

Road Safety – National Development and Strategy

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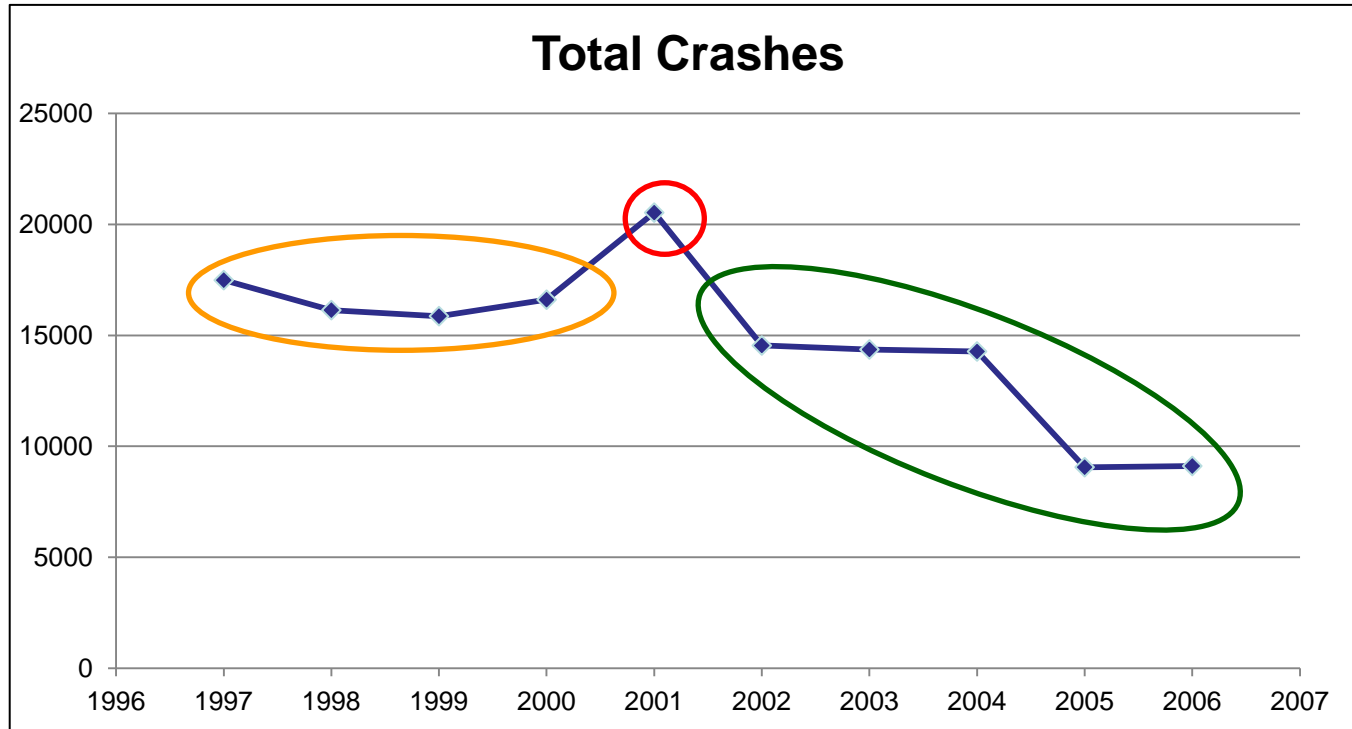
FRSC Lecture Series, November 2011

The Global Road Safety Problem

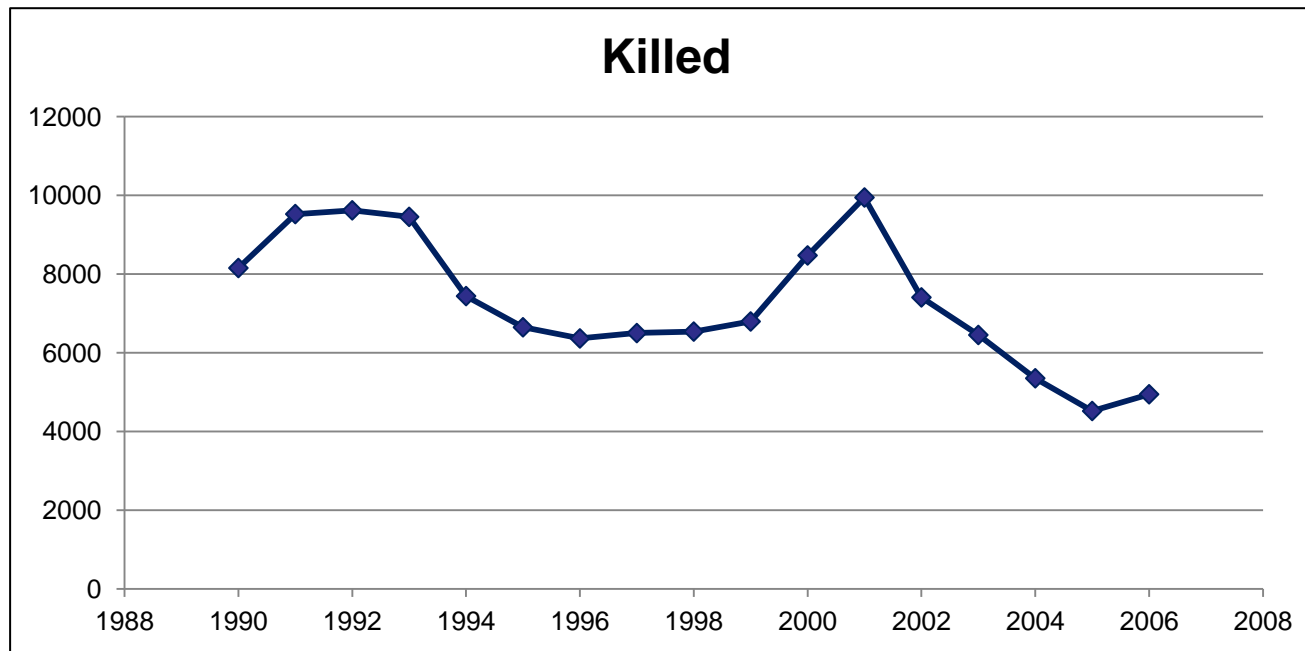
- ❖ Road crashes are a leading cause of deaths and injuries in many developed and developing countries (WHO, 2004).
- ❖ 1.2 million people around the world are killed and 50 million are injured on the roads every year – more than all the wars and terrorist attacks put together (one death every 2.7 seconds)
- ❖ In USA alone, about 42,000 are killed every year – equivalent to one 9/11 attack every month.
- ❖ Traffic deaths and injuries worldwide are forecasted to increase by 65% between 2000 and 2020.
- ❖ In low and middle income countries, they are expected to increase by 80%!



Road Traffic Accidents in Nigeria



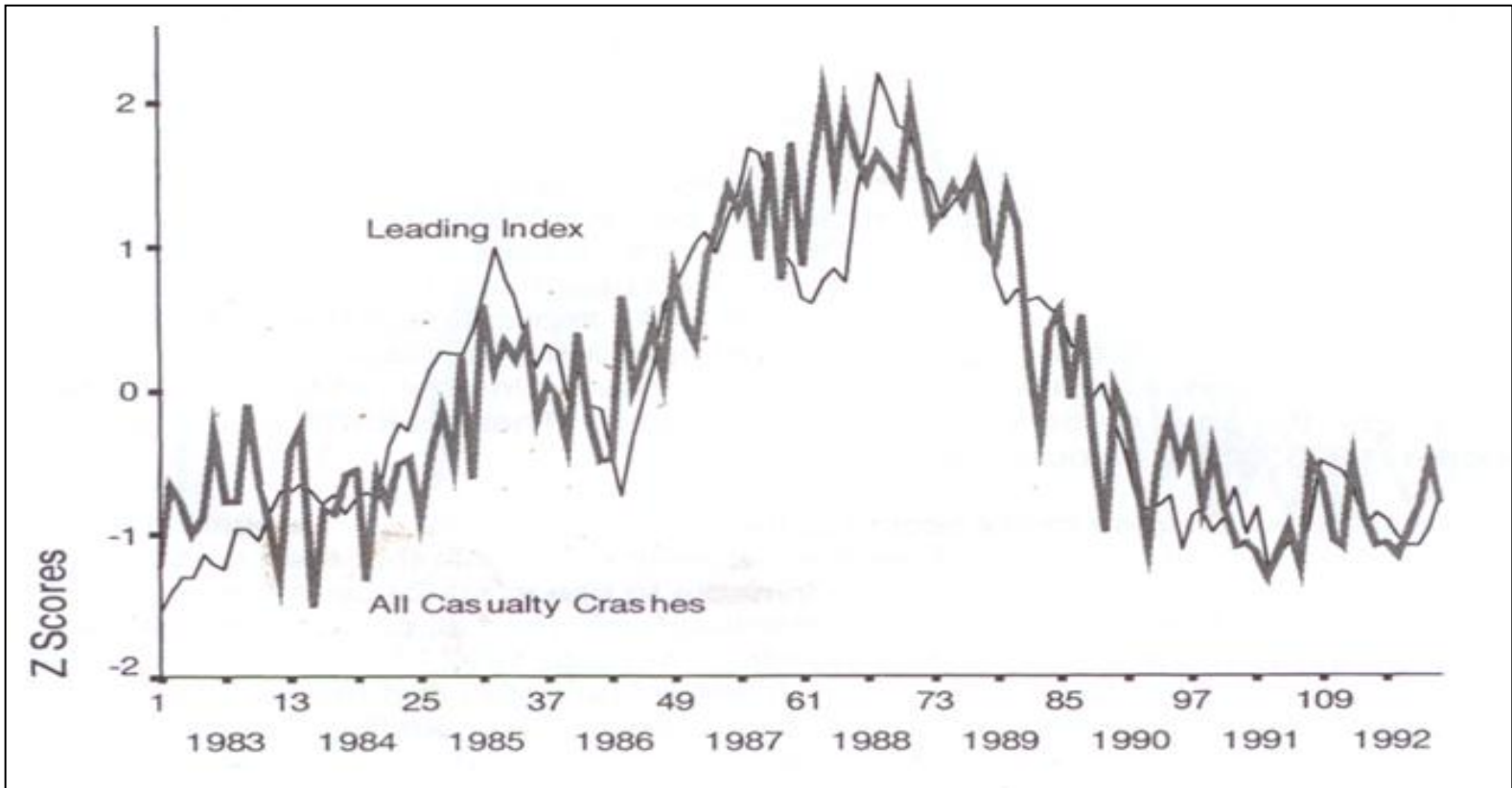
Crash Outcomes in Nigeria



- ❖ There appears to a cycle in the road casualties
 - Crashes are random events with an underlying trend
 - Crashes are affected by economic, business & political cycles
 - Always need to look at 3-5 years of data

Economic Activities and Traffic Fatalities

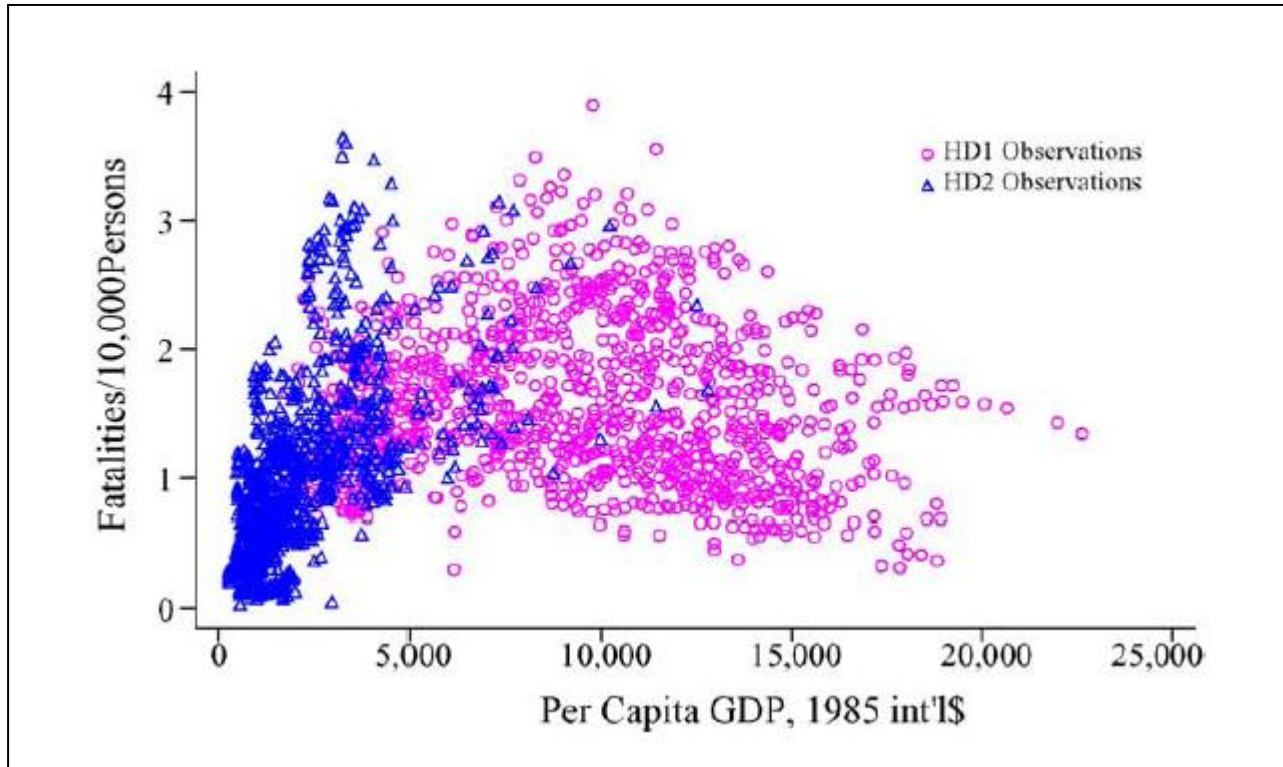
Trends in leading Index & Serious Crashes in Victoria, Australia



Economic Activities and Traffic Fatalities

- ❖ There are two major influences:
 - Economic Activity \uparrow \Rightarrow Traffic Flow \uparrow
 - Economic Activity \uparrow \Rightarrow Demand for Risks \uparrow
- ❖ Tay (2003a) argued that whereas factors like engineering and vehicle improvements have a long term trend, fluctuations in economic activities are likely to have a shorter term impacts.
- ❖ A variety of economic indicators have been used in the literature including employment (Tay, 2005a), leading index (Tay, 2003a), retail index (Tay, 2003b), new cars sales (Tay, 2001) and unemployment rate (Tay, 2005).
- ❖ Overall, there appears to an inverse relationship between economic activities and road safety (economy booming \Leftrightarrow more crashes).

Economic Development and Traffic Fatalities



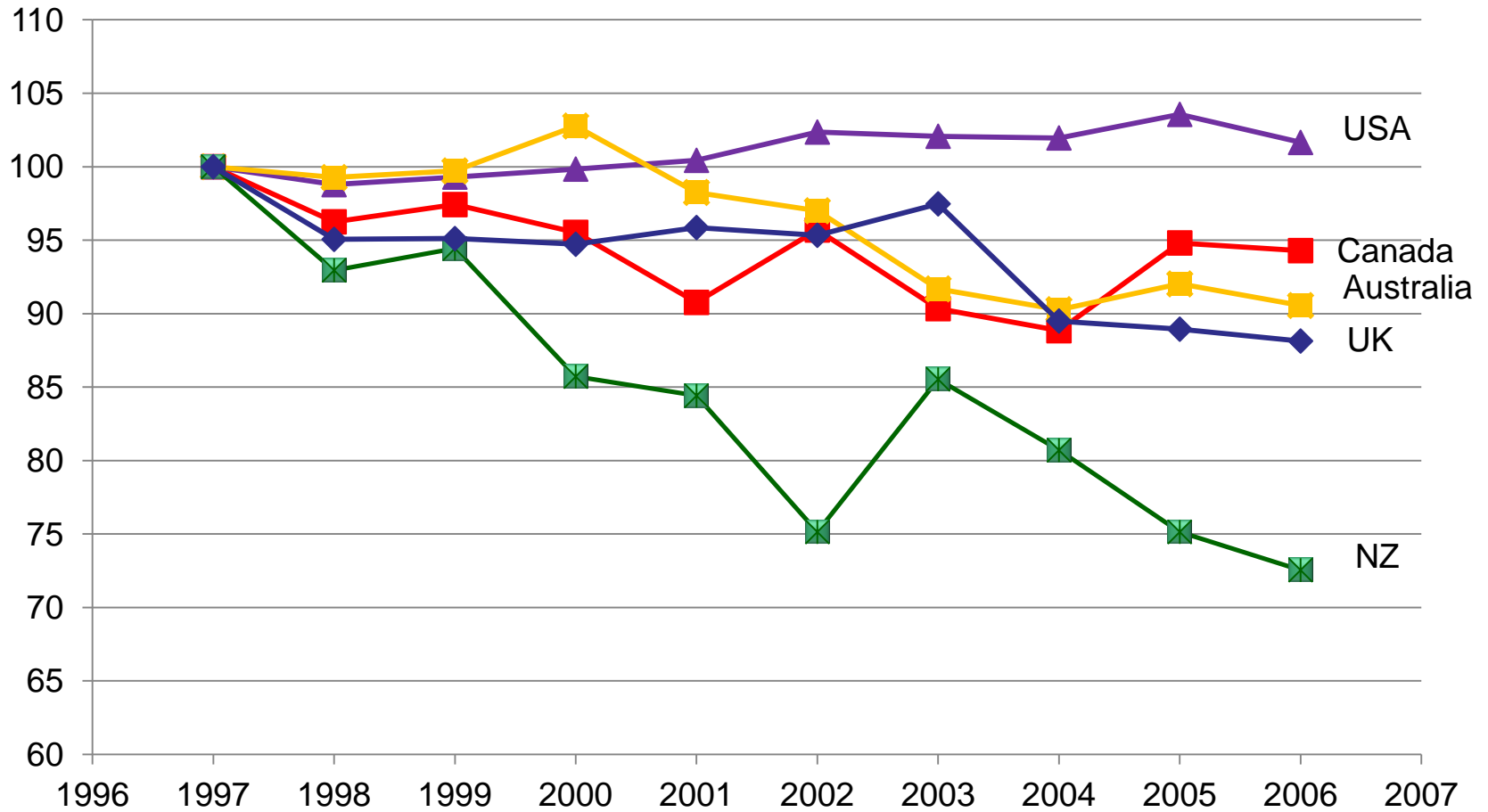
Source: Kopits & Cropper (2005); 88 countries; 1963-1999

Economic Development and Traffic Fatalities

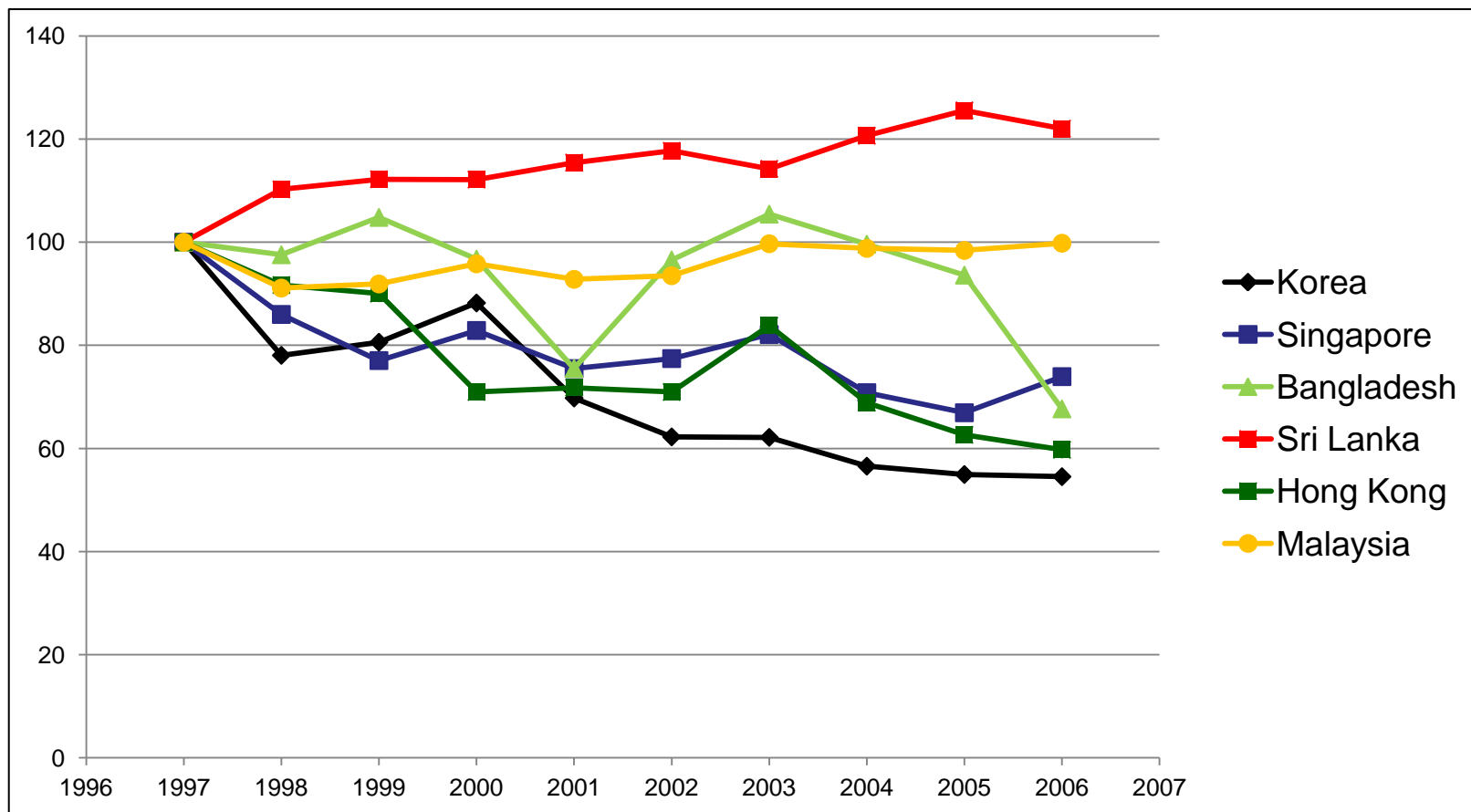
- ❖ There is a close relationship between economic development and growth in transportation demand and supply.
 - Increase in economic activities → Increase in travel
 - Better transportation services → Higher growth
- ❖ As a country develops, the rate of motorisation tends to increase
 - Increase in motorisation → Increase in traffic accidents
- ❖ In many low income countries, economic development has a very high priority → positive relationship between growth and traffic fatalities.
- ❖ As a country becomes a developed country, demand for safety increases and becomes increasingly important.
 - More investments → fewer traffic accidents and deaths



Crash Trend in Developed Nations



Crash Trend in Asian Nations



Note: 1997 (base year) = 100%

Road Safety Strategy and National Development

- ❖ Economic development and investment in road safety can and should go hand in hand!!
- ❖ Road traffic accidents extract a very cost from society – 1%-2% of GDP.
- ❖ Careful investments and strategic planning
 - Social cost can be reduced
 - Economic development can maximised





FRSC's Vision

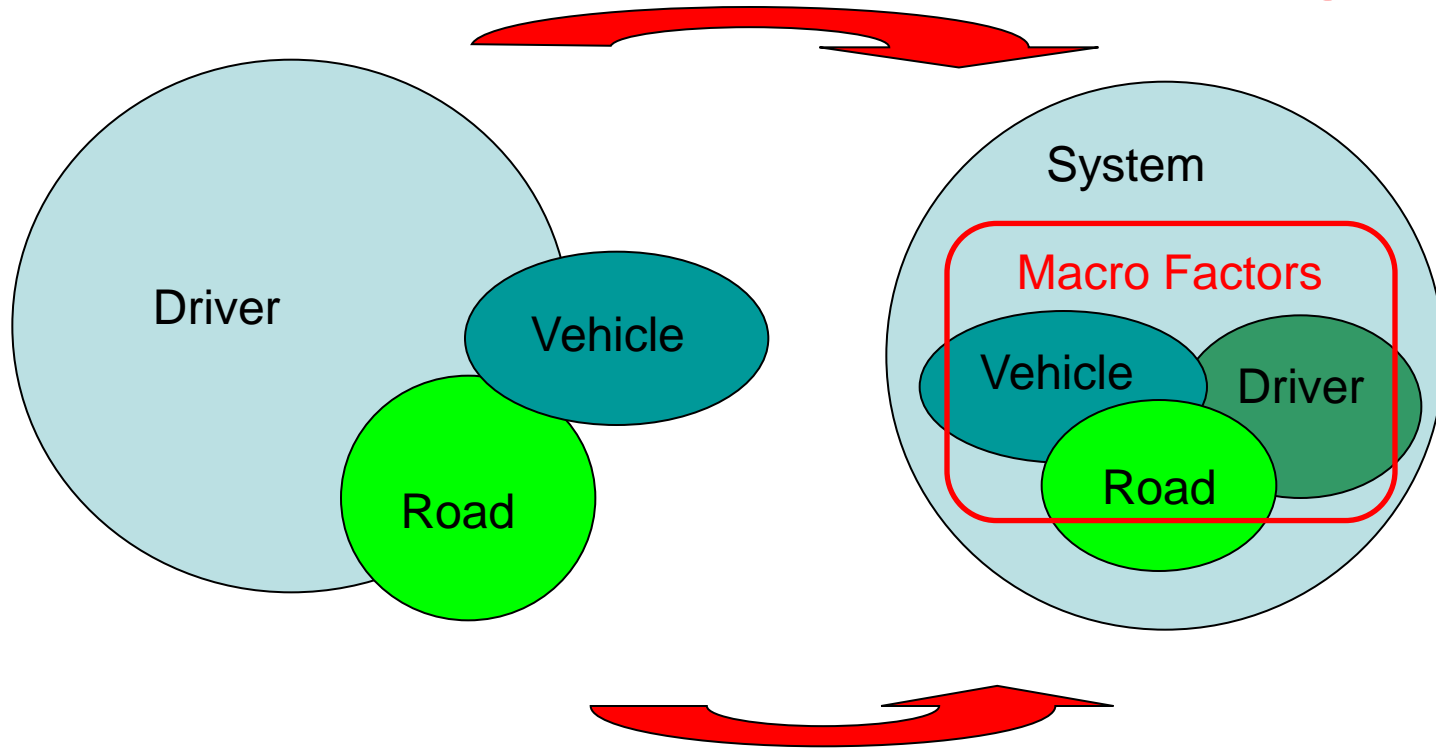
- ❖ To chart the course of Road Safety for the Nigerian Nation with a view to minimizing Road Traffic Accidents and their Attendant fatalities, injuries and sorrows to the barest minimum acceptable to an overwhelming majority of Nigerians.

FRSC's Target

- ❖ 35% reduction in accident by year 2012

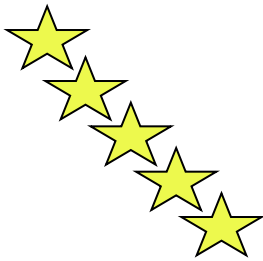
Paradigm Shift Needed

Fixing the System



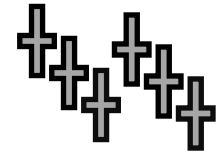
Blaming Drivers

5 Star Components but Broken System



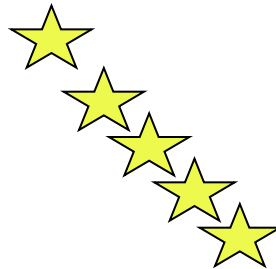
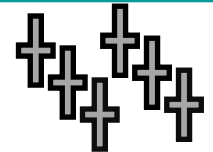
Driven on roads with 110 km/h speed limit

Crashed Tested at 60 km/h



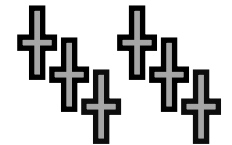
Walks on roads with 60 km/h speed limit

Survive Impact at 30 km/h

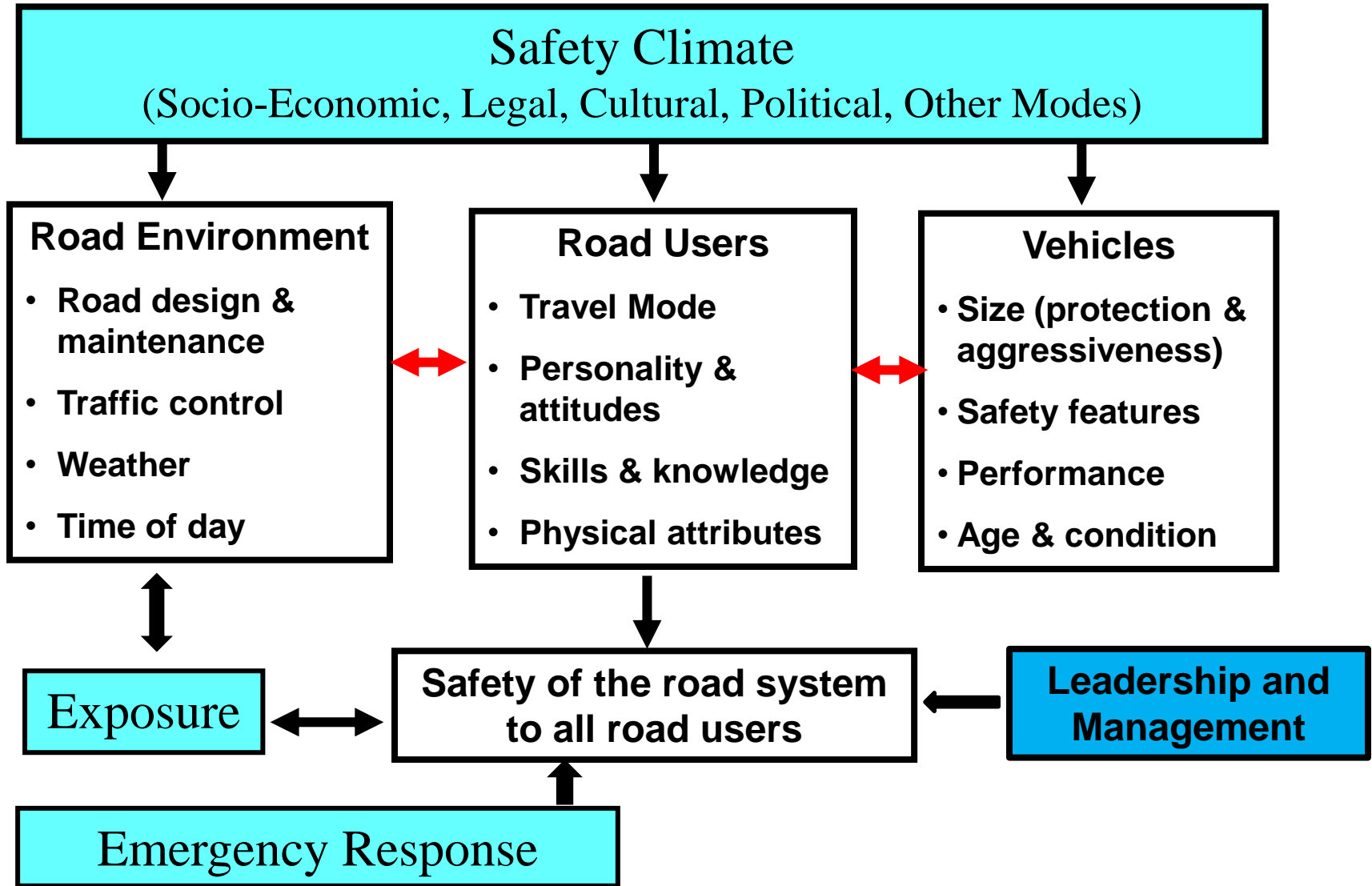


Drives on roads with 100 km/h speed limit

Sees 5-100m at night



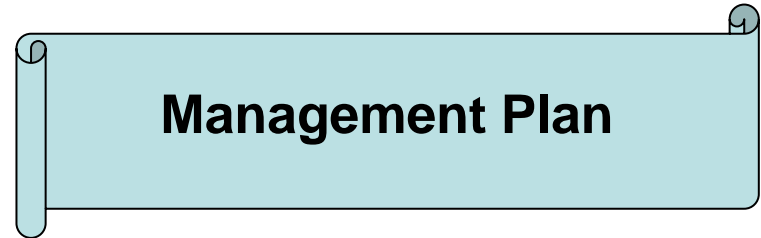
System Approach to Road Safety



Critical Success Factors

- Top leadership commitment.
- Funds to achieve safety objectives.
- Strategic highway safety plan.
- Program management.
- Organizational capacity.
- Flexibility in directing investments.
- Data driven decision making.
- Evidence-based solution.
- Comprehensive mix of solution.

Adapted from NHTSA



Political and Public Support

- ❖ High level political commitment ensures that resources are provided.
 - Parliamentary Road Safety Committee in Australian States, Land Transport Safety Authority in New Zealand, Department of Road Safety in Malaysia , Road Safety Council in Hong Kong and Singapore, etc.
 - Leadership can originate from government (top down)
 - Champion can be private groups or individuals (bottom up)
 - Besides resources, high level political commitment is also needed for legislative initiatives.
 - High level political commitment is also needed to ensure inter-agency co-operations.



Political and Public Support

- ❖ Countries that set targets performed better than countries that don't (Wong et al, 2006; Elvik, 1993, 2001, 2003)
 - Vision Zero adopted in Singapore, Malaysia, Bangladesh, etc.
 - HK's Zero Accident
 - 30-50% reduction targets
 - Road Safety Strategic Plan
- ❖ Administrators are held accountable for results of safety initiatives.
 - Reporting to ministers, legislators
 - Reporting to the advisory board
 - Reporting to the media and the public



Political and Public Support

- ❖ Public forums and conferences that brings together administrators, legislators, law enforcement, engineers, health officials, researchers, advocates, educators, and community groups for the exchange of information.
 - Road Safety Research, Policing and Education Conference in Australia and New Zealand & the Australian College of Road Safety
 - International Road Safety Symposium in Hong Kong
 - Road Safety in Developing Countries in Bangladesh, etc
- ❖ Have well designed and funded road safety campaigns that is based sound behavior change theories and social marketing models.
 - Change drivers' attitudes and behaviors.
 - Garner public support for legislation and enforcement.
 - Develop and sustain political support

Management and Planning

- ❖ Establish a strong lead agency to ensure :
 - Cooperation among stakeholders
 - Development of action plans from strategic plans
 - Monitoring and evaluation of all major programs
 - Institution capacity and training are available
 - Political and public support (include private sector)
 - Accountability to legislators and public

- ❖ More involvement from health sector
 - Health resources (national and international)
 - Reduce the burden on the health system
 - Expertise (health promotion)

Management and Planning

- ❖ Better integration of traffic enforcement into road safety
 - Focus on crash prevention – not apprehension of violators
 - Balance between general deterrence and specific deterrence
 - More reliance on theory and evidence to optimize resources
 - Integrated into the research community
 - Improvement of data collection – enforcement and collision data
 - Formal evaluation of enforcement efforts
 - Public accountability – oversight and availability of information
 - Promotion of enforcement by independent and credible sources

- ❖ Establishment of independent research centers.
 - MUARC, CARRS-Q, etc in Australia, ARI in Bangladesh and MIROS in Malaysia

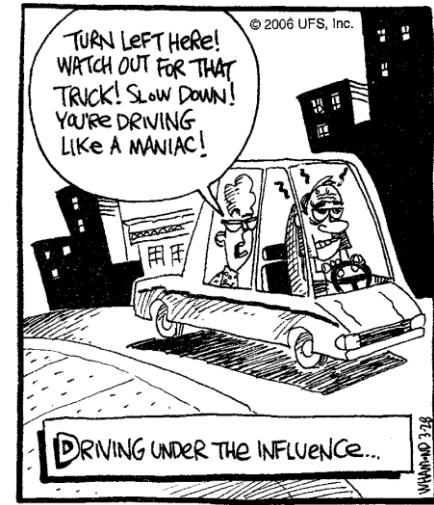




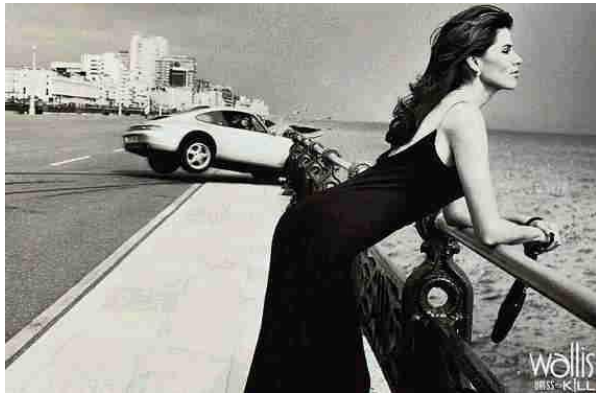
\$100 for speeding and \$250 for misleading the public



REALITY CHECK



To Err is Human To Forgive is Good Design



Management and Planning

- ❖ Transportation engineers and planners must be more pro-active .
 - Road safety audits and in-service review
 - Systematic reviews tools (CANRap and others)
 - Public safety is paramount – APEGGA
 - Accident costs should be included in design and review
 - ITE Road Safety 101
 - Beyond engineering



Management and Planning

- ❖ Driver training and education sector should be more professional.
 - Change focus from skills and vehicle handling (basic is needed) to hazard perceptions and risk management, especially for post-licensing training.
 - Implement Graduated Driver Licensing to manage risks
 - Develop new course modules using established learning theories and behavior modification models.
 - Evaluation of courses – impact of course on drivers' ability to perceive hazards and their changes in attitudes, behavior, violations and crashes.



Management and Planning

- ❖ Communication professionals should focus on changing driver behavior and not simply trying to raise awareness.
 - Need to adopt a more scientific approach
 - Campaigns should follow best practice framework (see Supreme Project, Rosebud project, GRSP, Health Communication Unit, etc)
 - Message should be designed using established behavior change models – not simply using focus group.
 - Campaigns should be evaluated for their effectiveness in changing driver attitudes, behaviors and crashes – not recall or advertising awards.



Institutional Capacity and Competency

- Understand the management of highway safety as both a complex multi-disciplinary field and one which must be understood systematically.
- Understand and explain the history of highway safety and the institutional setting in which safety management decisions are made.
- Understand the origins and characteristics of traffic safety data and information systems and their use in managing highway safety.
- Knowledge and skills to: assess factors contributing; identifying potential countermeasures; applying countermeasures; implement and evaluate the effectiveness of the countermeasures
- Developed, implement and administer a highway safety management program.

Source: TRB (2006)

Countermeasures and Evaluations

- ❖ All major or continuing countermeasures should be independently and scientifically evaluated.
 - Clearly define objectives and quantitative targets of interventions.
 - Measures of input needed for communications and enforcement.
 - Need measures of intermediate effects (network speed, prevalence of drinking and driving, etc)
 - Need estimates of safety impact for all major programs.
 - Notion that the safety impact of campaigns cannot be measured is a myth – communications professionals are not equipped to do the job – need independent researchers (see John Hopkins University framework for evaluation).
 - Enforcement effort should be measured against safety – not violation rates.



Summary

- ❖ Road crashes are a leading cause of deaths and serious injuries.
- ❖ Road crashes are largely preventable.
- ❖ Leadership & commitment are critical to the success of reducing road deaths.
- ❖ Systems approach based on science is critical to success of program.
- ❖ Professional workforce with core competency and specialized knowledge:
 - Identify contributing factors and set targets
 - Design, implement and evaluate countermeasures
- ❖ Stop blaming the road users – fix the system!!!

