

# **CREATING CONDITIONS FOR IMPROVING THE LEVEL OF ROAD TRAFFIC SAFETY IN THE REPUBLIC OF SERBIA**

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## **ABSTRACT**

Beside positive effects, such as connecting residence, work and recreation, reduction of travel time and other, traffic is associated with negative features which reflect first of all in fatalities and casualties, environment endangering, property damage, illegal behaviour, disturbing law and order, time losses in traffic, social environment pollution, etc.

During development and increase of motorization degree, societies face the problem of traffic risk, i.e. traffic accidents with a lot of casualties and significant property damage. Traffic accidents have reached such dimensions that in most of the countries they represent the most frequent type of violent injuries of population.

Therefore, establishment of a system for traffic safety management and formation of firm preventive social mechanism, based on a larger number of participants, are the foundation of successful increase of the level of traffic safety on state roads.

Public Enterprise "Roads of Serbia", formed at the beginning of 2006 when the Law on Public Roads came into effect, is defined as one of the carriers of the establishment of traffic safety system in the triangle known as driver-road-vehicle. Pursuant to legal competences, responsibilities of the Enterprise are defined in view of management, maintenance, construction and exploitation of state roads in the Republic of Serbia.

With the harmonization of European trends in traffic safety and national legislation, namely, with the adoption of the new Law on Public Roads and draft Law on Road Traffic Safety, special attention has been paid to the function of the road manager, PE "Roads of Serbia", and the creation of conditions for the improvement of road traffic safety.

The paper shows the functional organization of the PE "Roads of Serbia" and basic activities directed towards the improvement of road traffic safety on state roads.

**KEY WORDS: ROAD TRAFFIC SAFETY, PREVENTION OF TRAFFIC ACCIDENTS**

## **1. INTRODUCTION**

Public Enterprise "Roads of Serbia" is established pursuant to the Law on Public Roads that took effect on January 1st 2006. Public Enterprise „Roads of Serbia“ performs managing state roads that consist of:

- using state road (organizing and controlling fee for using state road – toll, fulfilling public authorizations etc...)
- protecting state road
- performing investment functions in improvement and reconstructing state road
- organizing and performing professional works on improvement, reconstruction, maintenance and protection of public roads.
- concession of works in maintenance public roads
- organizing professional supervising over improving, reconstructing, maintaining and protecting public roads
- planning of improvement, reconstruction, maintenance and protection of public roads
- identifying and evidencing public roads and their traffic and technical data characteristics
- traffic managing and vehicles organizing and counting on state road

Road network of the Republic of Serbia in the total length of 40,845 km consists of 5,525 km of state roads of I category, 11,540 km of state roads of II category and 23,780 km of local roads. On the network there are 498 km of toll motorways and 136 km of toll semi-motorways.

During the production of draft Strategy and Policy for the Development of Transport Sector in Serbia [3] and the realization of Traffic Safety Subproject within the Twinning Agreement with Sweden and Transport Rehabilitation Project (WB), and pursuant to the Law on Public Roads [1] and draft Law on Road Traffic Safety [2], the PE "Roads of Serbia" is organizationally prepared for the realization of programs and activities for the purpose of improving the level of road traffic safety.

In accordance with positive experiences from similar organizations, a separate functional whole, the Sector for Quality, Traffic Safety and Environment Protection, is established. Within the Sector, the Department for Traffic Safety started functioning with the aim to enable monitoring and management of traffic safety on state roads of I and II category in accordance with contemporary traffic safety trends.

## **2. BASIC ACTIVITIES OF THE PE "ROADS OF SERBIA" IN THE AREA OF TRAFFIC SAFETY**

According to the ICB Project "Strategy and Policy for the Development of Transport Sector in Serbia" (draft document), within item 14.5.5 „Investigation of Accidents and Incidents“, it is stated that ...“ majority of serious traffic accidents are investigated, however, with several striking exceptions especially in aviation, only a small number of investigations has been performed with the purpose of improving safety. Many accidents have been investigated to identify guilt or responsibility and, although recommendations in view of safety are often given, they usually miss the identification of some of the fundamental causes of what had gone wrong“.

Having in mind the abovementioned, and in accordance with current trends in developed countries with lower level of risk for participants in traffic, as well as in the manner of positive legislation, main action areas have been determined for the PE "Roads of Serbia" for the purpose of increasing traffic safety on state roads.

## 2.1. RSA (Road Safety Audit)

For the purpose of preventing the occurrence and minimizing the number of dangerous locations on the road network, introduction of RSA (Road Safety Audit) has been anticipated as an active measure for roads in all design stages, which is in accordance with Art. 354 of the draft Law on Road Traffic Safety. The main idea of RSA is the usage of independent and licensed experts who will check the fulfillment of requirements for safe traffic.

The main objective of RSA is the prevention of the appearance of dangerous locations on roads based on constant supervision of a design (project) before, during and after the road construction. This way, many problems can be removed before they appear in practice in the manner of traffic accidents. The stated activity is directed towards the analysis of projects and finding the most frequent deficiencies from the aspect of traffic safety, such as:

- missing or short safety barriers,
- insufficiently clear traffic signalization for the driver,
- unsafe pedestrian crossings,
- potentially dangerous access roads (junctions),
- speed limits,
- unsafe surroundings,
- inadequate road lighting, etc.

In the following period, the Department for Traffic Safety will initiate the production of RSA Guidelines (Instructions) and organize trainings, i.e. transfer of knowledge to auditors.

## 2.2. Black Spot Management

Pursuant to the draft Law on Road Traffic Safety (Art. 361. and 358.), Black Spot identification and management are foreseen (analysis with suggested measures for elimination of Black Spots).

Within the Department for Traffic Safety, special attention is paid to the establishment of partnership with the Department of Traffic Police from the Ministry of Interior Affairs and the analysis of police reports on traffic accidents. It is planned to define criteria which determine a dangerous location (Black Spot), road section and zone, which will serve as the basis for activities and countermeasures.

Basic reactive actions are directed towards the following:

- Determination of exact location of a traffic accident (ID section as well as GPS positioning),
- Definition of exact time when a traffic accident occurred (determination of weather conditions as well),
- Determination of type (head-on collision, side collision, head-to- collision, ...) and severity of a traffic accident (consequences),

- Identification of vehicles which participated in an accident,
- Determination of road condition at the time of an accident, the surroundings and possible improvements.

This way, identification and management of dangerous locations will be possible. The suggestion of priority interventions will also be defined, as well as the follow-up of the effects of the undertaken interventions.

The abovementioned activities have special significance in providing the basis for performing In Depth Analyses of traffic accidents with fatalities.

### 2.3. In Depth Studies of Traffic Accidents

As the draft Law on Road Traffic Safety (Art. 361) foresees the forming of an independent expert team which, in case of traffic accidents with fatalities, will make the site visit within 5 days after an accident, see the circumstances and traces of accident occurrence as well as suggest measures, the PE "Roads of Serbia" is preparing itself for the realization of these competencies.

In this manner, quality collection of data on traffic accidents with fatalities would be enabled, with special focus on the identification and elimination of potential road factor for the occurrence of traffic accidents.

In-Depth Studies of Fatal Accidents will include, beside basic elements of mini expert investigation, a part which dominantly refers to the road as one of the factors contributing to accident occurrence and a part referring to the suggestion of corrective measures directed towards the road and graded according to the necessity for implementation (priorities going from the most important – mandatory measures towards the recommended ones).

Activities for the purpose of establishing In-Depth Studies are directed towards the organization of expert gatherings-seminars and regional formation of teams for In-Depth Studies of Fatal Accidents.

### 2.4. Monitoring of Road Traffic Signalization with Safety Function

One of extremely important segments of traffic on the network of state roads is adequate design, placement and maintenance of traffic signalization. Therefore, forming a team for keeping records on traffic signalization (supplement, replacement and removal) is foreseen pursuant to Articles 367. and 368. of the draft Law on Road Traffic Safety.

Beside monitoring permanent signalization, special attention will be paid to checking temporary signalization during road works. The aforementioned also includes the monitoring and control of material quality, applied retroreflection on the equipment, etc.

The main objective of activities of this part of the Department for Traffic Safety is making technical documentation (cadastre) on permanent traffic signalization for state roads of I and II category in cooperation with other sectors in the PE "Roads of Serbia"; "Road Work Zone Guidelines" are being finalized in coordination with the Ministry of Capital Investment; organization of expert gatherings-seminars, informing the public on most significant road works, etc.

## 2.5. New Technologies in the Function of Safer Traffic

For the purpose of enabling the management (increasing the flow and traffic safety on roads), special attention has been paid to telematics. Basically, telematics includes the usage of variable traffic signs, introduction of new toll system, introduction of emergency phones, automated railway crossings, connection with Road Weather Information System (RWIS), placement of devices for reading vehicle speeds, placement of optical cables and other systems for remote traffic management.

Special attention is paid to the systems for quality information to road users about traffic situation, speed control and adequate and timely information.

## 2.6. Other Activities Directed towards Road Users

Beside the road as the primary focus of the activities of the PE "Roads of Serbia", the attention of the Department for Traffic Safety will be directed towards other factors of traffic safety system, namely, towards the part referring to drivers and vehicles, through campaigns and activities adjusted to each of the abovementioned segments.

The main objective of the activities is to increase the level of awareness (traffic culture) of all participants in traffic through the realization of campaigns directed towards speed, alcohol, safety belts and helmets and so on, as well as to organize and give support to professional gatherings-seminars dealing with the stated topics.

## 2.7. Database on Traffic Accidents as the Basis for the Work on Improving of Traffic Safety

One of the preconditions for good-quality analysis and improvement of road traffic safety is connected with the establishment of a functional database on traffic accidents. The main reasons for forming a unique database on traffic accidents, regardless of the fact where it is physically situated, appear in the need for joining larger number of data which contain spatial and time components of traffic accidents, as well as for linking the data referring to the condition of the driver-vehicle-road system, data from the justice, insurance companies, health institutions, etc.

On the previous grounds, an established integral database on traffic accidents, with different levels and access rights, would make the basis for the operations of the following user categories: Ministry of Interior Affairs, road managers, health institutions, insurance companies, statistical bureaus, educational institutions, justice, media, professional organizations and other legal entities or natural persons which with their work contribute to the reduction of the number and consequences of traffic accidents.

## 3. CONCLUSION

Respecting the significance and need for safe traffic on state roads of the Republic of Serbia, and pursuant to the authorities of the Law on Public Roads and draft Law on Road Traffic Safety, the PE "Roads of Serbia" is institutionally (organizationally) preparing itself for the realization of new competences, i.e. for the realization of programs and activities with the aim of reducing the overall number and consequences of road traffic accidents.

Concrete contribution is expected after adopting new Law on Road Traffic Safety (draft is in final faze) and especially in domain of RSA, Black Spot identification and In-Depth Studies of fatal accidents, improvement of traffic signalization and initiation of forming a joint database on traffic accidents.

Actual activities of the PE "Roads of Serbia" for the purpose of reducing the number and consequences of traffic accidents on state roads go through a new, systemized approach to the problem of casualties in traffic, namely, on active and reactive actions in eliminating or minimizing negative consequences of traffic accidents (creation of forgiving roads).

The adopted Policy of Road Traffic Safety in the PE "Roads of Serbia", together with other documents in the procedure for adoption, i.e. Strategy for Improving Road Traffic Safety in the PE "Roads of Serbia" and Five Year Plan for Improving Road Traffic Safety in the PE "Roads of Serbia", along with the first time defined funds allocated for the increase of road traffic safety within the "Business Program for 2007", make well conceived and systematized activity of the road manager, which, in co-action with other factors of traffic safety system, can contribute to the overall reduction of the number and consequences of traffic accidents on roads.

#### **LITERATURE:**

[1] Law on Public Roads

[2] draft Law on Road Traffic Safety

[3] ICB Project - Strategy and Policy for the Development of Transport Sector in Serbia (draft) - AF Consult, TCA - EAR - May, 2006