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*Roads and quality of life***

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## Summary

The report presents and justifies the main priorities in the Hungarian road transport policy, network development and design, including (i) promoting the integration into the European Union, (ii) improving the conditions for co-operation with the adjacent countries and regions, (iii) promoting a more balanced regional/subregional growth, (iv) ensuring efficient, market-conforming transport operation and the intermodality, and (v) improving the quality of human life and promoting the protection of the environment. Concerning the development of road network, it presents Government decrees passed in recent years as well as methods applied or under development to improve preparations for developments. It describes the levels of design and decision-making on development as well as the current related regulation. It gives a review of ongoing researches aimed at exploring the socio-economic impacts of road development. In this context, the main findings of a questionnaire survey conducted among potential road users are especially interesting.

The report discusses how the socio-economic function of roads is rated and how opinions about such rating are changed, in particular with regard to the increased importance of environmental aspects and dialogue with the population as experienced in recent years.

Finally, the report deals with the enlargement and changed structure of expert groups preparing road designs. Persons representing more and more professions are involved in the work of these groups because only this way can their activity be effective. The curriculum of the higher-grade technical education has also undergone a substantial change. Besides obtaining knowledge, increasing emphasis is placed on the development of abilities and skills to help graduated civil engineers to find a job and accommodate flexibly to the changing environment.

## **1. Priorities in road construction**

In the 90s after transition into a market-oriented economy, the Hungarian economy faced new challenges. The development of a market economy placed those regions at a considerable advantage which had a more advanced transport infrastructure, in particular high-speed roads. Despite a temporarily declining mobility due to the difficulties of economic transition, the transit traffic running through the country has continued to grow with the road transport mode gaining ground as compared to rail transport.

Experience shows that areas accessible through motorways or highways have been appreciated economically and their capacity to attract capital has increased. Therefore, in the development of a high-speed road network it has become a much more important target than earlier to improve accessibility to less developed regions and connect them to the country's economic processes. Another important target is establish a connection between the national road network and the high-speed road network of the European Union (TERN) partly to stimulate the economy more effectively and partly to ensure the smooth performance of the international transit traffic. High-speed roads also have an influence on the structure of settlement network, therefore in the planning of their development higher priority has been given to settlement development targets (encouraging the creation of jobs, establishing residential areas, etc.).

Development of a high-speed road network involving a reallocation of traffic may lead to a considerable reduction in traffic on trunk roads which currently carry a heavy international transit traffic volume. The low service level of throughways on these roads has already caused serious problems. There are frequent congestion situations, accidents and high environmental loads, therefore improving the safety and quality of life of those living along throughways is also an important development target. It is an especially urgent task is to relieve pressure on Budapest, the capital with a population of 1.8 million and to construct additional sections of the M0 ring road. To improve accessibility, it is required to make a change in the existing road network structure which is unduly concentrated on Budapest and to supplement it with transversal and circular elements.

In the context of the planned accession of Hungary to the European Union, the role of regions is becoming more important also in regional and road network developments. Seven planning-statistical regions have been designated in the country (NUTS 2). The formulation of an overall road network development concept for particular regions is under way.

Regional road networks are being planned in close co-operation with the institutions responsible for development of particular regions, identifying regional and local needs and matching them to national concepts.

A key aspect is the protection of the environment. Therefore, during the construction of new roads attempts are made to use the smallest possible agricultural and natural land areas, protect habitats and avoid disturbing the natural balance which are also required by relevant laws.

The better utilisation of the existing other transport facilities (railway, river navigation) may also improve the level of transport services. Therefore, intermodality, i.e. the more uniform allocation of the expected traffic among modes is an important transport development criterion also in Hungary.

In conclusion, the highest priorities in the Hungarian road transport policy, network development and planning are as follows:

- promoting the integration into the EU;
- improving the conditions for co-operation with the adjacent countries and regions;
- promoting a more balanced regional/subregional development;
- ensuring efficient, market-conforming transport operation and intermodality;
- improving the quality of human life and the protection of the environment.

## **2. Planning and evaluation methods**

The formulation of a development concept for national roads and the preparation, planning and implementation of particular projects are based on the relevant laws.

The **1988 Act I** on Road Transport as amended several times provides that

- the road network development shall be based on transport demand, also taking into consideration defence, land protection, environmental and landscape protection, health protection, tourism and other non-transport interests and goals (Section 11 (2)), and
- *a separate plan shall be drawn up for the national road network development*. The plan for national road development will be *approved by the Government* on the basis of a submission by the Minister of Transport. Plans drawn up for road network development shall be *reviewed every five years* and, if necessary, amended appropriately. (Sections R. 5(1) and (4))

The concept for the **Hungarian transport policy** approved **in 1996** by Parliament and now being reviewed states that the needs for resources for specific projects shall be compared at the level of a continuously reviewed, *rolling master plan for transport* with respect to feasibility at a particular time and they shall be ranked.

Government Decree 2119/1997 (V. 14.) decided first on the high-speed road network development programme. It was followed by Government Decree 2117/1999 (V. 26.) on the Implementation of a Ten-year Development Programme for the High-speed Road Network, Government Decree 2037/2000 (II. 29.) on the Amendment of the Previous Government Decree and Government Decree 2224/2001 (IX. 1.) on the Status of Implementing the High-speed Road Network Development Programme and Additional Related Government Tasks. The latter government decree has also applied to other roads of network importance in addition to high-speed roads. Finally, Government Decree 2303/2001 (X. 19.) has specifically provided for the location and timetable of high-speed and other important road developments *up to 2015* (e.g. sections bypassing major settlements).

Submissions underlying government decrees have been made or caused to be made by the Road Administration for the Ministry of Transport existing from time to time. To compile programmes, simplified cost-benefit analyses are also used sometimes, but for the time being less emphasis is placed on economic efficiency criteria besides regional development and policy requirements. Neither do government decrees deal with the provision of resources required for the implementation of the programme which allow long-term planning.

The year **2000** saw the start of compiling a National Development Plan (NDP) which serves the basis for the possible use of EU supports. Currently, development projects, including road upgrading and construction works, proposed to be implemented under the NDP between 2004 and 2006 are being identified and prepared.

### **3. Investigations supporting road development decisions**

Cost-benefit analyses are used to appraise the usefulness of road construction projects, however, their performance is not general and compulsory, unless required by the employer or the financial institution. Pursuant to Government Decree 1057/2001 (VI. 21.), the Hungarian Public Administration Institute is co-ordinating the preparation of a regulation which determines what methodology must be used by budgetary bodies for preparation of their economic decisions and in what cases must a cost-benefit analysis be used.

### **4. Design and decision-making levels**

It follows from the foregoing that the long-term development programme for national roads is the result of a Government-level decision based on a proposal of the Minister of Transport. Making such a decision is followed by the detailed technical design and preparation of development projects included in the programme.

The approval and clearance of designs are regulated by Ministerial Decree 15/2000 (XI. 16.) KöViM on the Authorisation to Construct, Open to Traffic and Remove Roads.

The annual list of rehabilitation projects (including the location and type of interventions foreseen) is drawn up by the regionally competent county State Road Management Public Service Companies. This list is approved by the head of Road Department in the Ministry of Transport, taking into consideration the preliminary comments of the State Road Engineering and Information Public Service Company. It is followed by technical design subject to the approval of the competent county State Road Management Public Service Company as employer.

The design of the local roads and the related decision-making and financing are the responsibility of the local municipalities. To finance groups of projects allowing certain primary development objectives to be realised, the Government provides some support which can be obtained through a tender procedure.

## **5. The impacts of road development**

Road development has extensive direct and indirect impacts on the socio-economic activity of people. The identification and exact or at least stochastic description of these impacts are a complicated task involving many uncertainties. Similarly to international researches, the findings of Hungarian researches carried out recently have pointed out some fundamental relationships which can be summed up briefly as follows:

- The method developed in the mid-90s by the Institute of Transport Science (KTI Rt.) to monitor the impacts of road network developments on the urbanisation process is continuously improved. Primarily, the socio-economic indicators of the region affected by road network development (e.g. change in real estate prices, number of new jobs, increase in storage areas, number of enterprises and change in their gross sales revenue) are monitored regularly.
- For the moment, the economy stimulating and traffic inducing impact of upgrading the road network is measured empirically so that so-called generated traffic values are added to the anticipated traffic in the region served by a new, high quality road as a result of a natural growth in traffic.

Regarding the expectations of people living near to the alignment of the proposed high-speed roads, KTI Rt. has recently conducted a questionnaire survey. 85% of the mayors of settlements in question expect a favourable impact, whereas nearly 64% do not expect any unfavourable impact at all. The most important advantages mentioned by the mayors of settlement include the stimulation of economic activity, a relief of pressure on settlement roads and the creation of new jobs. Among population, the advantages in order of importance are as follows: quicker accessibility (44-57%), economic stimulation (21-31%) and relief of pressure on settlement roads (10%). The most frequently mentioned unfavourable impacts include: traffic noise and vibration (73-78%), delay in the internal traffic of settlements (9-12%) and air pollution (9-10%).

During the preliminary social impact assessment of tolling the M1 Motorway, the inhabitants of settlements, where a parallel road exists, have mentioned the following unfavourable impacts (in a decreasing order of frequency of mentions): increased traffic, increased noise, increased air pollution and increased risk of accidents. Among the 33 settlements inquired, 4 have expected mainly unfavourable impacts. Proposals for mitigating damages have included the construction of noise screening walls, the construction of gyratory traffic junctions, the diversion of heavy goods traffic, the construction of railway bridge crossings, the construction of bus bays and the compensation for damages caused by the deterioration of buildings.

## **6. Rating of roads**

In recent years, the importance of social and environmental aspects in the rating of roads has gradually increased. Groups protesting against certain development projects have also emerged. The transport sector has responded to this change in several ways:

- the protection of the environment has become an important element of the transport policy concept of the Government,
- environmental aspects have gained importance in research programmes and design guidelines,
- in the costs of specific road projects, there is an increasing share of costs related to measures aimed at reducing detrimental environmental impacts, and
- there is a change in the treatment of public consultation and non-governmental initiatives with comments being taken into consideration seriously, if possible, already at the project design phase.

## **7. Expert groups undertaking road project studies**

Meeting changing social needs requires civil engineers with a qualification different from that needed earlier: In addition to the traditional design, development and implementation tasks, increasingly important functions include:

- project organisation,
- business-economic activity,
- management of facilities,
- maintenance and operation,
- collection, processing and transmission of information,
- providing support to public administration,
- representation of interest groups in various fields of expertise, and
- treatment of relationship with the population, settlements and the environment.

In addition to obtaining knowledge, the higher-grade technical education increasingly focuses on the development of skills. There is much debate about the importance of knowledge in relation to skills and whether skills can be taught and developed at all. Earlier, there was traditionally only "highway", "bridge" and "railway" engineering training in Hungary. It has been recognised, however, that if engineer undergraduates are prepared only for such a narrow field of expertise, they will have little opportunity in choosing their first job and the chance of subsequent change will also be limited. As opposed to it, if they receive a more general training, then they will be able to accommodate to changes more easily but will need additional training in a special area. Workplaces usually offer such an opportunity because in today's higher-grade education it is difficult to get insides into a special area to a depth which workplaces would require.

Groups designing road projects in Hungary consist of specialists working in increasingly diverse areas. All new road designs include some planting work for which a horticultural engineer is engaged. Environmental impacts must also be studied in the framework of an environmental impact assessment through the involvement of environmental specialists, biologists, zoologists and physicians. In case of roads running in urban areas or close to them, the contribution of town planners and sociologists is also frequent.

More and more higher-grade educational institutions have a curriculum covering subjects through which civil engineers can gain a greater understanding of related areas of expertise on a usually two-year postgraduate training course. As yet, it is more typical that the designs of road projects are the result of co-operation between specialists having different professions.