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# Facilities for VRUs and People with Disabilities

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**5<sup>th</sup> IRF Regional Conference on “Institutional Arrangement for  
Reduction of Road Fatalities”**

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**IIT Delhi2010**

## RSP in Global Status Report on Road Safety(WHO,2009)

- National Drinking and driving laws (80%)

Level of Enforcement Low(3/10)

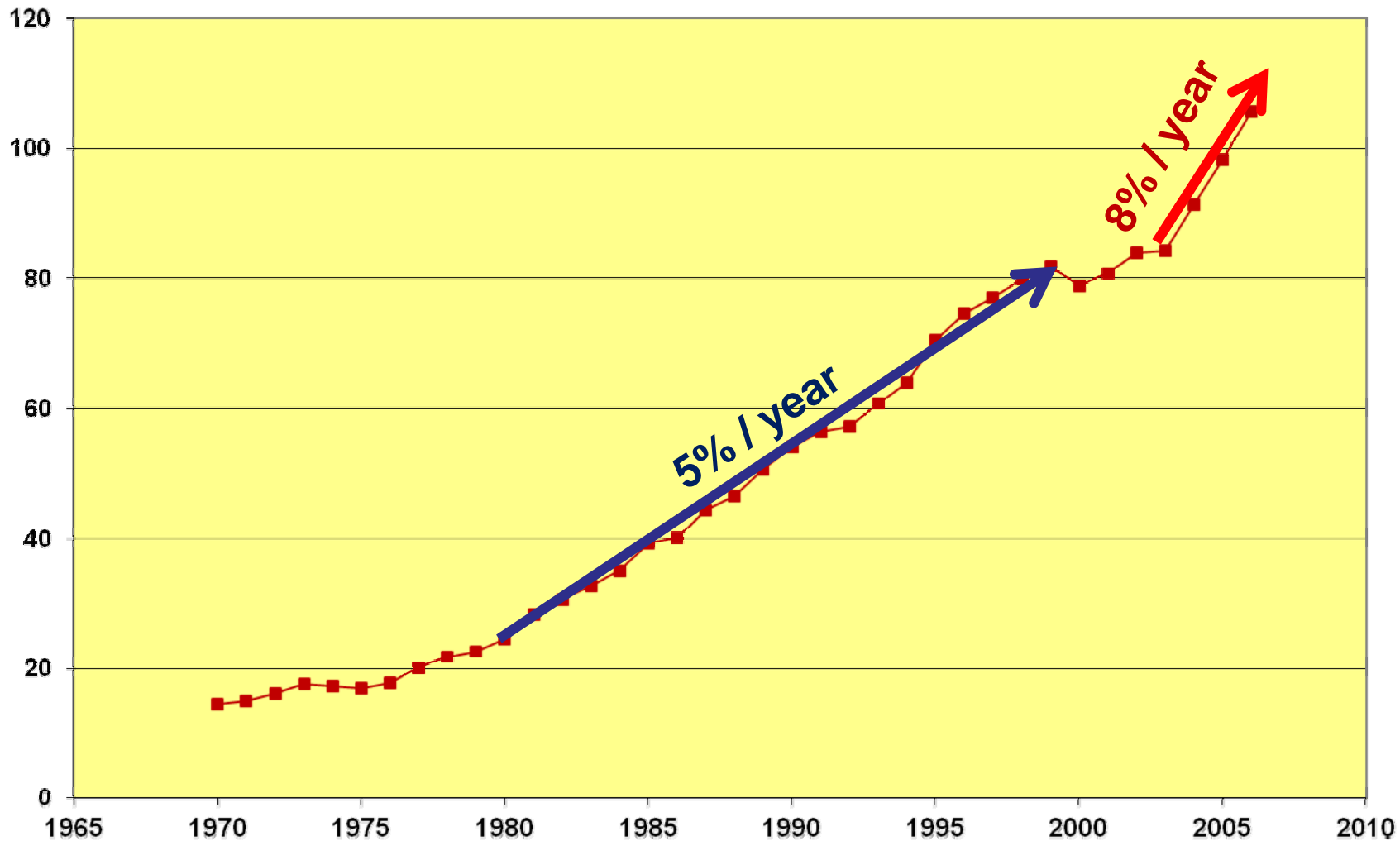
- Speed laws and enforcement (80%)

Level of Enforcement Low(4/10)

# RSP in Global Status Report on Road Safety(WHO,2009), **GOI communication**

- Road Safety management, strategies and policies
  - Presence of lead agency (90%) **Yes**
  - Funding of lead agency(60%) **Yes**
  - National road safety strategy(50%)**NO**
  - Measurable national targets(30%) **NO**
  - National policy to promote walking and cycling(40%)**Yes**
  - National policy to promote public transport(40%)**Yes**
  - Safety audit required for existing roads(70%)**NO**
  - Safety audit required for new construction(70%)**NO**
  - Driving test(100%)**Yes**
  - Vehicle insurance(70%)**Yes**

# Persons killed in road traffic crashes in India, thousand

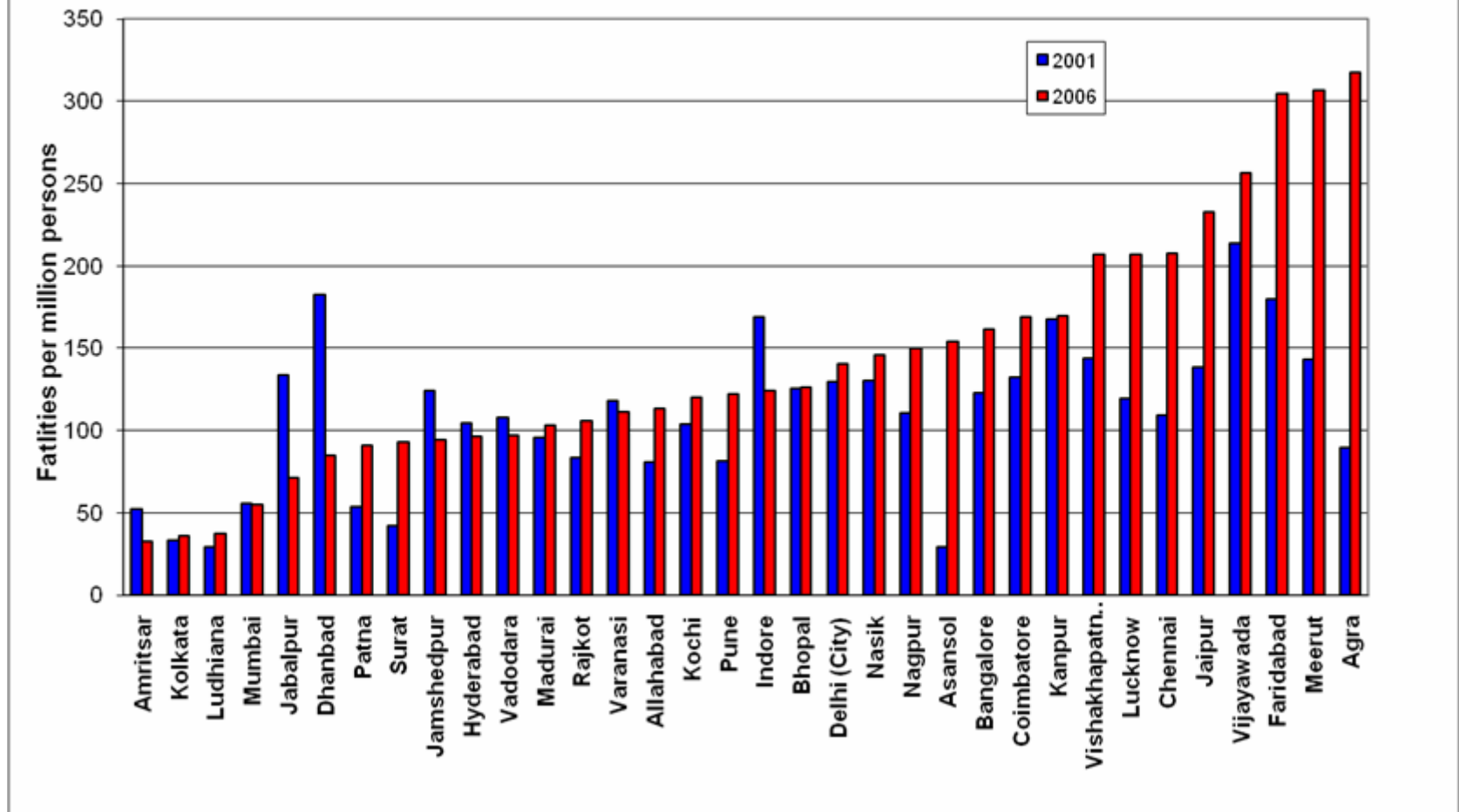


Source: NCRB, 2007

Estimated 1,650,000 hospitalised in 2006

Delhi December 10

### Fatalities per million persons in million plus cities, 2001 and 2006



# Existing Institutions inadequate!

- Existing institutions main concern has been to meet the mobility needs and not safety, especially of VRUs.
- Road Standards(IRC, NHAI, MORTH)
- Vehicle Standards(ARAI, Vehicle Industry)
- Laws for speed control, alcohol control etc.(MVA)



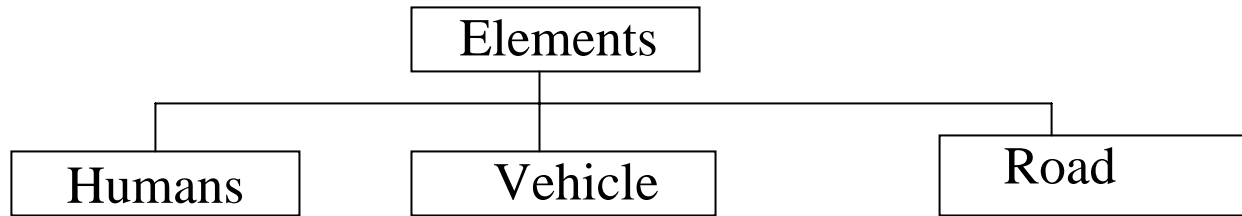
# What are the driving forces for RSP?

1. Safety concerns of stakeholders( intuition based)
2. Traffic safety science (Evidence based)

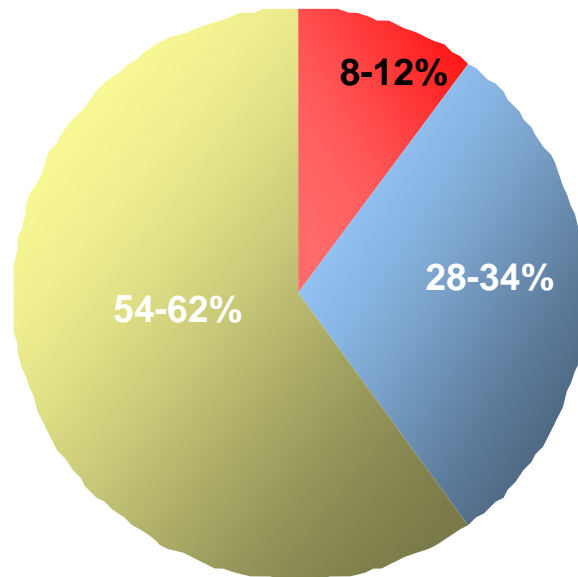


# Accidental Elements & % age Contribution

Basic elements of road accidents are;

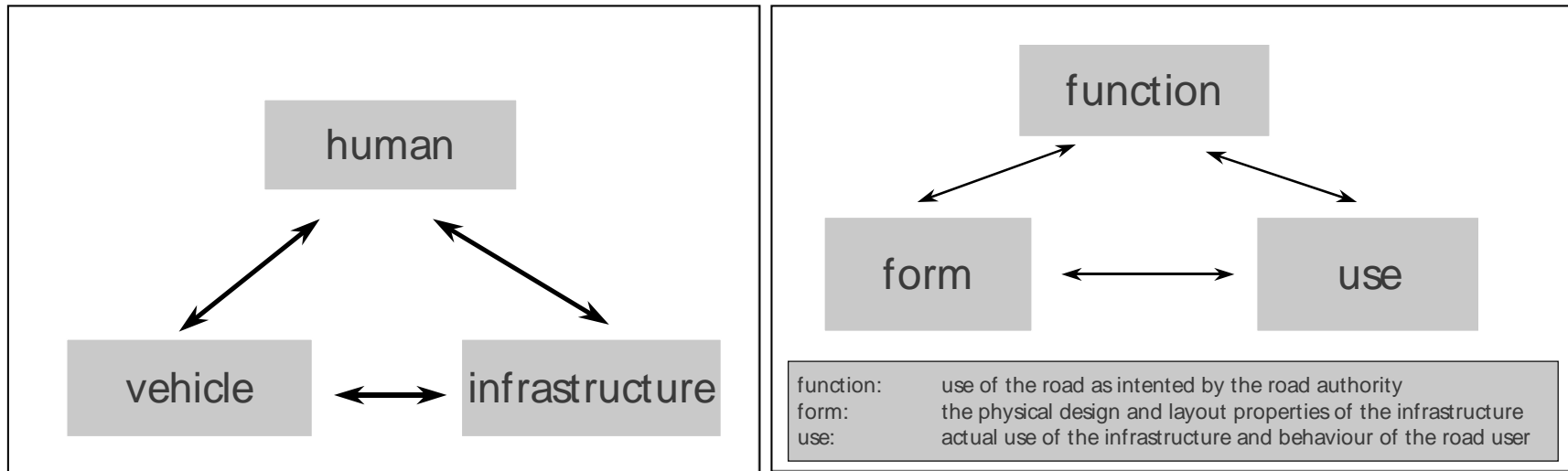


%Age Contribution in Road Accidents by these Elements



# sustainable safe traffic system

- a road environment with an infrastructure adapted to the limitations of the road user;
- vehicles equipped with technology to simplify the driving task and provided with features that protect vulnerable and other road users; and
- road users that are well informed and adequately educated.



**Retrofitting cities: Traffic Calming, roundabouts**



# What are the driving forces for RSP?

## 1. Safety concerns of stakeholders

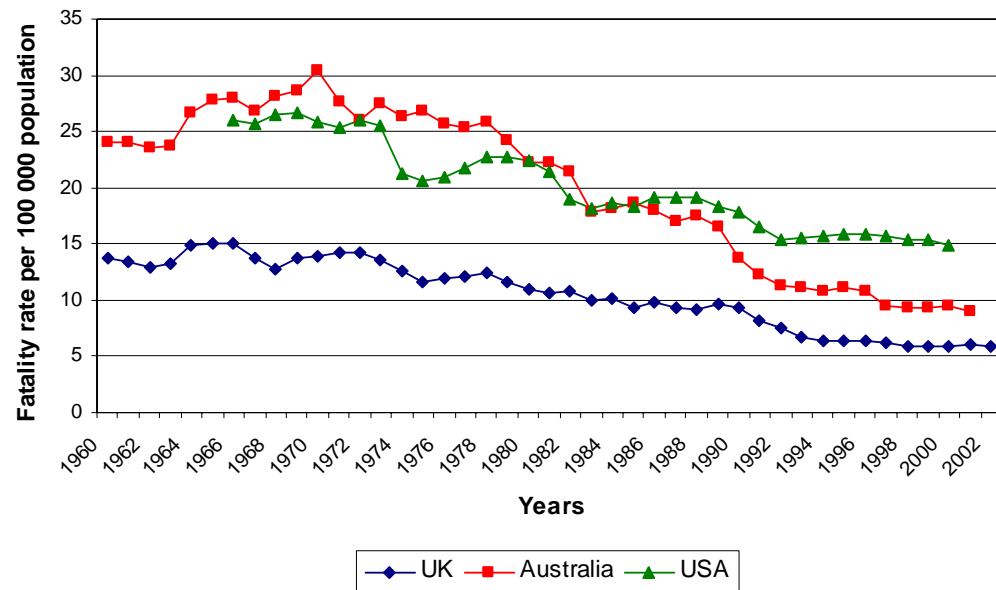
- Conflict between mobility concerns vs safety
- Mobility benefits to vehicle users and costs to vulnerable road users
- Myopic, based on “common sense”/ intuition

# *Traffic Safety Science in its infancy*

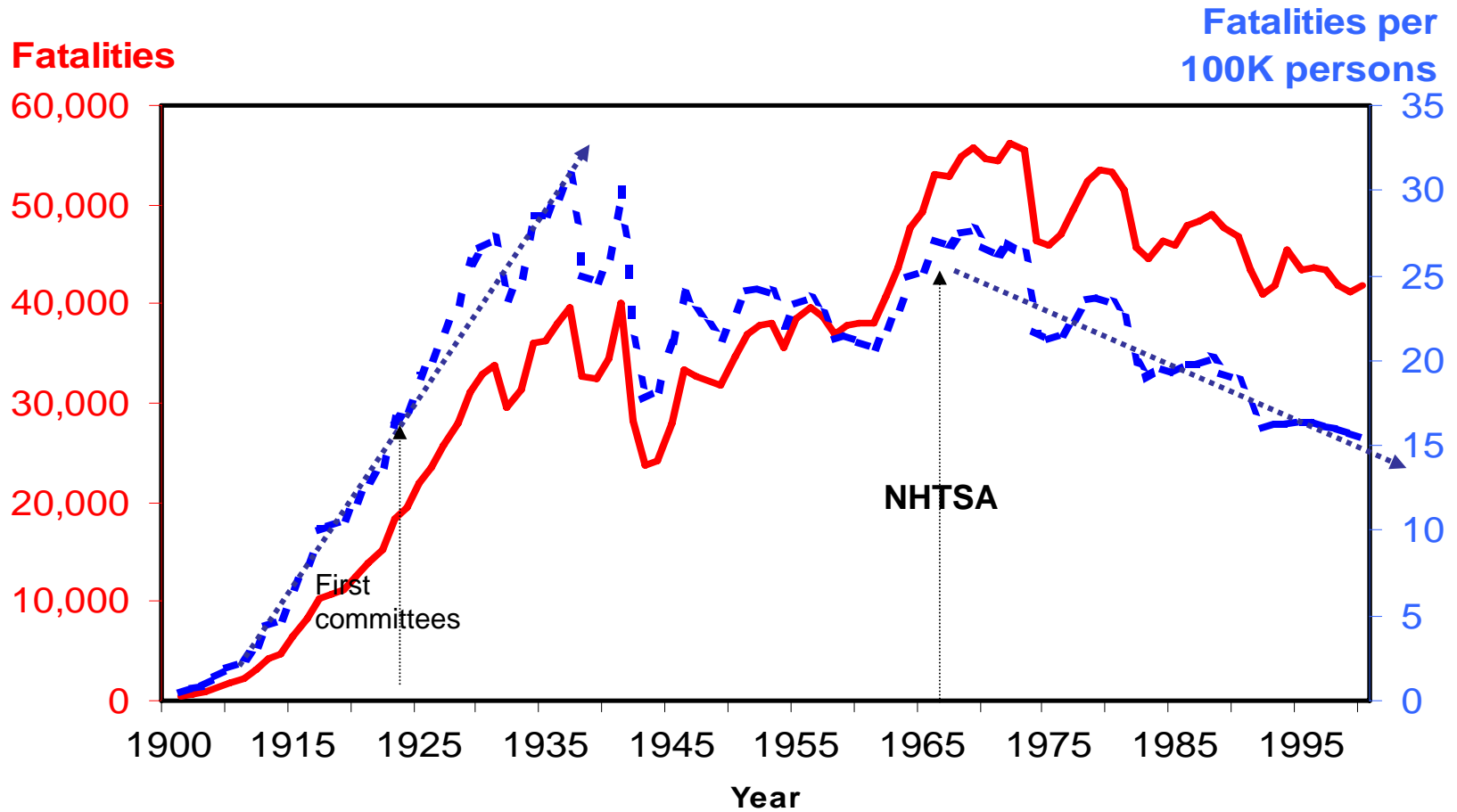
- **Counterintuitive results:** marked pedestrian crossings increased fatalities by 20% compared to unmarked, raised crossings decreased fatalities by 40% (Hyden et al)
- Drivers speed increase near a zebra crossing (varhelyi, A, 1999)
- Poor understanding of city structures and pedestrian behaviour: pedestrian exposure
- **Pedestrian safety requires safe cities,** *safe traffic system is a subset*

# How should we understand quality of RSP?

- Increasing trend – **Intuitive policies**
- Flattening trend- **Vehicle centric policies**
- Decreasing trend- **VRU centric**



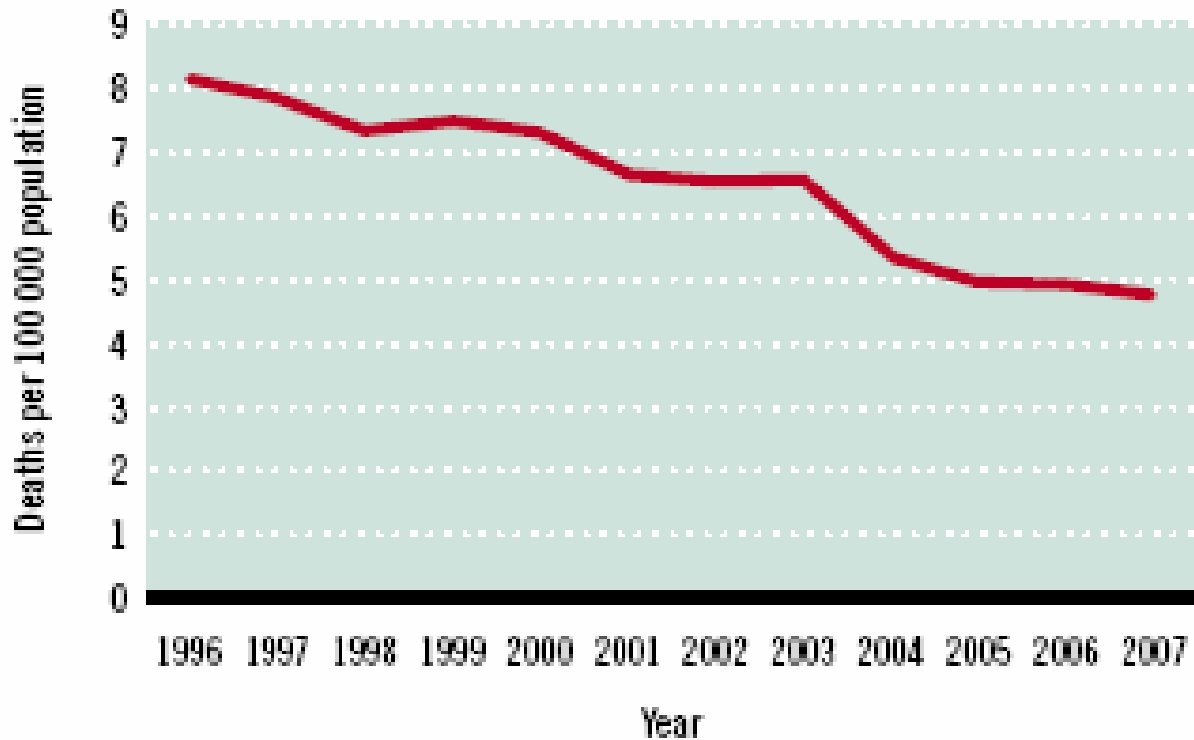
# Road traffic fatality trends USA



**Change in vehicle design and hiway standards**

# NETHERLANDS

## TRENDS IN ROAD TRAFFIC DEATHS



Source: Statistics Netherlands/Ministry of Transport, 2007

# The Zero Vision

October 1997, Road Traffic Safety Bill, Swedish Parliament

- **“The scientific basis of the vision zero differs from the usual approach to safety in human-machine systems: designing a system to minimize the number of events that cause injury. Instead, the vision zero is based on the notion of "allowing" these incidents to occur, but at a level of violence that does not threaten life or long-term health”**
- **“In the vision zero, the entire transport system must be designed to accommodate the individual who has the worst protection and the lowest tolerance of violence. No event must be allowed to generate a level of violence that is so high that it represents an unacceptable loss of health for that vulnerable individual.”**
- **“The responsibility for every death or loss of health in the road transport system rests with the person responsible for the design of that system. This is the ethical basis for realizing the vision zero.”**

CLAES TINGVALL



# Future Directions

- Adopting Human(VRU) Centric safety model
  - Policies and strategies with specific targets(long term and short term).
  - Institutions at national and state level for improved data, standards, mandatory audits, research.
  - Safety agency independent of road building agency

# THE NATIONAL ROAD SAFETY AND TRAFFIC MANAGEMENT BOARD BILL, 2010

## Functions

- For NH: *issue guidelines relating to design, construction, operation and maintenance standards for the national highways.*
- **Vehicles:** *minimum safety requirements and standards for the design and manufacture of mechanically propelled vehicles;*

# THE NATIONAL ROAD SAFETY AND TRAFFIC MANAGEMENT BOARD BILL, 2010

Functions cont.....

- *establish procedures and centres for multidisciplinary crash investigation*
- *provide for the special requirements for women, children, senior citizens, disabled persons and pedestrians relating to road safety and traffic management*

# THE NATIONAL ROAD SAFETY AND TRAFFIC MANAGEMENT BOARD BILL, 2010

creation of the **National Road Safety and Traffic Management Fund** for meeting the expenses of the Board wherein the one per cent of the revenue from the cess on diesel and gasoline allocated under section 10 of the Central Road Fund Act, 2000 for national highways and rail and road over bridges shall be credited

Safe urban road(**New urban road standards**)  
Bicycle lane and Midblock bus shelter



~1500 bicycles/h



At grade pedestrian crossing

# Safe construction zone

## Revision of IRC 55

Rumble strips for speed control near pedestrian crossing

