Best practices in implementation of Road Infrastructure Safety Management on TEM network

National experiences in road infrastructure safety management:

BOSNIA AND HERZEGOVINA

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1. BASIC INFORMATION (1)

- Population - 3,9 mil.
- Area - 51,197 ths. sq km
- Length of road network – 22,900 km
- Motorways/highways - 107 km
- Main/state roads - 3,970 km
- Registered motor vehicles - 1,05 mil.
Bosnia and Herzegovina has a bicameral legislature and a three-member Presidency composed of a member of each major ethnic group. However, the central government's power is highly limited, as the country is largely decentralized and comprises two autonomous entities: the Federation of Bosnia and Herzegovina and Republika Srpska, with a third region, the Brčko District, governed under local government. The Federation of Bosnia and Herzegovina is itself complex and consists of 10 federal units – cantons.

**SMALL COUNTRY**
- 3 presidents
- 2 entities + district
- 4 levels of government
- 14 governments
- 29 per cent of the unemployed
- more political parties in governments
- corruption
2. ROAD ACCIDENTS INDICATORS

<table>
<thead>
<tr>
<th>traffic accidents indicators</th>
<th>2004.</th>
<th>2014.</th>
<th>changes %</th>
</tr>
</thead>
<tbody>
<tr>
<td>killed persons</td>
<td>417</td>
<td>279</td>
<td>33,1</td>
</tr>
<tr>
<td>seriously injured persons</td>
<td>2241</td>
<td>1530</td>
<td>31,7</td>
</tr>
<tr>
<td>lightly injured persons</td>
<td>7147</td>
<td>6348</td>
<td>11,2</td>
</tr>
<tr>
<td>registered motor vehicles</td>
<td>678.500</td>
<td>1.050.000</td>
<td>35,4</td>
</tr>
<tr>
<td>length of road network</td>
<td>22.750</td>
<td>22.950 (km)</td>
<td>0.9</td>
</tr>
</tbody>
</table>

The increase in the number of road vehicles in Bosnia and Herzegovina, during the last 10 years, has not been adequately accompanied by the construction of road infrastructure.
- who is responsible for traffic safety?

NATIONAL  LEVEL

Ministry of Communications and Transport is responsible for:

- drafting the legislation that regulates the field of road safety *(Law on basic of traffic safety on roads in BiH , 2006.)*

- drafting the national Road Safety Strategy *(strategy adopted by the Parliamentary Assembly of BiH)*

- Action Plan for the implementation of the strategy *(adopted by the Council of Minister and government entities)*

- Road Safety Council *(under construction since 2006.)*

#  Missing political interest in national structures

Road safety improvement - is not priority of political parties, government, parliament, president and most decision makers
3. MANAGEMENT OF ROAD INFRASTRUCTURE (2)

ENTITY LEVEL = management of highways and main/state roads
- entity laws on roads (adopted by the Parliament)
- Ministry of Transport and Communications (drafting the legislation)

FEDERATION OF BOSNIA AND HERZEGOVINA

- Baseline Security Strategy of Road Transport (2008-2013), and
- Action Plan for implementation of the document" Baseline Security Strategy of Road Transport (2008-2013)" (The document was supported by the police director, Federal Minister of Interior, as well as cantonal ministers of Interior)
- The expert team has had significant activities in the implementation of strategies and specific activities aimed at improving traffic safety in the Federation...

- 2013. lack of political support
- 2014. the government has adopted the information on the need for the formation of Road Traffic Safety Agency

Horizontal coordination among ministries dealing with road safety
Vertical coordination from national to regional and local level

4 C in BiH
- Cooperation
- Coordination
- Communication
- Corruption
3. MANAGEMENT OF ROAD INFRASTRUCTURE (3)

ENTITY LEVEL - REPUBLIKA SPRSKA

- 2 levels of government: entity and municipality

Public Company „Republic of Srpska Motorways“:

- management of highways

Public company roads of Republika Srpska - management of main and regional roads

- Law of traffic safety on roads in the Republic of Srpska (2011) - (This law regulates the management of traffic safety, the establishment, operation and jurisdiction of the traffic safety of the Republic of Srpska and the Agency for Traffic Safety of the Republic of Srpska)
- Road Traffic Safety Agency (2013),
- Road safety coordination body
- Road safety strategy (2013-2022)
- Road safety action plan (2014 - 2018)

ROAD SAFETY GETS THE POLITICAL SUPPORT
ROAD SAFETY GETS NEW DOMICILE AT THE MINISTRY OF TRANSPORT
4. NATIONAL LEGAL FRAMEWORK FOR IMPLEMENTATION OF RSA AND RSI PROCEDURES


- SEETO strategy, especially the activities of individual experts in the FBiH in the project SEETO had on the improvement of laws and regulations, especially the part related to the introduction of provisions on the system of checks and audits.

- Within the last changes (2010.), the law of traffic safety defined terms „Road Safety Inspection“(RSI) and „Road Safety Audit“ (RSA) and predicted that road authorities are obligated to apply RSA to road design, and apply RSI to existing roads.
  - Minister of Transport was to adopt the ordinance RSA / RSI (regulations ...)
    - Who?
    - at what time?
    - where will it be working?

- By-laws were never made that would bring closer the realization of the Road Safety Audit and the Road Safety Inspection.

- The law did not specify regular periodic safety checks of existing sections of roads, or order obligation to road management to carry out targeted checks at the greatest risk sections of roads. On the other hand the Law did not provide for the implementation of other, modern procedures of improving roads.
5. EXPERIENCES AND BEST PRACTICE EXAMPLES IN IMPLEMENTATION OF ROAD INFRASTRUCTURE SAFETY MANAGEMENT (RSA /RSI)

EDUCATION – RSA / RSI

2008. - 2009. SEETO project

- 8 people from Bosnia and Herzegovina were educated about the RSA and RSI
- 2 two-day selected pilot projects in BiH were realized
- Pilot project RSA included: identification of the project, revision of project documents and field survey locations, and analyze the collected data and report writing
- Pilot project RSI included: the preparatory work and study documentation, safety testing on the road section, and writing reports for repair measures
- We got: Road Safety Audit Manual and Road Safety Inspection guideline

A BIG THANK YOU FOR SEETO PROJECT
5. EXPERIENCES AND BEST PRACTICE EXAMPLES IN IMPLEMENTATION OF ROAD INFRASTRUCTURE SAFETY MANAGEMENT (RSA /RSI)

**EDUCATION – RSA / RSI**

- **2010. – 2011. SWE ROAD project**
  - several people were educated about Safe Road Design, RSI and RSA
  - the existing road design guidelines for BiH from 2005 are more focused on capacity and economy than on safety
  - Guidelines for the following design items are missing: - Safe design principles, - Cross sections and median separation, - Intersections, - Roadside areas including barriers and guardrails, - Speed control measures, - Pedestrian and cycle facilities, - Public transport facilities

Some examples from project

Often it is difficult to distinguish the running roadway from roadside area

Sharp curves without widening
Based on the occasional and partial review of the safety of individual sections of main roads by employees of the Department of traffic safety and local police, we can say that the typical and most numerous deficiencies in the main roads of the FBiH are related to the vertical signaling (photos below) ....:

- Incorrect or incomplete, signs
- Illegible and faded signs (without sufficient retroreflection), bush hidden signs

- Hazardous complete protective fencing; Unprotected foundations and pillars of the sign
- fixed / planted interference outside the safety zone

- unmarked traffic island / unprotected pedestrian crossing
- curve with poor visual conditions to provide before and after intervention

- disguised advertising signs (before and after intervention)
- intersections before and after reconstruction

- based on the RSI at half the sections we reduce the speed by 10 km / hour
MONITORING AND MANAGEMENT OF TRAFFIC ON THE MOTORWAY ON CORRIDOR VC

- Tunnels on the highway are equipped in accordance with Directive 2004/54 / EC on minimum safety requirements for tunnels. The directive is aimed at ensuring a minimum level of safety for road users in the trans-European road network by preventing critical events that could endanger human lives, the environment, the installation in the tunnel, as well as providing protection in the event of an accident.

- Center for maintenance and traffic control

- Active monitoring of traffic, which is achieved visually through video surveillance and other available information and alarms officer for the management and supervision shall decide on the mode of traffic, or the activation of a particular predefined traffic scenarios
• **Bosnia and Herzegovina Automobile Club BIHAMK (PC Roads of the Federation of Bosnia and Herzegovina)** joined the program during 2007.

• **Risk Mapping**: based on real crash and traffic data, colour-coded maps show a road's safety performance by measuring and mapping the rate at which people are killed or seriously injured. Different maps can be produced depending on the target audience.

• **Star Rating**: using drive-through inspections of routes in specially equipped vehicles. Ratings show the likelihood of a crash occurring and how well the road would protect against death or serious injury in the event of a crash.
6. CONCLUSIONS

- Road safety management system and its parameters are closely linked with the political, social and economic conditions in BiH
- Road safety in BiH - is not a common responsibility of all governing structures and all stakeholders
- Establish and continuously strengthen the horizontal and vertical coordination and cooperation in the field of traffic safety.
- Improve coordination between the road authority and other entities that can contribute to road safety

As priorities should be regarded:
- stronger police enforcement (increased probability of being caught in the act.)
- training in road design, road safety, traffic engineering and accident analyses
- elaboration of a safety-centered driver education system,
- RSI on the existing road network and RSA on the motorways
THANK YOU FOR YOUR ATTENTION!