a motorization degree of almost 400 vehicles/1000 inhabitants, and the capital city itself has attained the standard of developed European countries with a motorization degree of 455 vehicles/1000 inhabitants and automobilization of 405 passenger vehicles/1000 inhabitants.
From the above data it follows that the increase in the number of passenger cars is faster than the growth of motor vehicles number. In light of the decreased demographic development, this has an influence on the rapid increase in the rate of automobilization.
Apart from the number of passenger cars, the structure of the vehicle fleet has also changed in favour of more powerful and faster cars, while the average age of the vehicle has reduced. These facts reflect sharply on the demands on the road network. Ownership and usage of an automobile have become status symbols for certain social groups, as well as an inevitable requirement for the performance of certain professions. Ever-higher demands are being placed on the quality of the road network, and are accompanied by the need for parking and road space for automobile traffic.

In light of the change in life-style, mobility, specifically mostly individual automobile transport mobility, the purposes of travel and the time variations of the distribution of traffic loading of the road network have changed. In particular the volume of commercial passenger vehicles has grown significantly, which, together with the decline of large, centrally-managed companies and the progressive emergence of a large number of small private companies and family firms, has caused a greater dispersion of inter-area transportation relations, mostly in the environs of larger towns as well as cross-border urban areas. The difference between rush-hour and off-hour traffic intensity has lessened, and the traffic loading of the road network is more equally distributed throughout the day and the week. While 20 years ago the share of rush-hours was from 10-15% of the daily loading, nowadays it represents 8-10% of outskirts and 6-8% of urban all-day intensity.
The passenger occupancy of passenger cars has also decreased sharply, with the average during the working day hovering around 1.5 persons/car as opposed to more than a 2.3 rating 20 years ago.
The most marked change in the course of the last decade is shown in the change in the significant volume of passenger transportation from public transport to individual automobile transport (figure 2). This phenomenon is most noticeable in the larger cities in Slovakia, and is associated with a reduction in subsidies and a concomitant increase in public transit fares. This leads to its inability to compete with private travel, which has the flexibility needed for the dispersed locations and purposes of transportation activity. Despite the fact that this trend can be considered as negative from the viewpoint of sustainable development and the quality of life of less solvent inhabitants of cities and deprived country areas and therefore requiring changing, the share of mass transit in Slovak towns and cross-border transportation of build-up territories is still higher than in EU or North American cities.
The rapid growth in automobilization and uncontrolled territorial development has as a result increased demands on the extent and quality of the road network and the level of associated services, as well as an increase in the negative impacts on road surroundings, particularly in urban areas.
The occurrence of congestion on the road network increased, mainly on the territory of larger towns on access roads, in the central circle (Bratislava) and on feeder roads in the outskirts. The total accident rate increased to 1996, both throughout the whole country and on urban territory (figure 3), then began to gradually decrease, in spite of the fact that the number of vehicles increased steadily, along with the traffic intensity on the road network. However, all other negative outcomes of road transport continue to grow, especially in urban areas (noise, vibration, emissions, dustiness, occupation of space, visual pollution, criminality...). Due to financial insufficiency, regular traffic surveillances are is limited, and in Bratislava were not operated from 2001. Resulting from this is a lack of access to information and low quality resource materials for decision-making bodies and for the public.

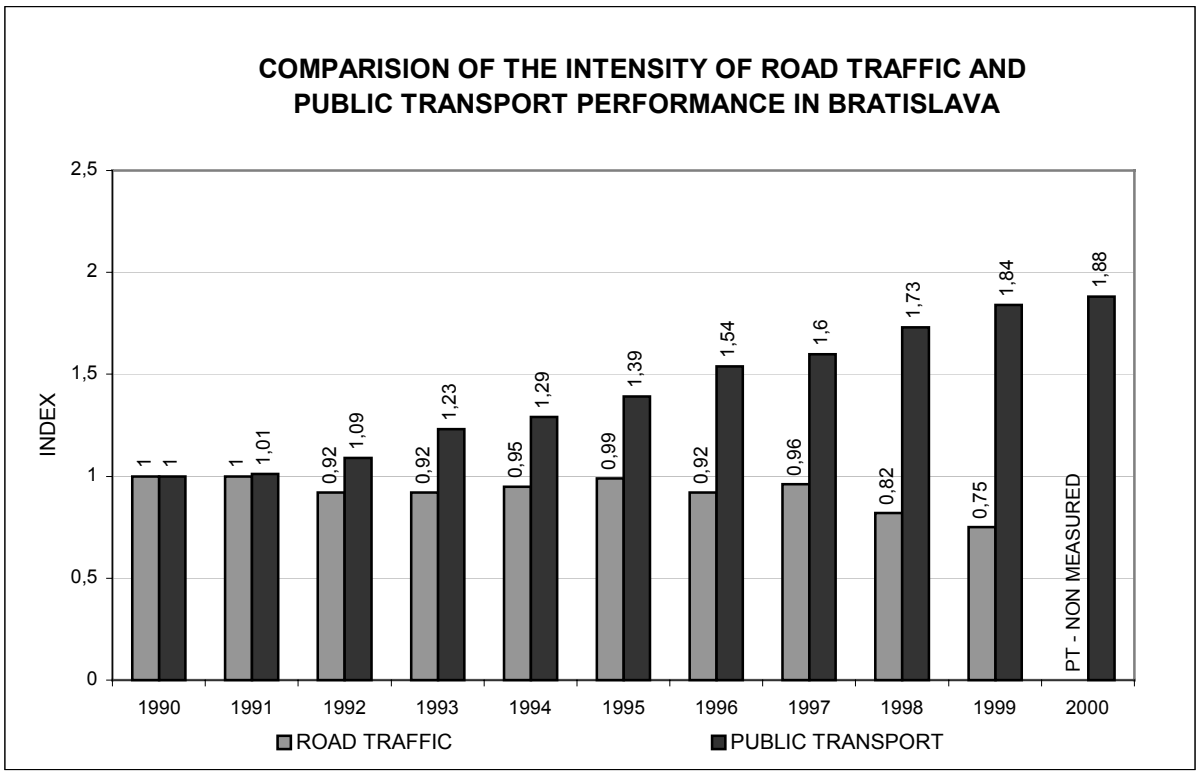



Figure 2

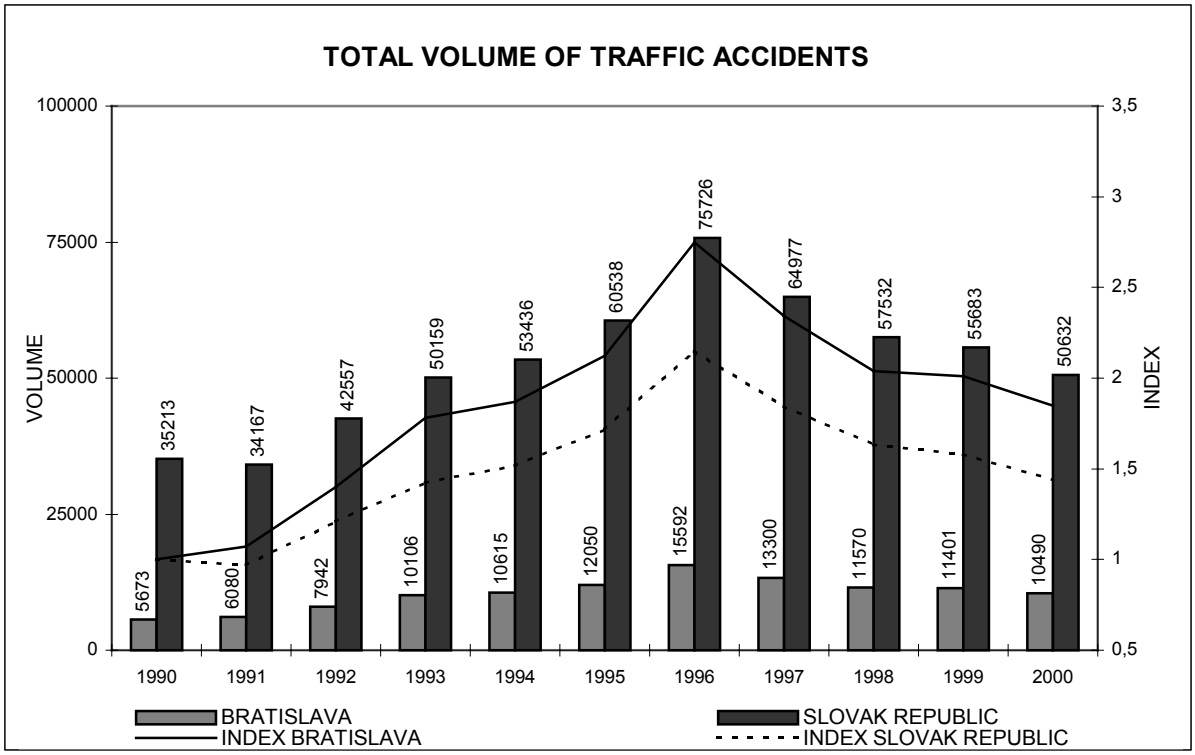



Figure 3

## 5. PERCEPTION OF ROADS, HOW IT HAS CHANGED, AND ITS RESULTS

In general, the contemporary state of the road infrastructure can be characterized, from a society-wide aspect, from road users point of view and from that of demands on development of regions, towns and municipalities, as under-dimensioned. Therefore, investments in the road infrastructure are generally perceived very positively. Partially, development is seen negatively in conflict with individual interests, but this is a natural event within the context of the line project.
Generally it can be stated that, the reasons for the emergence of the negative effects of transportation are known. The approaches to their elimination are also known, but there is a lack of financing for their implementation in normal practice. Exceptions to this are only newly-constructed motorways and roads, part of the design preparation of which was the consideration of the influence on the environment of the future operation of the new road route (EIA), and the prescribed physical protection of the surroundings (e.g. against noise). These projected anti-noise measures must then always be implemented.
The increase in road loading and their negative impacts on the surroundings (especially in urban environments) has led self-administration bodies in municipalities and towns to introducing a variety of measures for limiting the negative impacts of traffic on the environment, such as:

- Limiting the speed of traffic by restrain measures on roads crossing through built-up areas
- Establishing zones with limited speed (30 km/h)
- Regulation and control of parking in centres and protected areas
- Regulation of the freight through transport to the built-up areas and special zones
- Trucks driving restriction on weekends.

In many cases the initiators of the preparation and implementation of these measures are petition actions by citizens who ever more are becoming aware of the price of a healthy and quality environment.
As a positive influence and a new look on roads and their function in their environment may be seen the emphasis and tenacity in implementing the EIA process in the preparation of new infrastructure projects. Motorways and roads are no longer perceived as a means for getting from the start to the goal of the transportation, but if they are well proposed as an element which also fulfils the function of providing services of a higher standard, the function of complementing an environment and increasing its quality and usefulness quotient, the function of protection of the environment.
The participation of the public, which is in the area of road resolutions ever more active and as part of the EIA law has relatively great power, gives evidence of raising:

- the conscious and expertise of the population
- the relation to its own environment
- the feeling of responsibility towards society.

The public is not unequivocally against large traffic constructions, to which belong motorways and roads, but demands consistent protection of the environment. In this sense, it also creates pressure on the relevant projecting elements and on decision-making bodies.
The problem up to now is the fact that protection measures are implemented only for new projects, whereas for existing roads the situation is often much worse than can be expected in newly-constructed projects. At present, there are not financial resources for the resolution of protection of the environment as regards existing roads except for partial restrictions of access or speed. These measures are more related to lessening the disadvantages, such as reducing noise, exhaust, the barrier effect and other negative effects.

The favourable influence of the road network on the social sphere and economic activity has an influence on the amount of foreign investment and the level of unemployment in a given area. The largest foreign investments are allocated, and the lowest level of unemployment achieved in the area of the Bratislava region in comparison with all other regions of the country. In the Bratislava region there have been for a long time however the most congested roads. There is also here the densest net of motorways and expressways, and the level of unemployment is markedly lower than in the rest of Slovakia. According to the statements of many foreign investors, transportation access in Slovakia stops at the end of the finished section of the motorway network.
These facts illustrate the very positive impact of roads on the Bratislava region's socio-economic development.

## 6. IMPLEMENTATION OF THE "ROADS AND SUSTAINABLE DEVELOPMENT" POLICY

The basic principle is the development of roads from the view of sustainable development which is comprised in the "National Strategy of the Sustainable Development of the SR" approved by the Resolution of Slovak Government 978/2001, developing from the "Rules of Transport Policy of SR" approved by the Government (RG 21/2000). The leitmotif for the sustainable development of road transport is to mitigate the negative impacts of transport on the environment. The strategical objective is "the improvement of technical and transport infrastructures" (objective 22) by the specific implementation of the completion of the TINA network (motorways, expressways) by the sustainable development of roads to improve the accessibility of regions and peripheral areas of the country.

This trend is gradually integrated in legislative instruments for planning and construction of road network. The primary law in this area is the Act No.127/94 Coll. (EIA), specifying the categories of structures and activities that should be assessed from the view of their environmental impacts. The guarantor of this area is the Ministry of Environment of the SR. In the previous period of 5 to 10 years a lot of work was done, particularly in the legislative area in the approximation of Slovak law with law of the European Union (Act on Waters, Act on Atmosphere, Act on Wastes...).
It can be stated that all major civil works are strictly assessed from the view of impacts of the future structure on the environment, with a special focus on the sustainable development with the environmental protection. This is particularly perceivable after the year 1994 (the efficiency of the Act on EIA).
The main participants are the state administration and self-governing authorities in the area of environment (they have very important competence to issue decisions on the location of the structure in the territory, whereby all problems related to construction and operation of given structure have to be already solved in the design).

The method of the multi-criteria environmental impact assessment is very seriously used particularly in cases of construction of all sections of the motorway network in Slovakia. In spite of the detailed EIA and the selection of an optimal resulting route from several studied alternatives of the routing of future motorway sections, in many cases the self-governing authorities of municipalities and cities, or those of citizens´ and petitionary associations, were against the planned construction of motorway in given environment. In most cases a compromise was very difficult to achieve and the outcome of the solution of the route of future motorway had usually put technical and economical requirements much higher than the initial project. This fact is one of the most serious moments of the prolongation of construction of the motorway network, although construction of motorway is generally considered as the matter of public interest and public utility, as the prerequisite for the future sustainable development of economy of given region.

Transport, and particularly road transport, constitutes the dynamic instrument of the society which also affects, to a considerable extent, further development toward the information society. **The quality of transport from the view of transport services provided in the territory does not express only the quality of the mobility, but also the ability of an individual to profit from the transport system**. From this view it is necessary to solve roads not only as a structural problem but also perceive the road and the road system as an integral part of a comprehensive transport system. Information as a part of transport service, which generates added value to road transport, plays very important role in this context. Therefore in the future period it is necessary to solve roads from the view of needs of users through transport applications of telematics such as:

- traffic and travel information;
- multimodal transport planning;
- transport network management;
- transport logistics of goods vehicle fleets;
- in-vehicle telematics.

The purpose of the transport policy should be the conception of coordinated management of transport processes in the territory which would take full account of the supply of all transport systems and territorial transport demand. In this context it is necessary to establish effective links in transport services among:

- operators of local public transport;
- local and regional transport authorities;
- operators of long-distance traffic; and
- providers of traffic information services.

For this purpose, in 2001 the "Intelligent Transport Systems" (ITS) Association was established in Slovakia the purpose of which is to develop the communicative environment between the public and private sectors, establish rules on the national architecture of intelligent transport systems and be helpful in solving strategical issues of the transport policy, the sustainable development and the overall quality of life.

## 7. FORMATION OF GROUPS FOR ROAD DESIGN

Until 1990, in the area of road planning and design, the strict centralisation prevailed. The design was ensured by large institutes of design (with 600 and more employees) that were specialized depending on the type of design activity. These institutes were built in the comprehensive way and ensured the elaboration of designs at all stages and levels throughout the country. After 1990 the design activity as well as the investment assurance of the individual constructions were decentralised.

At present the design in Slovakia is fully based on competent authorized civil engineers and architects who, having passed the authorization examination in compliance with the Act 236/2000 Coll., hold the authorization for the design of civil works in the respective specialization. The design of roads as works of public interest is usually prepared by the way of public procurement which is also exactly stipulated by the respective law. The process of the preparation of road construction always consists of several stages, from the research studies, through technical and economical studies, the environmental impact assessment (EIA) and the land planning documentation, to the construction and execution documentation. The relevant laws and decrees applicable for govern all levels of documentation given area. We must also state that the process of the authorization of civil engineers and architects generates professionals with required experiences and education for the assurance of the individual parts of documentation.

The process of the formation of a working group is based on requirements of given types of documentation and its specialization. In the process of public procurement in compliance with the Act on Public Procurement the individual applicants present their offers for the preparation of documentation, in which they have to prove their competence to fully meet conditions of the organiser of tender for the solid and timely elaboration of the required documentation.

At present several institutes of design operate in Slovakia, which however lack the size and the dominance they had before the year 1990, including a significant number of small design offices with not more than 5 to 10 employees. For needs of each design working teams with the representation of all specialisations required in the solution of given design are constituted. In reality there are no problems with the integration of new specialised professions into the process of design, which particularly occur in the primary preparatory stages of works, such as landscape and nature conservation, landscaping, sociology (the influence of construction on the human environment, economy in both macro and micro perspectives).

More than 4000 authorized civil engineers, who fully cover needs of the design of all types of constructions at required level and time, are at present registered in the professional association of the Slovak Chamber of Civil Engineers.

The area of higher and postgraduate education, where new disciplines, going beyond the framework of existing scientific disciplines (environmental engineering is typical for the demonstration of the multi-disciplinary approach of the solution), is also adapted to the trend of the constitution of high-qualified project teams.