



TRAFIKVERKET
SWEDISH TRANSPORT ADMINISTRATION

VISION ZERO ACADEMY

STRIVING
FOR EXCELLENCE IN
TRANSPORT
SAFETY



Road design, traffic
environment

Road design, traffic environment

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Identify the safe system



the safe system



Pedestrians crossing roads and streets



Separation

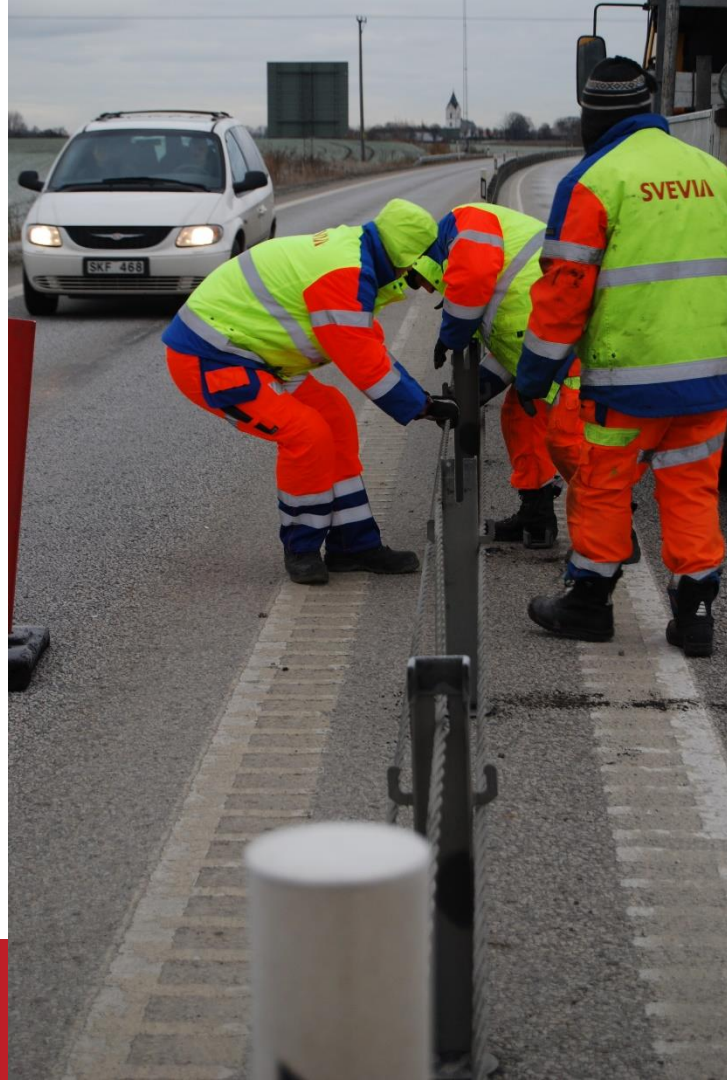




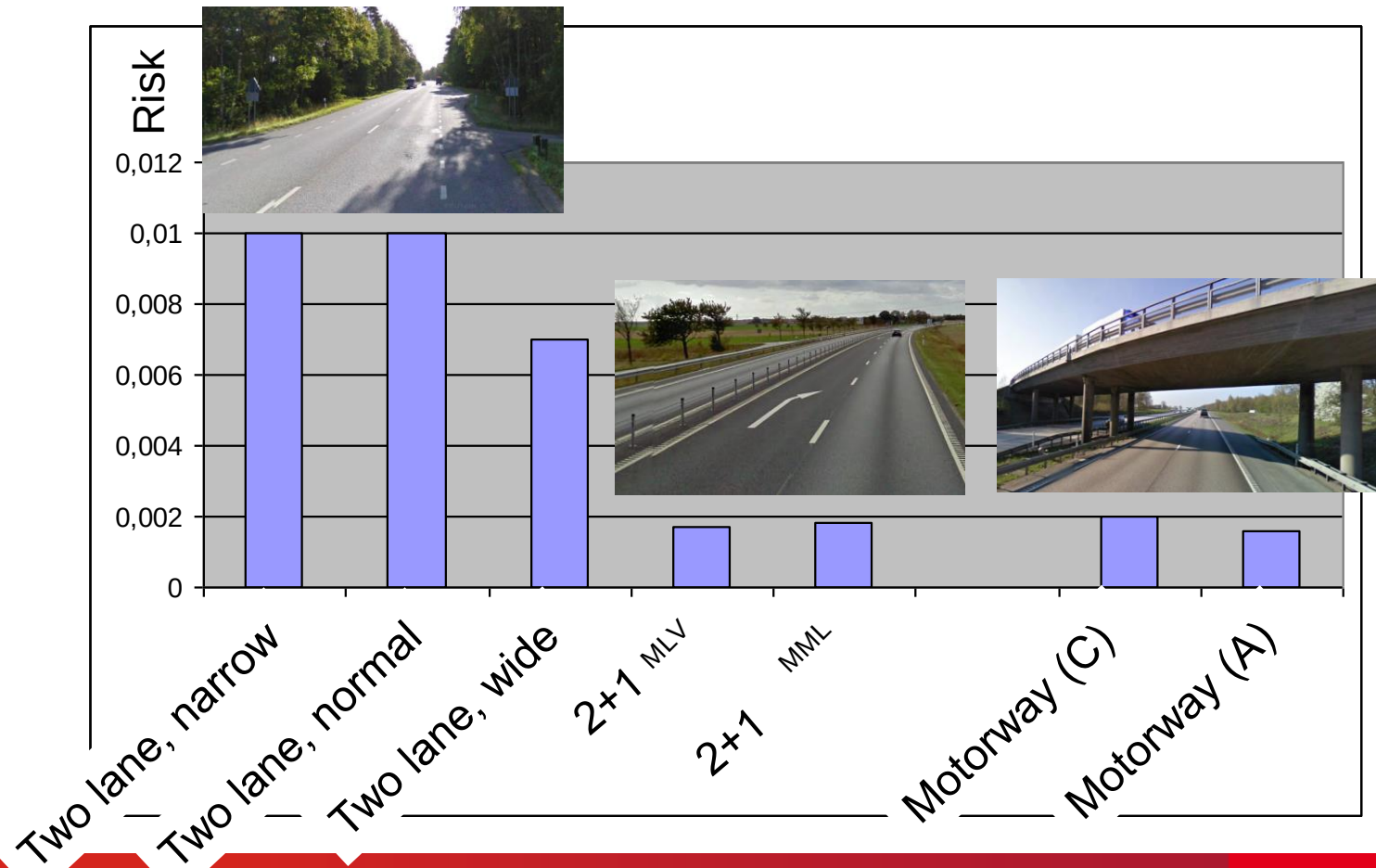




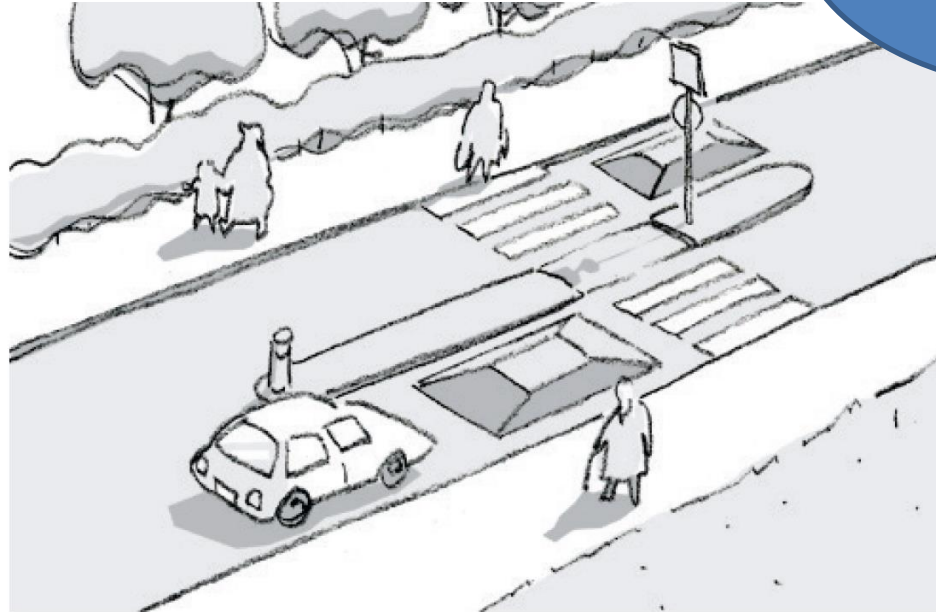








Calming













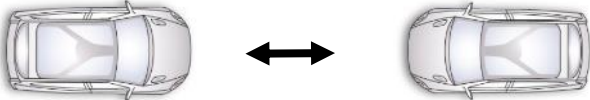
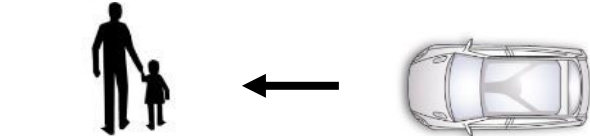
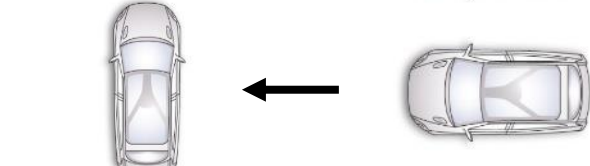
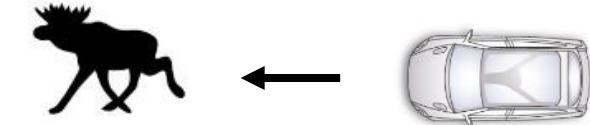




Intersections to roundabouts



Division of Responsibilities/ Boundary Conditions

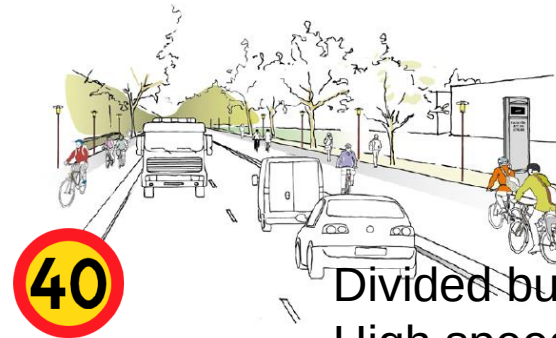
					Contribution passive safety	Contribution active safety
		↔		Head-on		
		←		Pedestrians		
		←		Side		
 40		←		Rear-end	 20	 20
		←		Large animals		



or



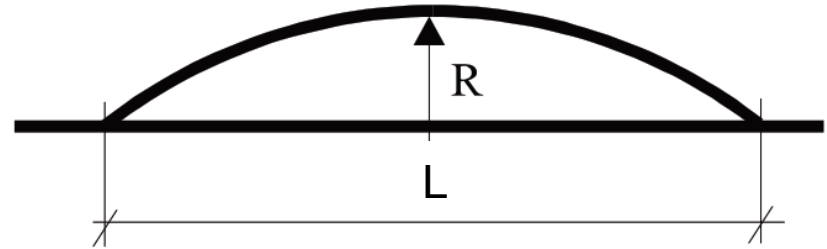
Speed as the regulator for interactions in urban areas



$$y_{after} = y_{before} \left(\frac{v_{after}}{v_{before}} \right)^P$$

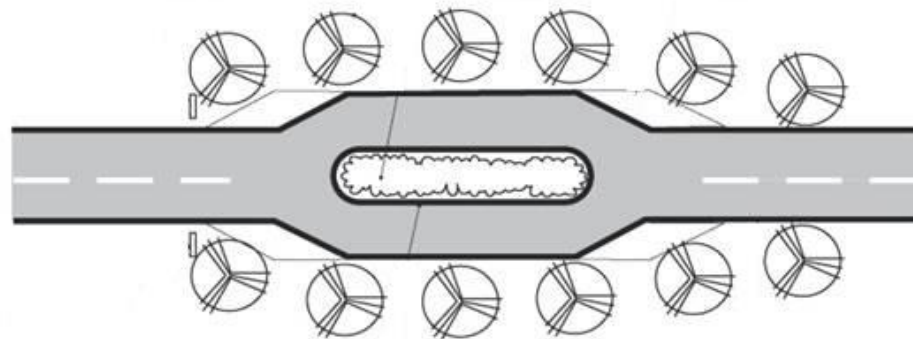
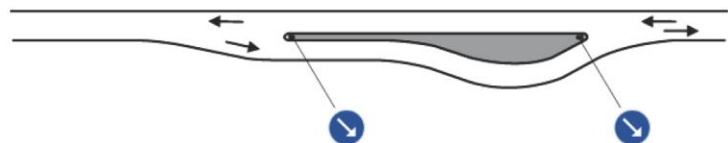
Severity	P (rural)	P (urban)
Fatal accidents	4,1	2,6
Fatalities	4,6	3,0
Severe accidents	2,6	1,5
Severely injured	3,5	2,0
All injury accidents	1,6	1,2
All injured	2,2	1,4
Damage only accidents	1,5	0,8

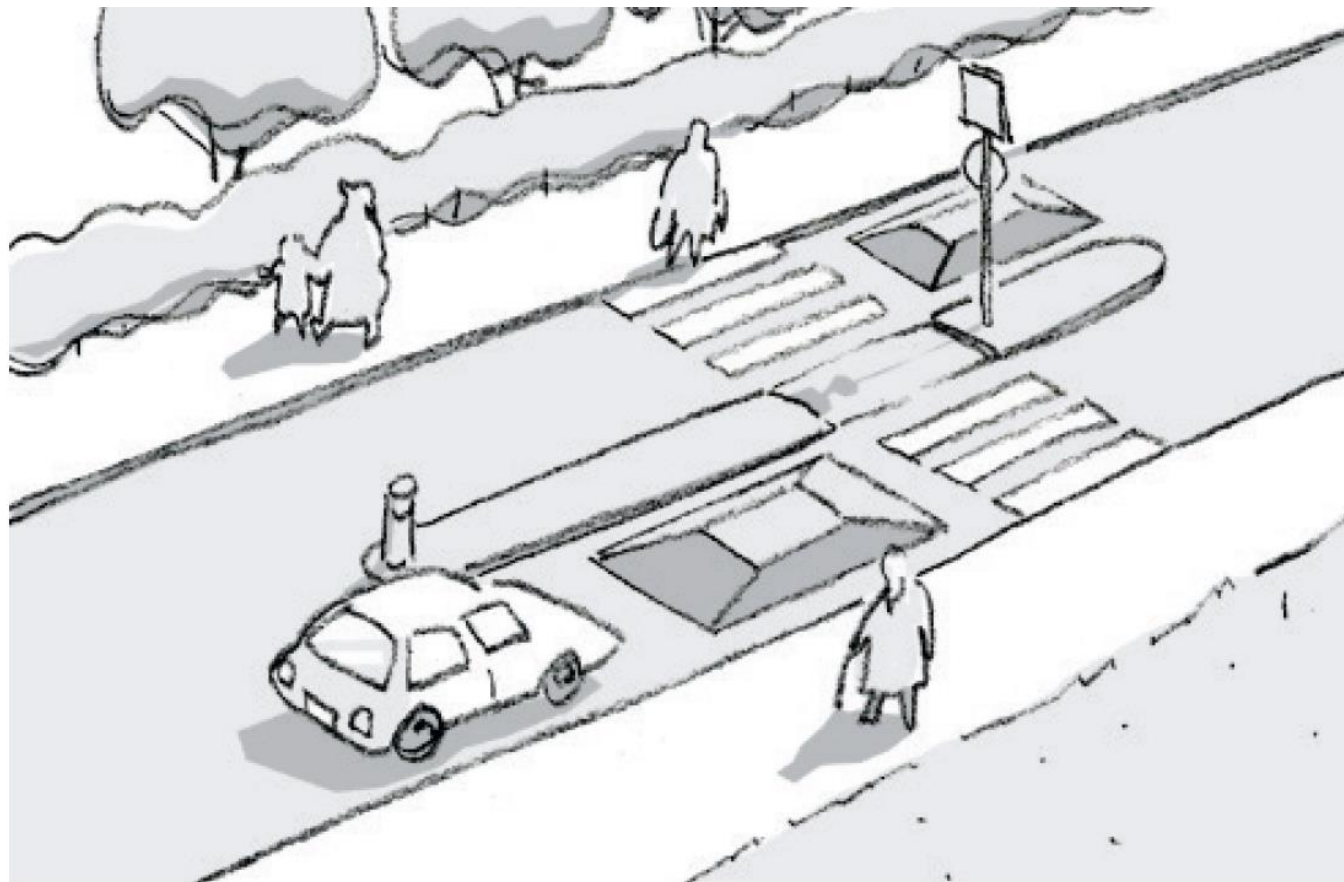
Hump



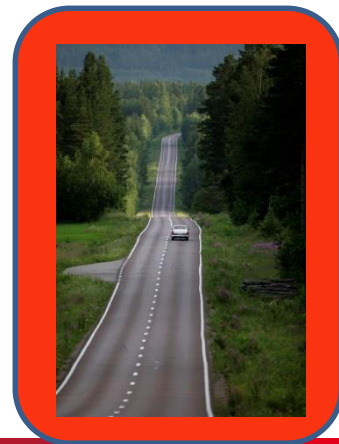
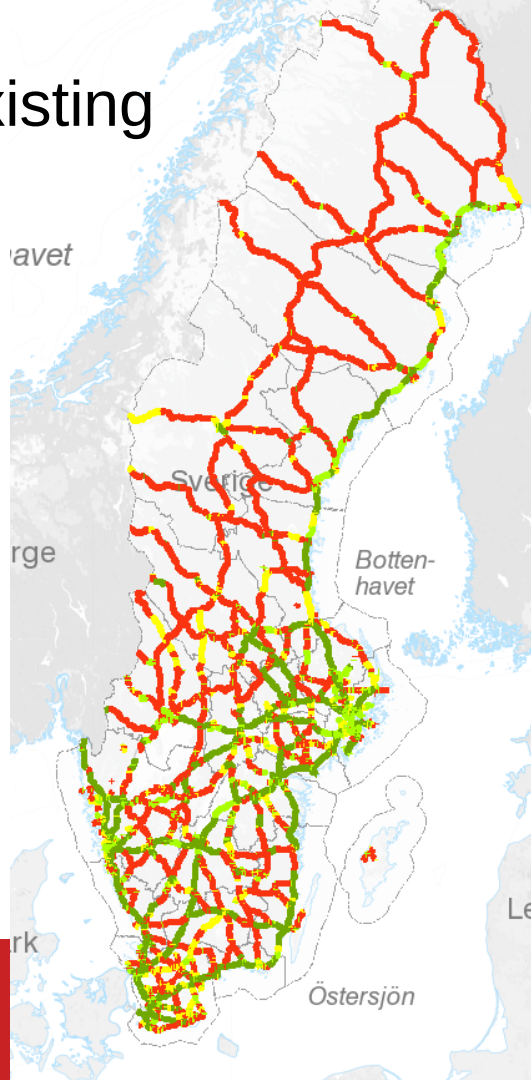
Circle hump 10 cm, expected speed km/h

L	R	Car	Lorry	Buss	Bogie bus	Articulated bus
3	11	25	5	15	15	15
3,7	17	30	15	15	20	15
4,2	22	35	20	20	20	15
6,5	53	45	25	30	30	20





Improvement on existing roads





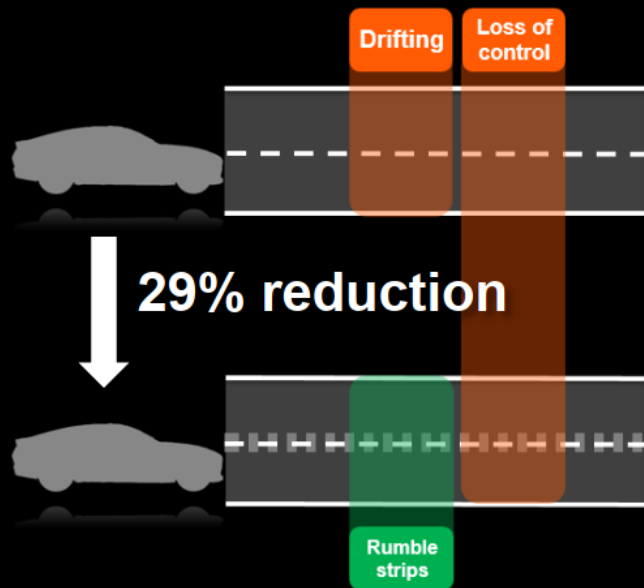






Material

- Police reported injury crashes 2011–2016, n=7,490
- Road design and road use parameters
- Case/control cars matched by car model and equipment (Electronic Stability Control and Seat Belt Reminder)
- ESC in 39% of the cars



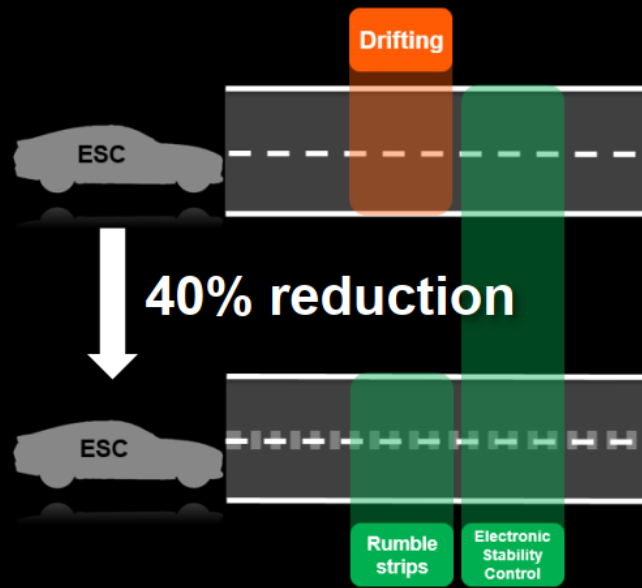
Induced exposure

Sensitive crashes:

- Lane drifting head-on
- Lane drifting single, left

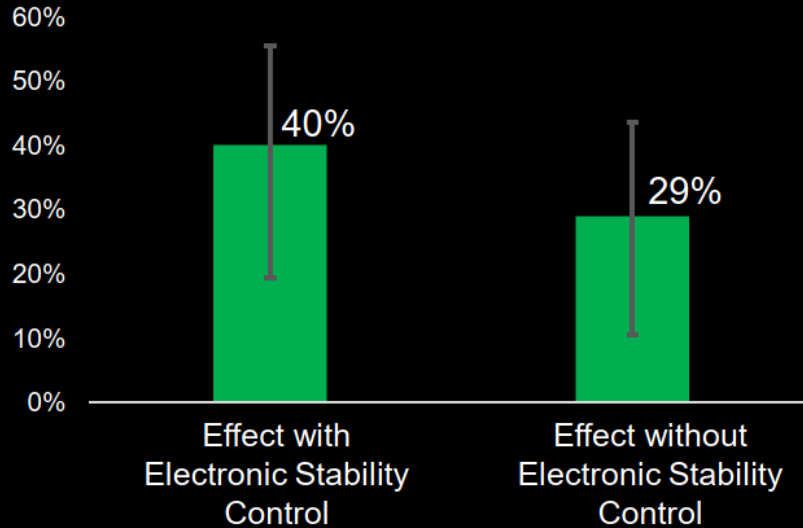
Non-sensitive crashes:

- Rear-end, etc.



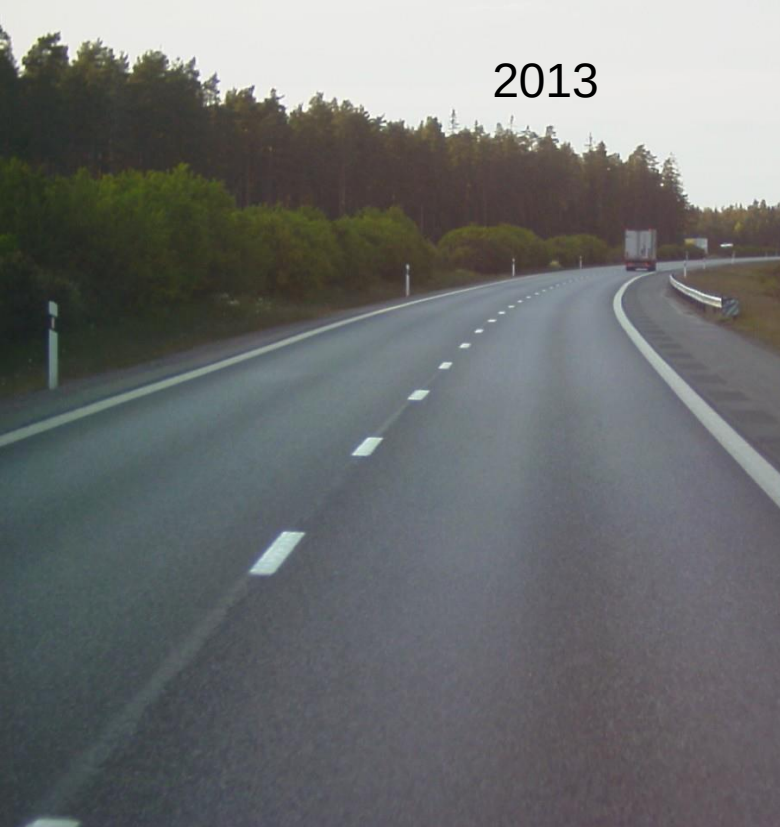
Effectiveness of centerline rumble strips

80 and 90 km/h roads





2013



2014



Fences and speed bumps



Safe bus-stop



Skadegrad
Väghållare
Trafikantkategori

Fatalities in car

Age

Fatalities in car

Antal av Olycksid
K

