



Drogi zaufania

Zwiększanie Potencjału Na Rzecz Bezpieczeństwa Ruchu Drogowego

Building Road Safety Capacity



**INFRASTRUKTURA
I ŚRODOWISKO**
NARODOWA STRATEGIA SPÓJNOŚCI



Generalna Dyrekcja
Dróg Krajowych i Autostrad

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ
ROZWOJU REGIONALNEGO



Management of Dangerous Road Sections in Estonia

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Fatality comparison with neighbours

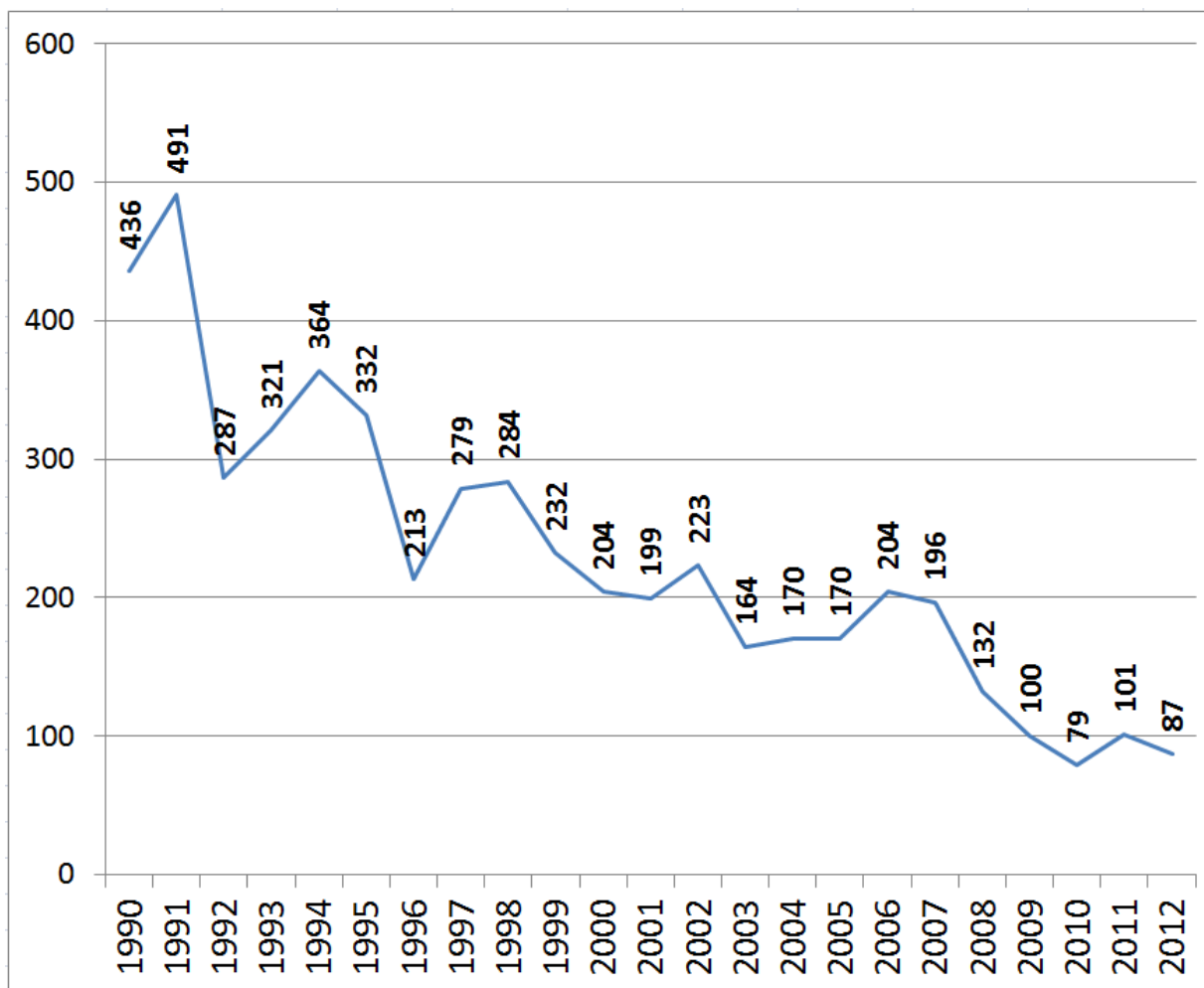
- 1998 – 2002 averages

Indicator	Estonia	Norway	Sweden	Finland	Denmark
Fatalities per year	242	299	554	433	517
Fatalities per 100'000 inhabitants	16,8	6,8	6,3	8,4	9,8
Fatalities per 10'000 vehicle	4,6	1,2	1,4	1,9	2,5
Fatalities per 100 mill. vehicle*km	4,3	0,9	0,8	1,0	1,4

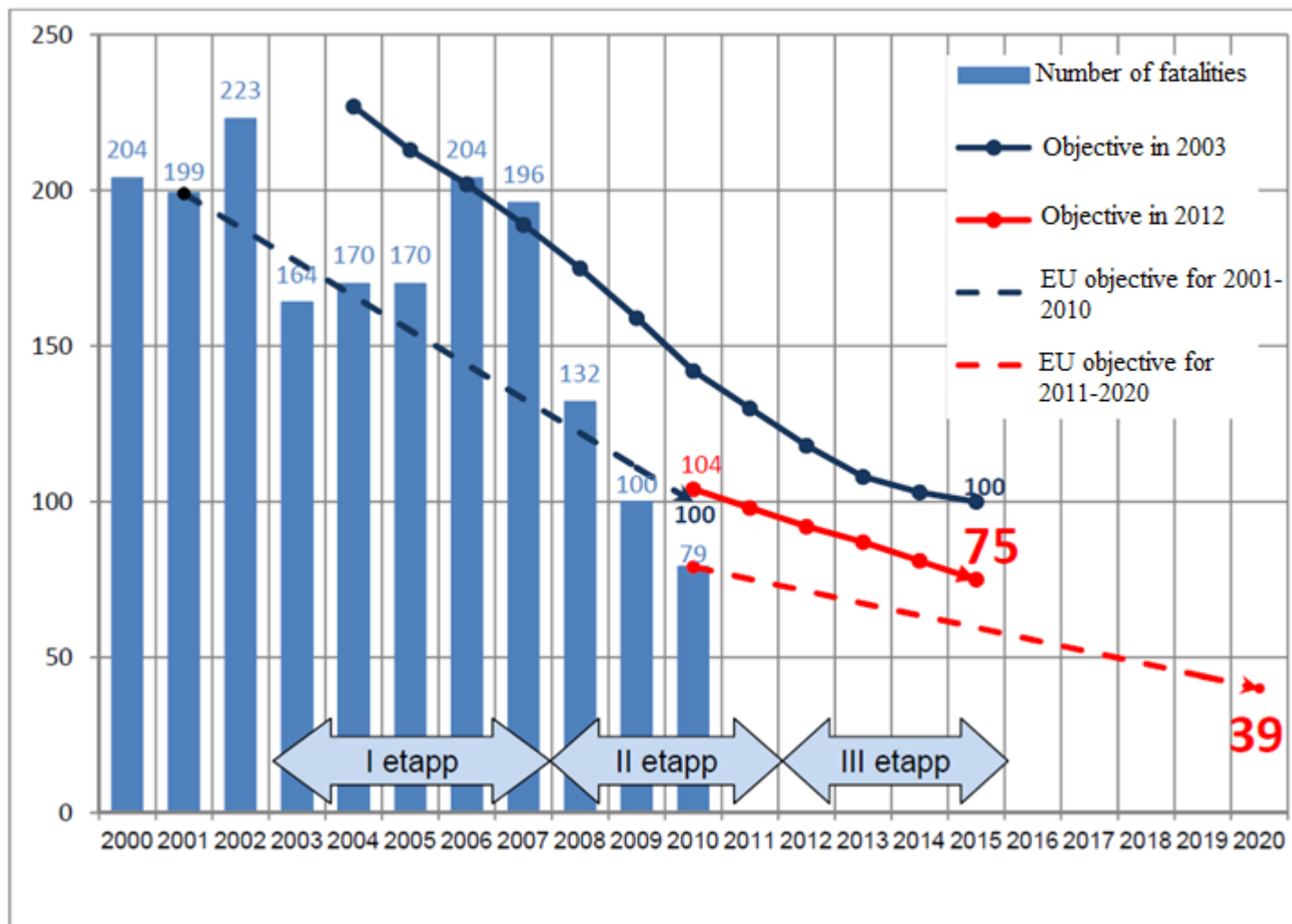
The Estonian National Traffic Safety Program 2003-2015

- Divided into three 4-year implementation stages:
 - a) 2003 – 2006
 - b) 2007 – 2010
 - c) 2011 – 2015
- Every stage is supplied with detailed plan of activities
- Objective in 2003: the average number of fatalities may not be more than 100 per year in 2015
- Government modified objective in 2012: the average number of fatalities may not be more than 75 per year in 2015

Fatalities in Estonia during 1990 - 2012



Fatalities in Estonia during 1990 – 2012 (2)



Dangerous Road Sections in Action Plan

- The National Traffic Safety Program action plan has lots of activities.
- Elimination of dangerous road sections is one of the most important parts of program.
- Elimination of dangerous road sections is financed from the state budget.
- Estonia is divided into four regions.

Budget equation for region: 75 % region's roads length + 25 % region's number of inhabitants

Definition of Dangerous Road Section (DRS)

- A section or an intersection qualifies as a **dangerous road section**, when at least one of the following conditions is met:
 - 1) There has been three or more accidents with victims during last three years on a section;
 - 2) Technical solution of a section does not correspond to the design standards and therefore the risk of traffic accident is obvious;
 - 3) The traffic flow has increased remarkably and therefore the risk of traffic accident is higher;
 - 4) The riskiness of a situation is perceptible by different groups of road users. (Comments on risk may come from road owner, road maintainer, local authority or local inhabitants).

Usually section is not longer than 500 m.

Definition of Dangerous Road Section (DRS) (2)

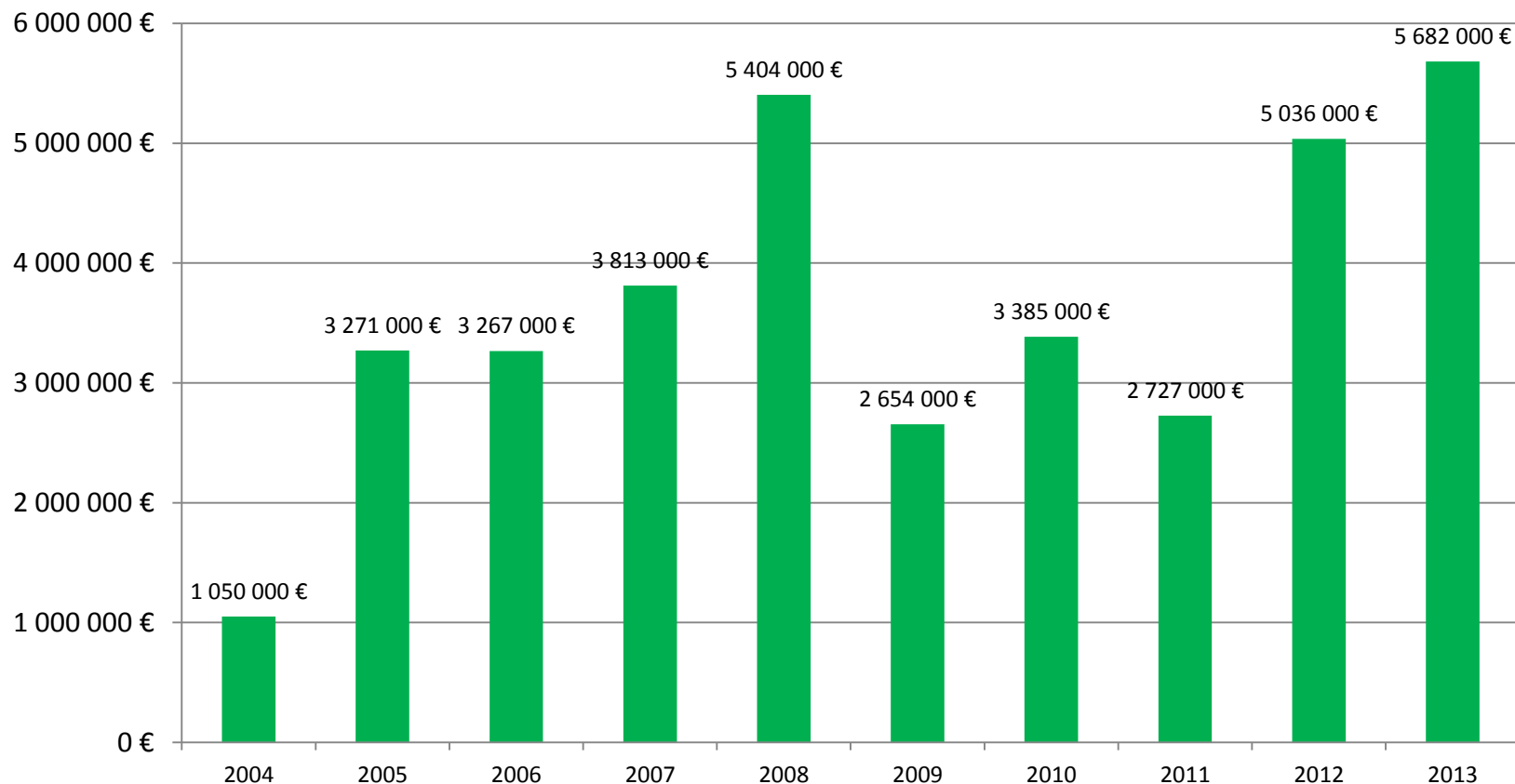
- A section **should not** be handled as DRS, when dangerousness comes from insufficiency of traffic control devices or deformations of embankment, pavement or other road elements.
- Definition of DRS should also expand to sections where traffic accidents have not happened yet, but have great potential to have them.
- Estonian Road Administration **regions** have the competence and responsibility to stand for finding out DRSs and their eliminating methods.
- The cost of elimination of one DRS should be in accordance with other road works in near future. Therefore, its cost may vary a lot, but should not generally exceed **200'000 €**.

Examples of DRS elimination

- 1) Partial or complete reconstruction of an intersection;
- 2) separating different road user groups from each other (building a bicycle and/or pedestrian track);
- 3) adding lighting to an intersection, to pedestrian crossing or to short dangerous road section (steep curve);
- 4) building crossing or pedestrian crossing with construction of safety island;
- 5) improving longitudinal, side or intersection visibility;
- 6) different technical measures for preventing traffic accidents or relieving accident consequences (e.g building a raised curve, installing crash barrier)
- 7) building traffic calming systems;
- 8) some other measures for improving traffic environment;

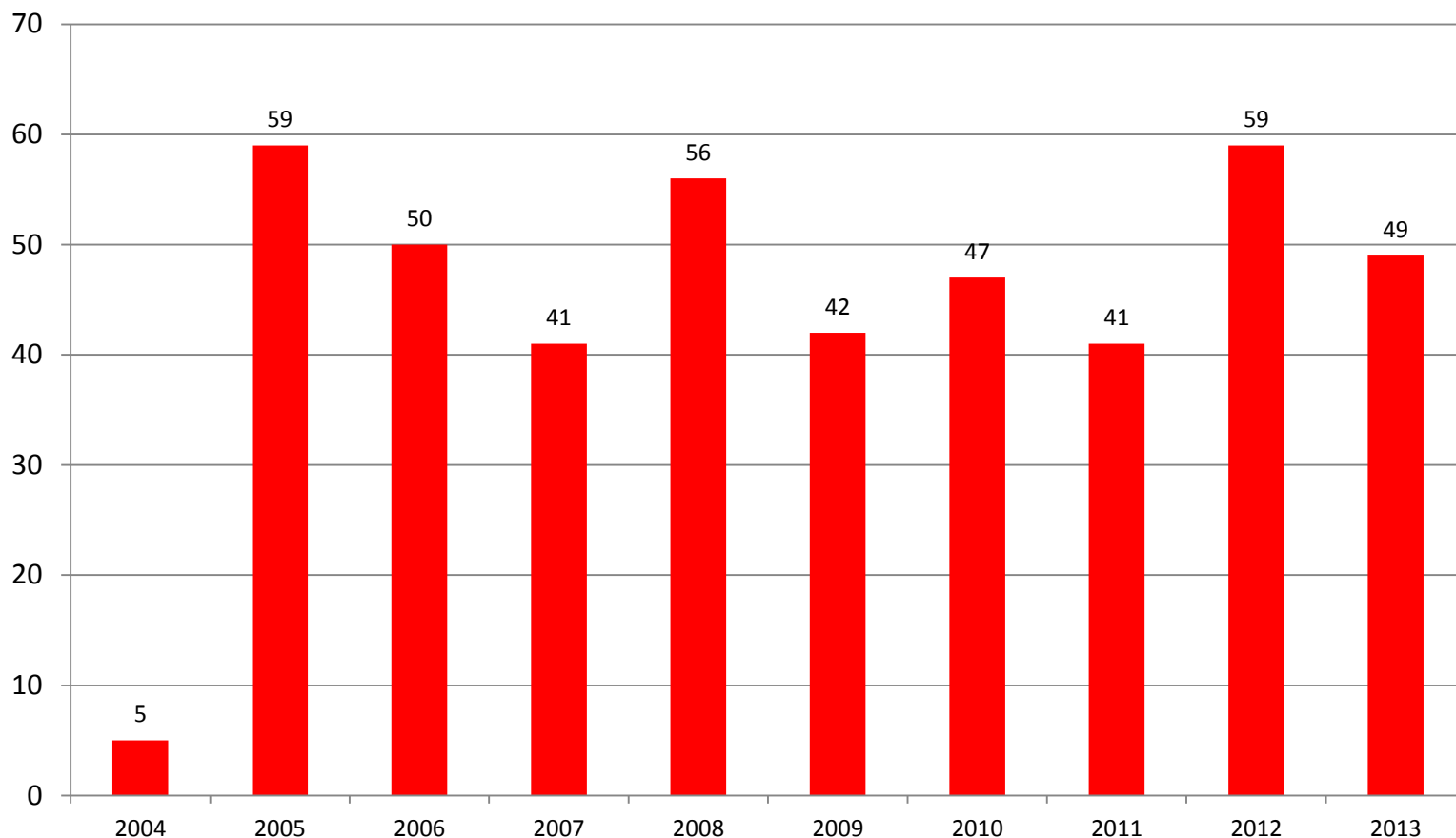
Usual works for road building or road maintenance (pavement repair, installing traffic signs, repairing road marking) should not be considered as DRS elimination works.

Elimination of DRS 2004 – 2013. Annual costs



Total: 36.3 million €

Elimination of DRS 2004 – 2013. Amount of sections reconstructed



Total: 449 sections

Elimination of 2013

	Amount of sections	Costs (EUR)
Northern	9	1 086 500
Southern	8	1 660 000
Eastern	9	959 650
Western	12	1 421 000
Total	38	5 127 150

Example nr 1

Intersection of basic road 59 and secondary road 19277: a) X-intersection to roundabout b) lighting c) pedestrian crossings



Before



After

Example nr 2

Intersection of main road 5 and local street: a) Y-intersection to roundabout b) pedestrian crossings

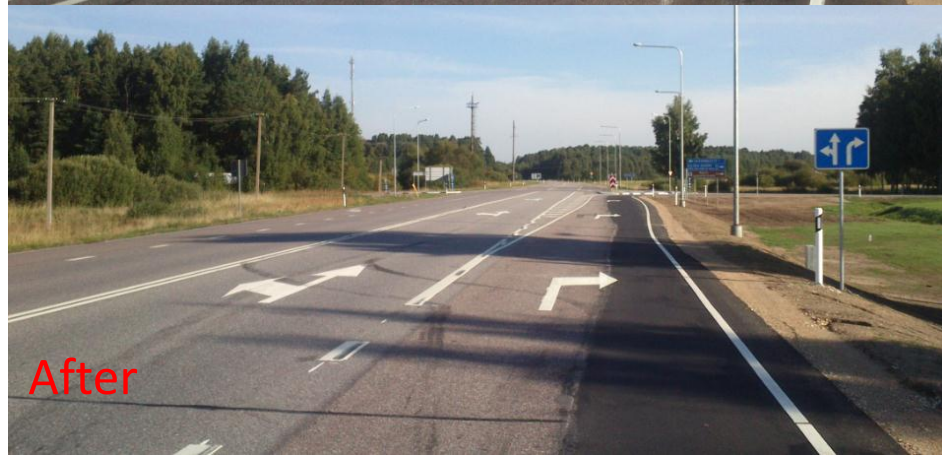


Example nr 3

Intersection of main road 4 and secondary road 19330: a) lighting improved b) safety islands c) deceleration lane moved away d) STOP sign



Before



After

Directive 2008/96/EC

- **Road Safety Impact Assessment (RSIA)** - a strategic comparative analysis of the impact of a new road or a substantial modification to the existing network on the safety performance of the road network;
- **Road Safety Audit (RSA)** - an independent detailed systematic and technical safety check relating to the design characteristics of a road infrastructure project and covering all stages from planning to early operation;
- **Network Safety Ranking (NSR)** - a method for identifying, analysing and classifying parts of the existing road network according to their potential for safety development and accident cost savings;
- **Road Safety Inspection (RSI)** - means an ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety;

Directive 2008/96/EC implementation

- **There are four regulation by Minister of Economic Affairs and Communications:**
 - 1) terms and conditions of traffic safety **impact assessment** and requirements for impact assessment;
 - 2) terms and conditions of **traffic safety audits** and requirements for audits;
 - 3) terms and conditions of **safety ranking of roads** and requirements for safety ranking of roads;
 - 4) terms and conditions of **safety inspections** of roads and requirements for safety inspections of roads.
- **Compulsory comes from Road Act**

Future steps

How to unite NSM, RSI, (RSIA, RSA)

and

current management of dangerous road sections

?

Thank You for Your attention!