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Influence of the vignette system on road safety in the Republic of Slovenia

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Vignette tolling system

General information:

- implemented in July 2008,
- in use for vehicles up to 3,5 tons,
- tolling of trucks hasn't changed,
- no construction changes on toll stations,
- new vertical and horizontal signalization.

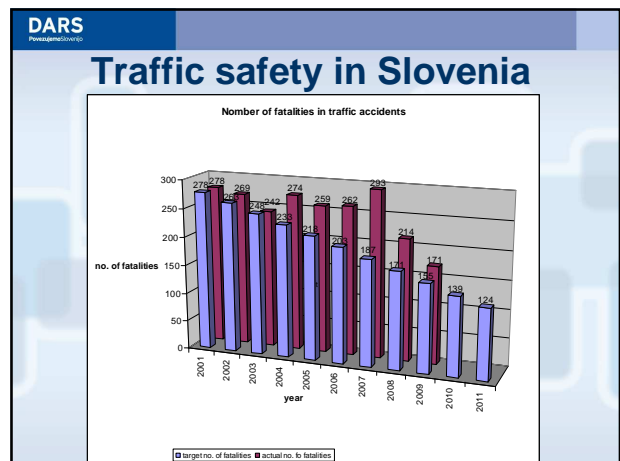
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Vertical traffic signs

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Traffic safety and volumes in Slovenia

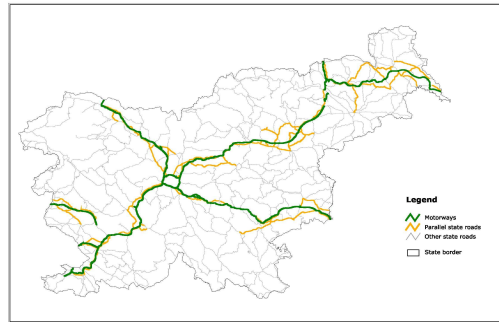
Year	Road network				Consequences of Road Accidents		
	MW and EW (DARS) in km	Main and regional roads in km	Traffic operation		Fatalities	Seriously injured	Lightly injured
			All vehicles	Trucks			
2002	435	5.786,70	10.019,90	1.129,90	269	1.561	12.538
2003	451,5	5.763,00	10.306,70	1.254,50	242	1.411	15.487
2004	451,5	5.764,10	10.864,50	1.391,30	274	1.396	17.662
2005	481,0	5.767,60	11.104,70	1.473,90	257	1.295	13.424
2006	481,0	5.797,80	11.520,00	1.598,00	262	1.261	15.363
2006	481,8	5.851,40	12.120,80	1.824,70	293	1.295	15.108
2008	567,3	5.926,10	12.711,00	1.995,60	215	1.094	11.618
2009	N/A	N/A	N/A	N/A	171	1.035	11.085



Traffic safety and volumes analysis

- analysed period – from one year before till one year after vignette introduction,
- highway and expressway network analysed – 442,6 km - complete network in use at the time of vignette introduction,
- parallel network analysed – 927,9 km of main and regional roads,
- detailed analysis was prepared for three typical sections.

Network included in the analysis



Traffic volumes analysis – overall results

Traffic volumes on 97 counting points on motorways and expressways:

- higher on 82 counting points – an increase up to 56 % was detected,
- lower on 15 counting points – a decrease up to 12% was detected.

Traffic volumes analysis – overall results

Traffic volumes on 116 counting points on parallel main and regional roads:

- lower on 71 counting points – an average 21 % decrease was detected,
- higher on 45 counting points – an average 21 % increase was detected – mainly on roads leading to highways and expressways.

Traffic safety analysis – overall results

ROAD CATEGORY	TOTAL NO. OF ACCIDENTS		LIGHT INJURIES		HEAVY INJURIES		FATALITIES	
	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes
	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009
Motorways and Expressways	2899	2305	447	518	52	52	23	20
Main and Regional Roads	4136	1843	1085	708	135	81	39	28

Detailed analysis on three Motorways sections

ROAD CATEGORY AND SECTION	TOTAL No. OF ACCIDENTS		LIGHT INJURIES		HEAVY INJURIES		FATALITIES	
	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes
	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009	1.1.2007 - 30.6.2008	1.7.2008 - 30.6.2009
A1 Maribor – Celje - Ljubljana, Section Vransko - Domžale	145	132	18	31	4	4	0	0
A1 Ljubljana - Koper, Section Ljubljana - Postojna - Črni kal	532	453	67	79	8	11	1	3
A2 Ljubljana – Novo mesto, Section Ljubljana - Grosuplje - Ivančna Gorica	122	124	22	35	8	2	1	1

Detailed analysis on three sections paralel to Motorways

ROAD CATEGORY AND SECTION	ACCIDENTS -TOTAL		LIGHT INJURIES		HEAVY INJURIES		FATALITIES	
	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes	Before vignettes	After vignettes
	1.1.2007-30.6.2008	1.7.2008-30.6.2009	1.1.2007-30.6.2008	1.7.2008-30.6.2009	1.1.2007-30.6.2008	1.7.2008-30.6.2009	1.1.2007-30.6.2008	1.7.2008-30.6.2009
R2, Section Vransko - Trojane - Domžale								
Section Total	68	35	24	17	5	5	1	2
R2, Section Ljubljana - Logatec - Postojna - Kozina - Črni kal								
Section Total	306	96	66	29	17	4	6	1
G2 in R3, Section Ljubljana - Škofljica - Šmarje Sap - Grosuplje - Ivančna Gorica								
Section Total	57	27	14	3	4	1	1	0

Activities to Improve Traffic Safety

Main activity areas of the program:

- legislation and technical regulations,
- planning, construction and reconstruction of road sections,
- management, operation and maintenance of existing roads

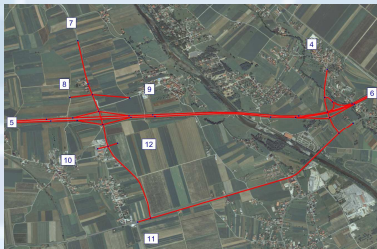
Legislation and technical regulations

- close cooperation with Ministry of transport,
- enforce higher penalties for most severe violations of traffic regulations (wrong way driving, safety distance, speeding)
- enforcing Directive on Road Infrastructure safety management (Directive 2008/96/ES)

Planning, construction and reconstruction

- full implementation of activities set by the Directive 2008/96/ES (assessment, audit),
- Implementation of ITS systems for traffic supervision on all most dangerous sections,

Road safety impact assessment



Existing road network influenced by new expressway

Road safety impact assessment



Project variant No. 1

Road safety impact assessment



Project variant No. 2

Road safety impact assessment



Project variant No. 3

Road safety impact assessment



Project variant No. 4 – selected variant

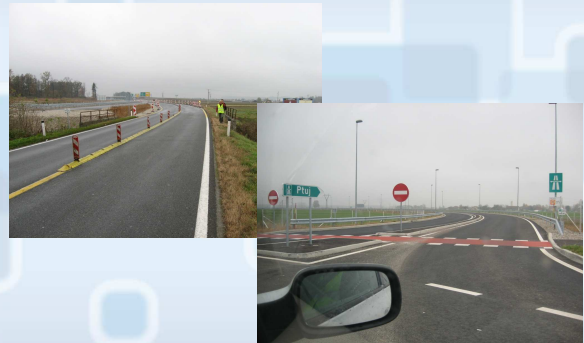
Measures on existing road sections

- **Inspection of all existing roads.**
 - Exits and entrances – already inspected and signalisation unified,
 - Open motorway sections – will be inspected by September 2010,
- **Installation of modern equipment for traffic supervision – in progress:**
 - Transports of dangerous substances,
 - Wrong way driving,
 - Inadequate safety distance

Proposed measures



Implemented measures



Implemented measures



Conclusions

To compensate external negative influences on traffic safety we must act swiftly with adequate measures.

Penalties should not be the only way for better traffic safety.

Using new solutions and equipment for traffic management and supervision.

Join us on our way! Thank you.

