



**XXIVth World
Road Congress
Mexico 2011**
Mexico City 2011.

VIET NAM ROAD TRAFFIC SAFETY STRATEGY 2020 & THE VIET NAM ROAD SAFETY PROJECT

- Name of organization:

**DIRECTORATE FOR ROADS OF VIET NAM
MINISTRY OF TRANSPORT OF SOCIALIST
REPUBLIC OF VIETNAM**

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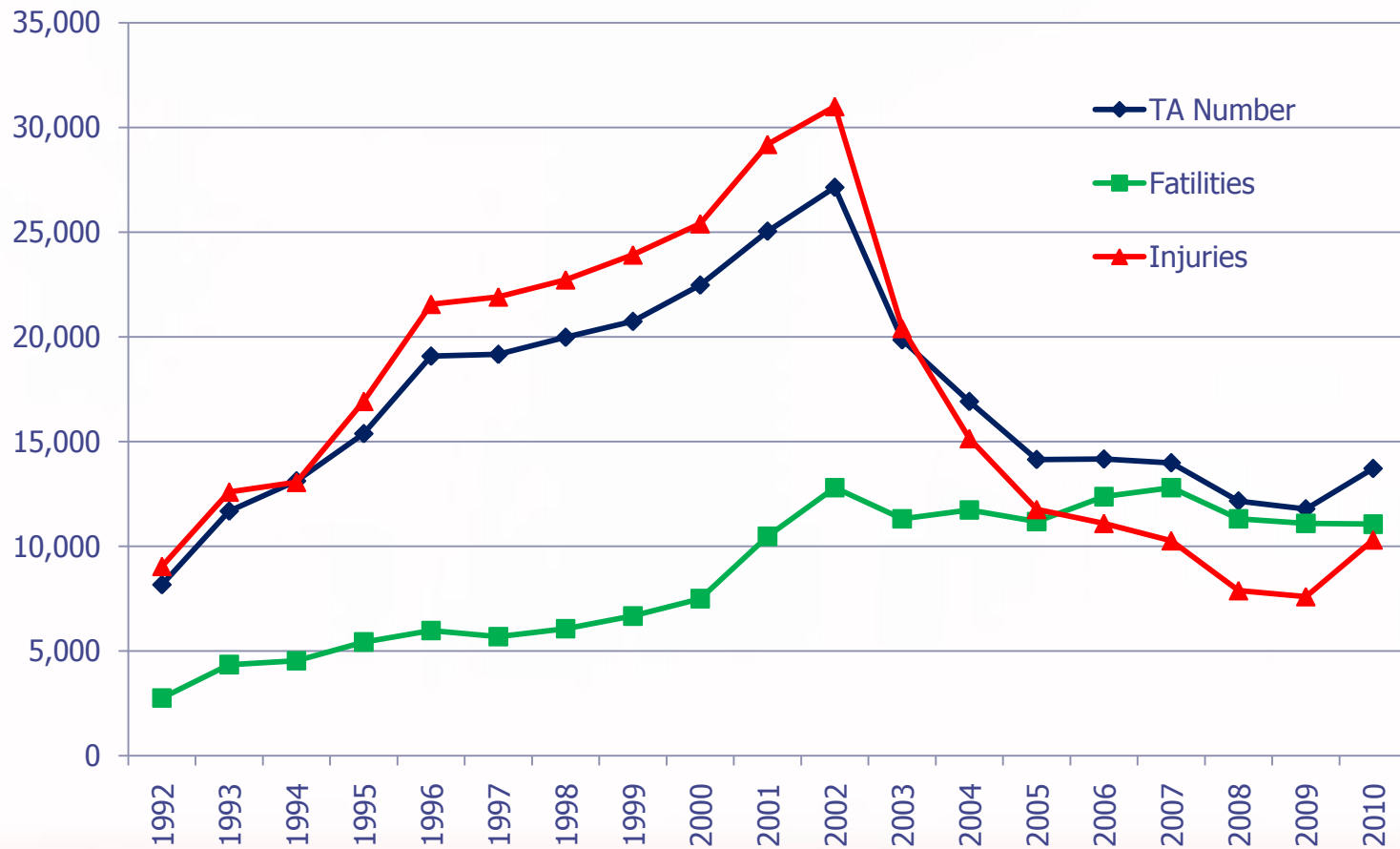
Road Safety Strategy Overview

- Rapid growth in the economy and the transport sector is straining infrastructure capacity.
- The motorcycle fleet has increased rapidly during last few years - motorcycle use is a major safety issue.
- Although the number of traffic accidents has fallen, fatalities have not - serious accidents are increasing, even in rural areas.
- Safety awareness of road users remains low.
- Traffic Safety Strategy 2020 and Vision 2030 is being implemented.



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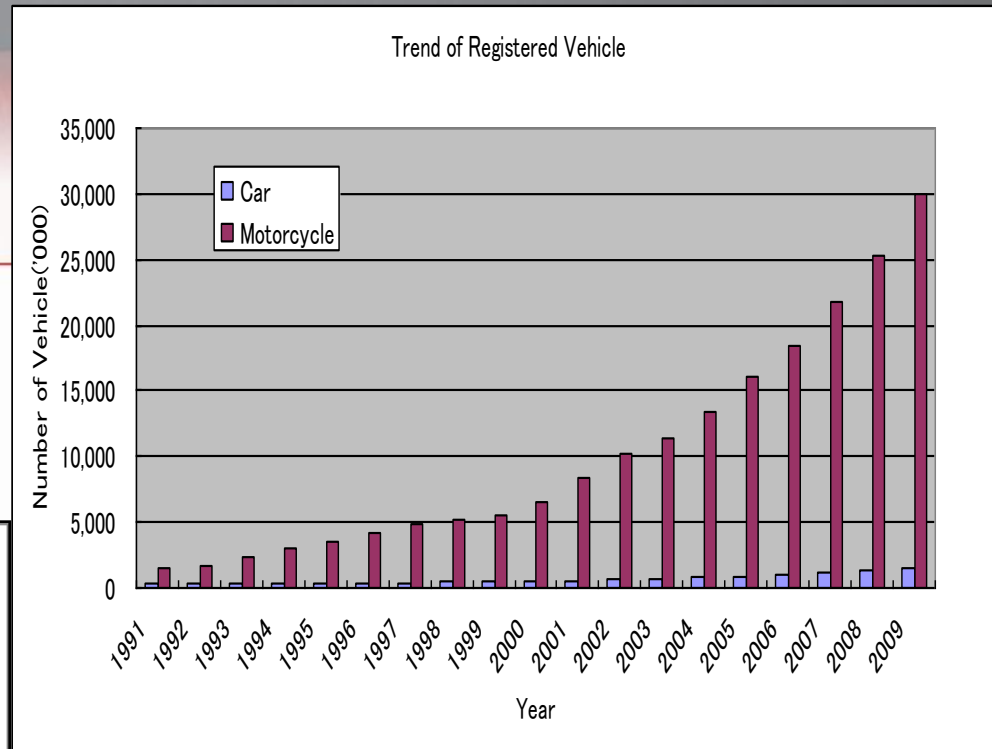
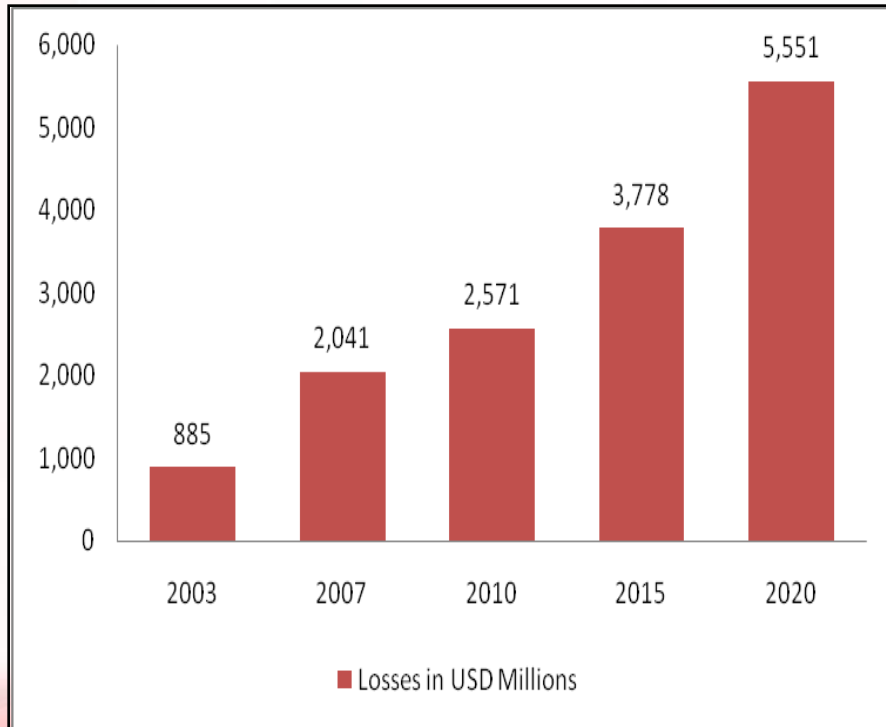
No. of Traffic Accidents, Fatalities and Injuries





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Increasing Motor Vehicles

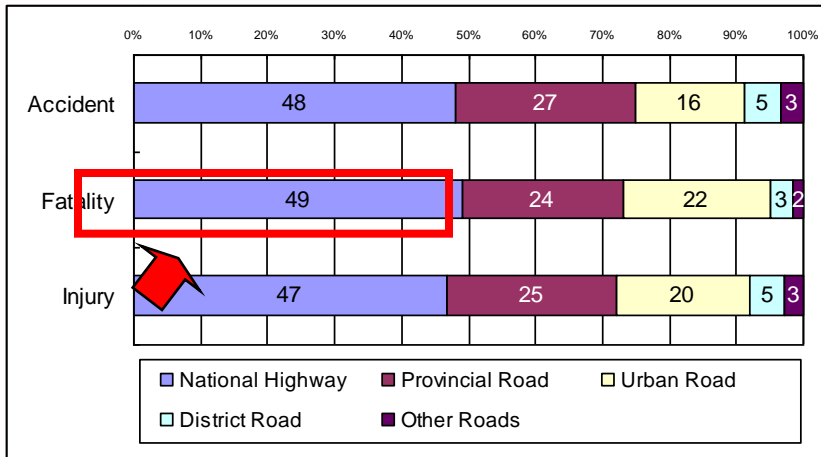


Economic losses due to Road Traffic accidents

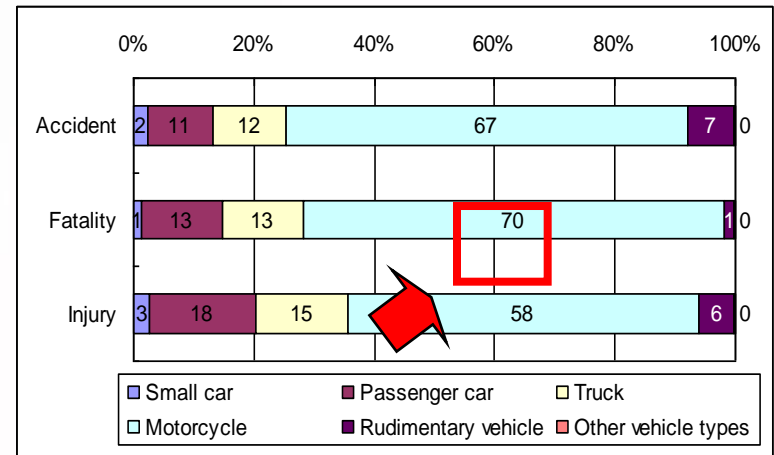


Characteristics of Road Traffic Accidents in Vietnam

Traffic Accidents by Road Class



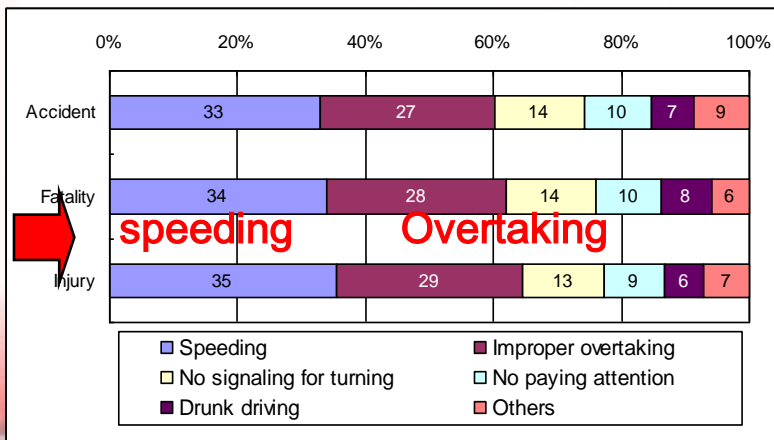
Traffic Accidents by Vehicle Type



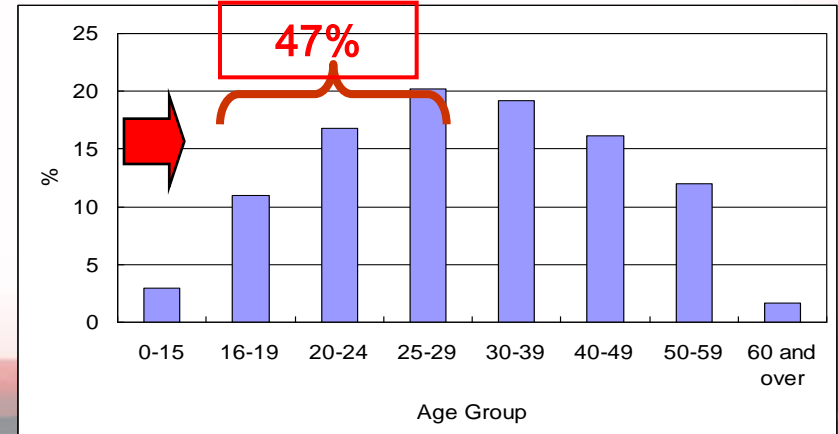
Source: MOPS

Source: MOPS

Traffic Accidents by Driving Errors



Traffic Accidents by Age Group



Source: MOPS

Source: MOPS



By 2020:

- Reduce accident deaths per 100,000 population:
13 (in 2009) to 8 (in 2020).
- Strengthen functions and capacity of road safety related agencies;
Establish sustainable measures for road safety in the long term.

Vision 2030:

- Reduce accident deaths per 100,000: **4 - 6 (in 2030).**
- Effective road safety management system; modernized infrastructure; science and technology applied to road safety; responsible attitude of road users.



- 1- Transport Infrastructure
- 2- Transport Organization
- 3- Vehicles
- 4- Drivers
- 5- Road Law Enforcement
- 6- Road Safety Education and Campaigns
- 7- National Road Accident Database System
- 8- Accident Rescue and Medical Emergencies
- 9- Institutions
- 10- ITS Application



Accident Causes

Road users



- Traffic safety awareness of road users is limited. 85% of accidents due to human error.
- Road traffic administration, management, driver management remain problematic..
- Enforcement is not consistent and not strict enough.
- Dissemination of legal knowledge and safety education unsatisfactory.

ACCIDENTS

Vehicle fleet



- Rapid pace of motorization.
- In 2009, motorcycle fleet increased by 10.5%; car fleet by 14.1% .
- Road engineering is unable to cope with traffic growth.
- Safety facilities are insufficient, of low quality, and improperly applied.

Engineering condition





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Serious Accidents





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Road Traffic Accident Causes





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Dominance of Motorcycles

- *Motorcycles*: in 2020, motorcycles will still remain the most popular and important mode of transport

Before...

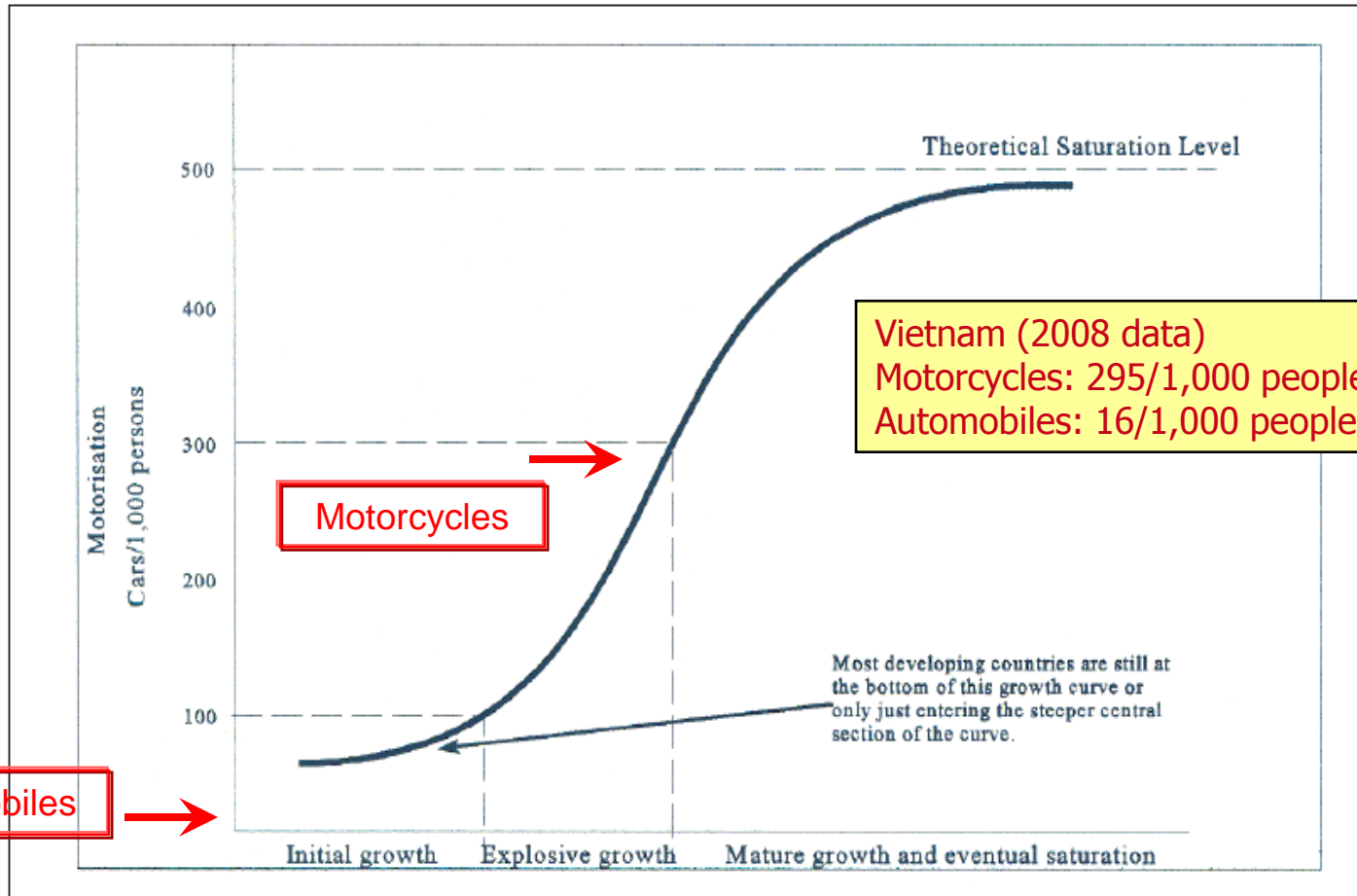


After...





MOTORISATION CURVE



Source: RETA project data.

Source: in ADB Road Safety Guidelines for the Asian and Pacific Region, Volume 2, Road Safety Trends in the Asian and Pacific Region, Fig. 2.1
Vietnam Population 86.5M – July 2008 – Vietnam General Administration of Population



4 ES IN ROAD SAFETY

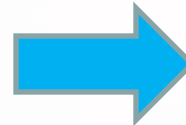
Almost all projects pay attention to one or more of the following “E”s:

1- Education

2- Engineering

3- Enforcement

4- Emergency





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Helmet-wearing program

Before...



After..





Blackspot Investigation and Treatment

Sites with accident history

Reactive => Accident reduction

Road Safety Audit

Projects and Existing Roads - accident potential

Proactive => Accident prevention



WB-funded Road Safety Project

Objective:

Reduce rate of accidents, injury, and death through physical improvement works, and institutional development to strengthen the management of road transport safety.

Participating Agencies:

- National Traffic Safety Committee
- Traffic Police
- Directorate for Roads of Vietnam (DRVN)
- Ministry of Health
- Ministry of Education

Components:

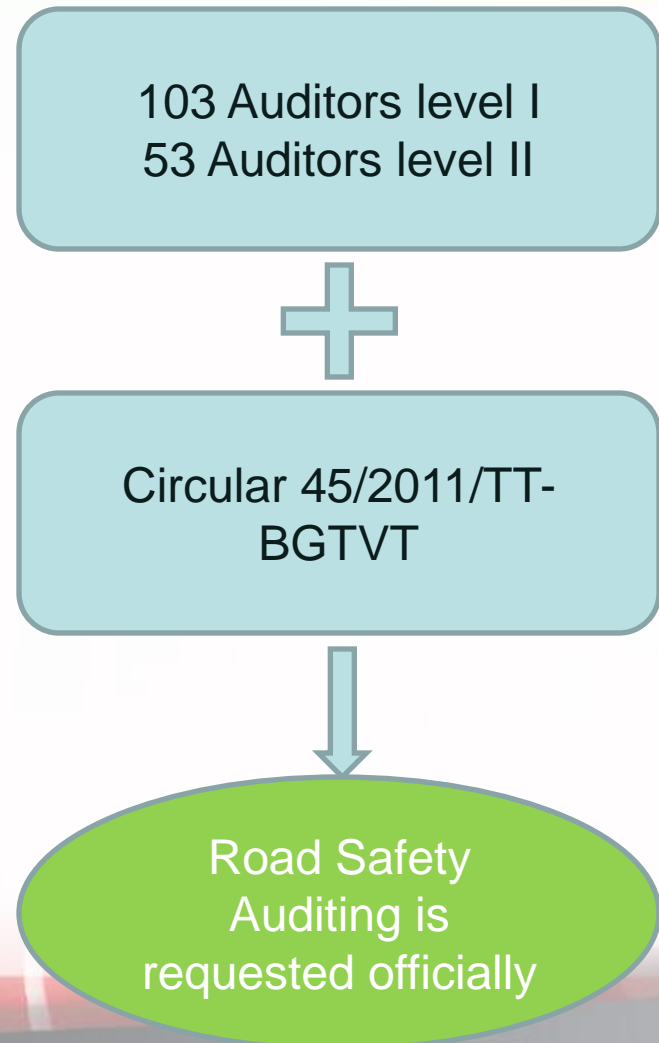
- A. Institutional and capacity building program
- B. Road safety demonstration and awareness program
- C. Road Safety Monitoring and Evaluation Program



B6 - COMPONENT

- **Road Safety Auditing**

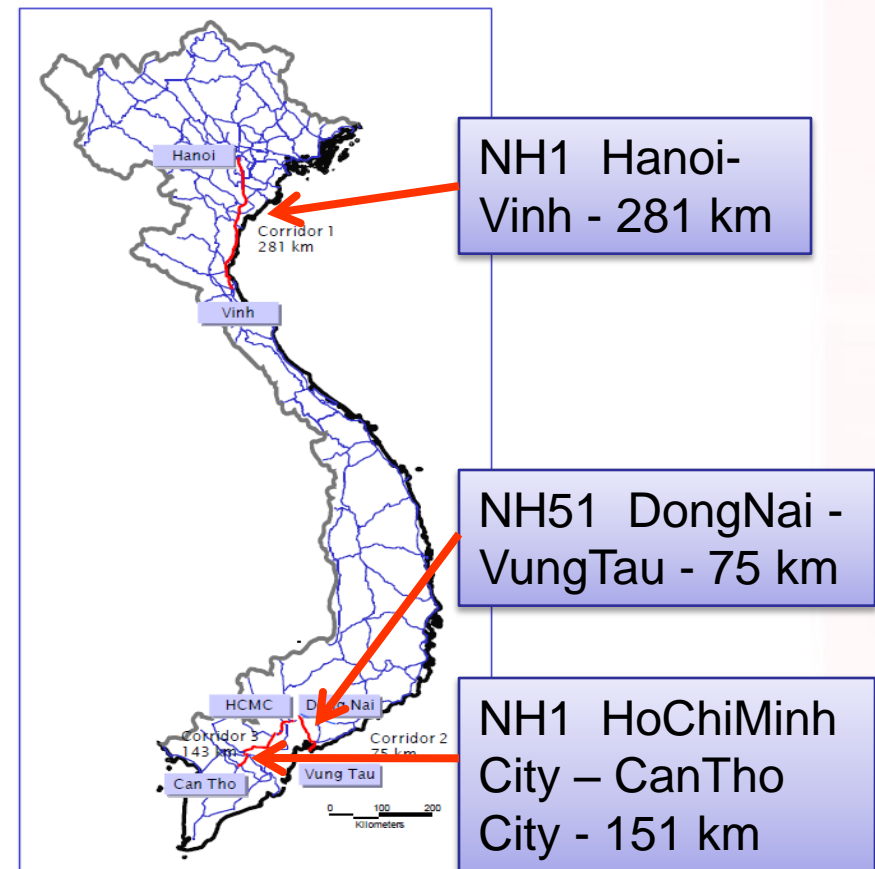
- × Legal documents regarding to road safety audit has been issued





VRSP C3: Assessment of Road Safety in 3 Corridors

- **Safety assessment:** conducted in 3 high-traffic corridors on national highways
- **31 different accident problems** were identified
- These, or very similar problems, have been found and dealt with in other countries
- **Remedial treatments** are being identified for implementation





Problem 1: Roadside Development

- **Problem:**
 - Much of the national road network has roadside development;
 - Roadside activity generates dangerous conflicts with road users.
- **Solution:**
 - In the medium term, the most important routes should be upgraded to motorway standard.
 - For remaining routes, unauthorized roadside activities should be closed; A hard shoulder, emergency lane should be provided where possible and major towns should be bypassed.



Roadside Development



Problem 2: Inconsistent Standards

- **Problem:**
 - Standard of geometric design, traffic signs, approaches to busy/hazardous areas vary considerably along each route.
- **Solution:**
 - Improve visual impact of warning and direction signs and markings;
 - Provide earlier advance warning of all hazardous areas;
 - Provide clear highway delineation at curves and hazardous areas;
 - Provide clear path through junctions and busy areas;
 - Remove all superfluous/redundant traffic signs and markings;
 - Improve carriageway skid resistance on approach to and through hazardous areas;



Inconsistent central reserve



Problem 3: Reckless Overtaking

- **Problem:**
 - Reckless overtaking by bus and truck drivers is frequently observed;
 - Drivers do not observe warning lines, crossing markings indiscriminately.
- **Solution:**
 - Provide central barrier, effective in preventing overtaking accidents, but limits turning movements.
 - Provide safe U-turn options to reduce crossing traffic.



Reckless Overtaking



Problem 4: Inadequate Junction Design

- **Problem:**
 - High accident rate at junctions;
 - Major junctions are too wide and open.
- **Solution:**
 - Simplify junctions, reduce open area and provide traffic channels via traffic islands;
 - Provide clearly defined paths through the junction; and
 - More use of traffic signals.



*Excessively wide and open
T-junction*



Problem 5: Poor Design of Curves

- **Problem:**
 - Curves take road users by surprise;
 - Tight compound curves. Curve radius may decrease through curve.
- **Recommended measures**
 - ✓ *For advance warning:* the sign face is to be mounted on a conspicuous (high visibility) backing board. This is to be supported by a secondary sign located on the final approach to the bend.
 - ✓ *For bend delineation:*
 - carriageway marking will assist delineation more if reflective paint is used;
 - the marks need to be changed from the standard module to the hazard module early on the approach to the curve;
 - hazard marks or no overtaking marks shall be extended through the entire curve length;

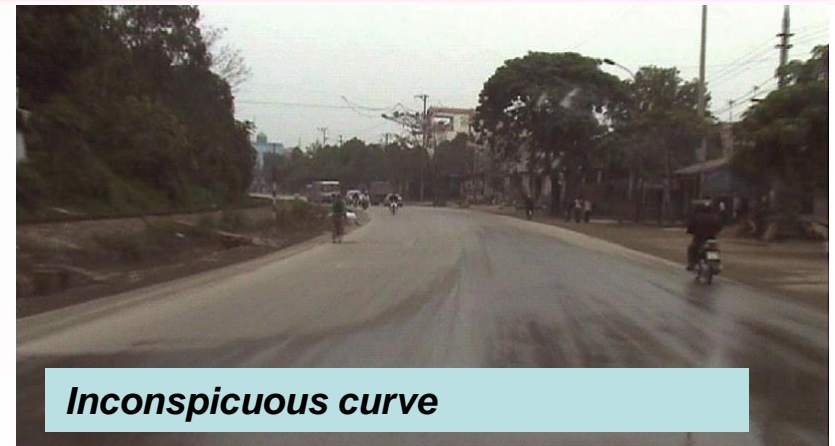


Poor design of curves

- the use of raised reflective pavement studs will greatly improve visibility of the curve at night time;
- laying rumble strips on both approaches;
- reducing the speed limit;
- providing a centre crash barrier and closing side roads.



Other Accident Problems (1)





Other Accident Problems (2)



Speed limit signs vary from town to town

BIỂU QUY ĐỊNH TỐC ĐỘ TỐI ĐA CHO PHÉP TRONG ĐÔ THỊ

LOẠI PHƯƠNG TIỆN	TỐC ĐỘ TỐI ĐA (Km/h)	
	ĐƯỜNG NHỎ CÓ BÀN PHÂN CÁCH CỎ ĐÀNH	ĐƯỜNG CÓ BÀN PHÂN CÁCH CỎ ĐÀNH
	45	50
	35	40
	30	35
	25	30



Raised kerb creates hazard



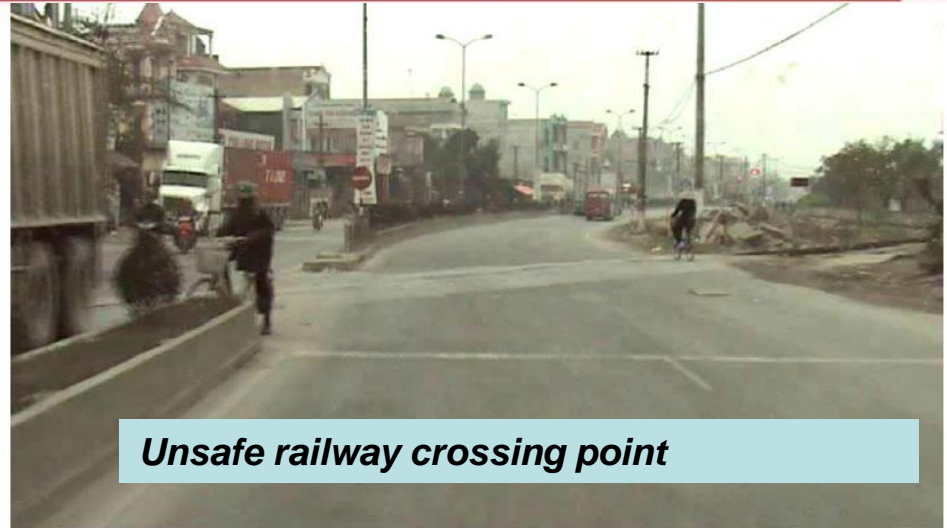
Narrow bridge



Other Accident Problems (3)



Highway runs parallel to river without crash barrier



Unsafe railway crossing point



A steep minor road joining the highway



Bus stopping on carriageway to let passenger on board



Other Accident Problems (4)

Restaurants next to the highway



Poor design of central reserve



School children straying into a high-speed carriageway



Exposed equipment for construction next to carriageway





Conclusion

- **To achieve safer roads, key principles must be followed:**
 - (i) Design for all road users, especially motorcycles;**
 - (ii) Provide early, clear and consistent information to road users;**
 - (iii) Encourage appropriate operating speed and behavior through good design;**
 - (iv) Reduce conflicts between vehicle streams, vehicle types, and between vehicles and pedestrians;**
 - (v) Make allowances for poor driving ability; and**
 - (vi) Create a forgiving road infrastructure.**

By implementing the Road Safety Strategy to 2020, the Directorate for Roads of Viet Nam will ensure a safer road network for future generations.



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Thank you very much!