Vision Zero and the New Paradigm for Road Safety - emphasizing critical lessons for infrastructure design

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Vision Zero: a Safe Traffic Concept

History

• On October 9, 1997 the Road Traffic Safety Bill founded on "Vision Zero" was passed by a large majority in the Swedish Parliament. This represents an entirely new way of thinking with respect to road traffic safety.

Goal

• The long term goal is that no-one shall be killed or seriously injured within the Swedish road transport system.
Safety Philosophy

"Any well functioning man-machine system brings the failing human into the loop".

"Blaming the victim approach is a catastrophe to prevention".
“Rule of Science”

“We shall only use the best possible methods and base our action on the failing human”
“Rule of Science” - cont.

“The biomechanical tolerance of the human is the limiting factor for the road transport system”
CENTRE GUARD RAILS

On existing 13m wide roads
Results of mid barrier programme

- From 22% of the traffic flow in 1998 to 38% in 2007
- On the 38% of the traffic flow 35 fatalities, on the 62% 280 fatalities - factor 5
- 10-20 times more cost effective than earlier, in fact a marginal decrease of the cost of saving lives.
SAFE ROAD AREAS

Design for people leaving the road
Results of improved side areas

- Euro - RAP shows a 50% reduction of serious and fatal injuries for 4-star side areas than 2-star areas
- Treatment with barriers is highly cost effective
ROUNDABOUTS

Intersection with problems
Focus on crashes results in signals
Focus on injuries results in roundabouts
Results of roundabouts

- 80-90% reduction of fatal injuries compared to traditional intersections
- Generally well accepted by citizens
Children killed in traffic in Sweden 1956-2005

- 7-14 år
- 0-6 år
Summary

• Vision Zero has radically changed system design, especially infrastructure design
• New infrastructure design is dramatically cheaper, effective and easy to implement
• A safety policy without an infrastructure component is likely to fail!