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VIET NAM – NATIONAL REPORT

STRATEGIC THEME C – SAFETY OF ROAD SYSTEM

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Abstract:

Viet Nam has a road network of approximately: 93,300 km of which 23,418 km are paved and 69,882 km are unpaved (1999 est.) Economic growth is being accompanied by rapid traffic growth. Since 1990, the number of automobiles has increased two-and-a-half times and the number of motorcycles has increased eight-and-a-half times. Over 90% of the 11-12 million motorized vehicles in Vietnam are motorcycles and some 70% of reported crashes involve motorcycles. This means rapidly increasing strains on the infrastructure, the environment and the road users, with a growing toll of road crashes. Yet in comparison to those of other Asian countries, motorization levels in Viet Nam are still low, indicating that vehicle ownership will continue to increase with economic growth for many more years. As with many other low-income countries, Viet Nam is coping with growing motorization rates and an increasing number of road crashes. An estimated 95% of all vehicles on the roads are two wheelers and these contribute to 90% of all road crashes.

Traffic accident has been given special attention by societies globally and also a main challenging for all countries in the world. Similarly, traffic accident situation in Viet Nam is in same situation with developing countries. This issue is a great concern from Viet Nam's society.

Transport demand up to 2020 will increase significantly and go along with the pace of socio-economic development. Consequently, traffic accident would intend to more complex . It is urgent need to establish a national strategy on intensifying traffic order and safety situation and propose a series of priority, urgent and feasible measures to realize this strategy.

The National Strategy on Traffic Order and Safety is established based on two legal documents such as a bulletin No 05/TB-VPCP dated 5th January 2007 issued by the Government Office to announce conclusions made by Deputy Prime Minister Nguyen Sinh Hung at the National Conference on traffic safety in 2006 and document No 28/UBATGTQG dated 17th January 2007 issued by the National Traffic Safety Committee (NTSC) to announce conclusions made by Chairman of NTSC, Minister Ho Nghia Dung at the conference on urgent need for establishing the National Traffic Order and Safety on 3rd January 2007.

A. Strategic plans and approaches

Current traffic accident situation in Viet Nam[1]: The number of traffic accident, deaths and inured caused by traffic accident is growing steadily in several years. The figure in 2006 showed that traffic accident increased about 0,1%, deaths increased 10.6% in compared with the year 2005. Ratio of deaths/10,000vehicles is 6.5. Percentage of road accident is major and most serious. Main causes of traffic accident happened are including (i) *Transport users:* taking about 86.9% due to traffic law and regulation violation, especially motorbike riders, week law enforcement and traffic management; insufficient and incomprehensive traffic law education and dissemination; (ii) *Traffic vehicles:* taking about 0.9%. Number of vehicles increase significantly, especially motorbikes, out of date quality and low quality vehicles have been used; (iii) *Backward infrastructure:* unsynchronous and inadequate infrastructure, inadequate traffic safety equipment, serious violation of right of way, many illegal crossing level, lack of feeder roads and intersections, poor facilities at bus stations.

[1] Viet Nam Road Safety Strategy 2020-2030

Current situation of infrastructure

Road Network: its total length about 255,739km in which, national roads take 17,020km (6.66%); provincial roads takes 22,783 (8.91%), the rest are urban, rural and specialized roads. Road density in nationwide is 0.87km^2 and 3.45km/1000 people. Road quality is not equal among different kind of roads. % of national road's pavement is around 60%, % of high technical standards takes 41%;

Maintenance: maintenance works have not meet demand due to constrain of finance. Annual allocated budget for maintenance is only for 40% required works;

Traffic Auditing and improvement of black spots: although fairly legal documents and regulations have been promulgated, however, implementation has not been applying frequently due to constraints of finance. There are still challenging of black spot improvement task;

Right of way: violation of right of way has been happening in most of provinces due to many reasons. However, the first responsibility should be imposed to local government.

Road vehicles issues:

Number of road vehicles is growing very fast, especially motorbikes. The average growth rate of private cars and motorbikes in the period 1995-2006 was 15.96% (including motorbikes: 16.42%, cars: 10.08%), in which the % of motorbikes takes 90 %. Life cycle of cars has been managed. Road transport vehicle inspection system has meet the ASEAN's criteria platform.

Driving training, driving examination and issuing driving licenses*:*

Up to 14th March 2007, about 163 driving training centers are in operation thought out the country, 34 driving training centers are equipped the grading system. Technical facility and practical car for training are inadequate and backward. Management of drivers and training of professional traffic safety staff in commercial transport service companies have not been given priority.

Road safety coordination[2]

The government established the National Traffic Safety Committee (NTSC) to lead and co-ordinate the implementation of a national strategy and sees road safety as a priority. The NTSC is responsible for coordinating road safety among various ministries and for the development and implementation of a national road safety programme entitled the National Programme for Traffic Safety (NPTS). Information from a World Bank financed road safety study in the late 90s provided important input into the Programme.

A major road safety project has been agreed on between the government and the World Bank about a major road safety project. Global Road Safety Partnership (GRSP) has been working with the World Bank in the development of the project and in facilitating cooperation with other sectors. It is envisioned that GRSP will support the programme of the NTSC by developing road safety initiatives in partnership with the private, public, and

[2] The National Traffic Safety Committee (NTSC)'s organizational structure and functions,

civil society sectors as part of the proposed World Bank programme. The NTSC would be responsible for coordinating the resulting multi-sector improvement programme.

Numerous development funding agencies are active in Viet Nam. With respect to road safety, the World Bank is the primary such entity with a proposed major project under discussion (see above). The Asian Development Bank supports a regional technical assistance project for the ASEAN countries (Viet Nam is a member of ASEAN), which aims to share good practice in road safety throughout the region. The Swedish International Development Agency (Sida) is also active in road safety through its work with the health sector, the national injury reduction strategy, and safe communities work.

In Viet Nam, NGOs and other civil society organizations such as the University, and radio stations are also working in road safety. The Asia Injury Prevention Foundation (AIPF), the Viet Nam Red Cross Society and Handicap International, Belgium, (HI) are particularly active.

MEASURES TO ENSURE TRAFFIC ORDER AND SAFETY TILL 2020[3]

Views and targets

Views on measures to ensure traffic order and safety

In order to ensure the whole transport system works simultaneously and smoothly for meeting demand of socio-economic development, enhancing security and defense, serving the integration of the country to the world, establishing and sustaining social security, ensuring traffic order and safety to all road users and reducing number of traffic accident, the Government's agency and road users should be the ones who take responsibilities. Thus, all appropriated measures of traffic order and safety shall be carried out continuously, frequently and insensitively to sustain the course of traffic order and safety by all sectors in the society.

Targets:

- Raising awareness and encouraging self-awareness of traffic order and safety of road users;
- Intensifying propaganda and education on Traffic Law aimed at raising awareness on traffic safety;
- Improvement of road transport service quality control;
- Strengthening capacity of traffic safety enforcement forces;
- Improvement of road auditing capacity and traffic management;
- Finalizing the legal frameworks and related legal documents on traffic order and safety;
- Intensifying responsibility of the state management authorities and focusing on human resource development with the aim of enforcing order and traffic safety
- Annual targets could be reached including deaths caused by traffic accident from 5-7%, deaths/10,000 vehicles decreasing from 6.5 to 4.5 in the year 2010;

[3] Viet Nam Road Safety Strategy 2020-2030;

This strategy shall be applied in nationwide and in 5 sub sectors with comprehensive set targeted in state management in traffic order and safety, infrastructure and road users from current date to the year 2010.

2.1. Measures applied in infrastructure

Aspects regarding to Directorate for Roads of Viet Nam[4]

Road infrastructure:

- ✓ Implementation of the approved Transport Development Strategy in period 2006-2010;
- ✓ Implementation of violated road right of way acquisition plans;
- ✓ Approval, implementation and supervision of the agreed deals on acquired illegal level crossings, feeder roads and access roads from resident and industrial areas; designed appropriated connection points among above mentioned road to the national road network in compliance with the master plan of socio-economic development;
- ✓ Adjustment of existing illegal connecting road to the national road network
- ✓ Improvement and upgrading the existing black spots;
- ✓ Providing sufficient auxiliary facilities for preventions of traffic accident at the dangerous locations such as mountain passes or slope;
- ✓ Given priority for investment of traffic order and safety engineering on the high density traffic accident happened roads; applying advanced technology;
- ✓ Establishing the master plan for break services for long-distance transport vehicles;
- ✓ Establishing the operational and monitoring manual of traffic safety; allocating funds for traffic safety audit;
- ✓ Paying attention in new road design phase to reverted lanes for motorbikes;

B. The transfer of knowledge into practice: WB Viet Nam Road Safety Project[5]

1. Project's overview:

The Road Safety Project aims at reducing the rate of accidents, injury, and death associated with road transport, through physical improvement works, and institutional development to strengthen the management of road transport safety. The project has three components: Institutional and Capacity Building Program, Road Safety Demonstration and Awareness Program, and, Road Safety Monitoring and Evaluation Program. The first component will provide technical assistance within the implementation of the project to strengthen the management, and technical capacity of the National Traffic Safety Committee (NTSC) Executive Office, and the Traffic Safety Project Management Unit (TSPMU), and will further prepare a national road safety strategy. The second component will assist the government in developing, and implementing comprehensive, integrated safety programs, which includes the enhancement of road safety auditing processes, and funding of black spots treatments, for three high-risk road corridors. In addition, a program of road user education, traffic safety enforcement, and emergency service preparedness along the three demonstration corridors will be implemented. Finally, the third component will support the development of a national road accident database system, to be used initially by the Directorate for Roads of Viet Nam (DRVN) to enhance the identification and treatment of black spots, and by the Ministry of Public Safety to improve enforcement strategies and priorities.

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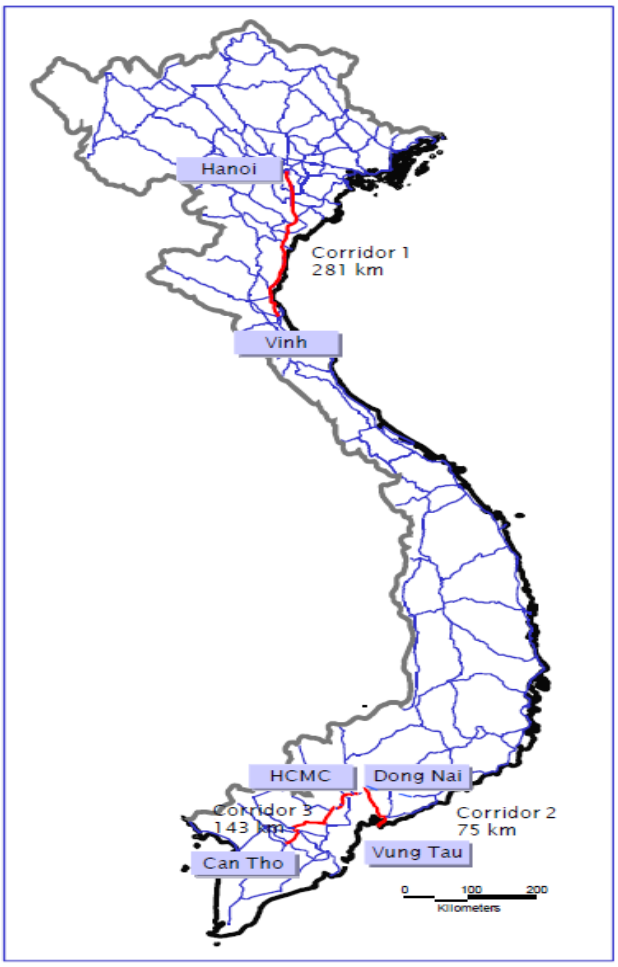
[4] Directorate for Roads of Viet Nam – State management functions and organization – see attached 1: organizational structure of DRVN

[5] www.worldbank.org/external/projects

2. Component 2: [6] assist the government in developing, and implementing comprehensive, integrated safety programs, which includes the enhancement of road safety auditing processes, and funding of black spots treatments, for three high-risk road corridors.

Three demonstration Corridors included in the project are shown in figure 1.

- Corridor 1: NH 1 between Hanoi and Vinh, km 181+680 to km 463 (281km);
- Corridor 2: NH 51 from Dong Nai province to Vung Tau, km 0 to km 75 (75km);
- Corridor 3: NH 1 between Ho Chi Minh City and Can Tho City, km 1924+815 to km 2068 (151km);



Identified Problems

There are about 31 separated accident problems, in two cases a variation is identified. The problems range from ineffective carriageway markings, inconspicuous warning signs, work practice on the highway to an inconsistent use of standards on the routes. In the majority of cases there or very similar problems have been found and dealt with in other countries. The identified problems are common, they occur repeatly along the corridors, they are

[6] Viet Nam Road Safety Project, Component C2, Consia Consultant

treatable and they are manageable. In this report, few problems are introduced then following by recommendations to improve such problems.

1. Road side development

Figure 2: Road side development

Problems: Much of current national road network now has roadside development; several unauthorized restaurants have set up business adjacent to the highway; families have set up home and in some cases are running small businesses from these properties; highway passes through several market places; informal tracks and paths are being connected directly to the main carriageway.... This creates considerable activity that generates conflict immediately next to a national highway;

Recommended measures:

- In the medium term, the standard for the more important national highways must be upgraded to motorway levels. This will provide a series of high capacity roads designed to carry fast motor traffic safely of which each direction would be two, three or four lanes;
- Grade separated interchanges that connect to the local road network;
- Certain types of transport would be banned, typical pedestrians, bicycles, leaner drivers, horses agriculture vehicles, underpowered vehicles and invalid carriages;
- Unauthorized business restaurants should be closed; A hard shoulder, emergency lane should always be provided.

2. Consistency of standards on the routes

Problems: Standards of geometric design, traffic signs, approaches to busy/hazardous areas vary considerably along each route. Inconsistent standards will be contributing to many accidents along the route;

Figure 3: Inconsistency of centre reserve

Recommended measures:

- Improve the 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 super flour/redundant traffic signs and markings;
- Improve skid resistance of the carriageway on the approach to and through hazardous areas;

3. Overtaking on the road

Figure 4: Hazardous overtaking

Problems:

- Several incidents involving a drive of a bus or truck recklessly overtaking other vehicles are observed. In many cases two or more vehicles came close to contact risking a major accident;
- Drivers are not observing continuous single while (no overtaking) lines, they are seen crossing these markings indiscriminately;

Recommended measures:

- Provide a center crash barrier. Whilst a continuous centre crash barrier is effective us preventing overtaking accidents the design engineer must consider local turning movements. Traffic from side roads will not be able cross the highway to turn left and in some cases this will divert additional traffic onto sections that they would not otherwise have used.

4. Junction Design

Figure 5: Excessively wide and open T-junction

Problems: High rates of accidents occur at junctions because that is where the most conflict occurs. The majority of accidents occur on the approach to the junction or in the junction. The common problem of major junctions on the route in Viet Nam are excessively wide and open. This leads to unregulated road user movement in the junction area, this result in unnecessary accidents.

Recommended measures:

- Closing up the junction by reducing the open area and providing a series of traffic channels by forming raised traffic islands us highly effectives. Increased the use of modern traffic signals that include sophisticated programmes that fluctuated to meet variation in traffic demand are safer and manage traffic more efficiently.
- Conflict in the junction area can be reduced by considering if any of the turning movements can be prohibited. This can be often be achieved when there are other junctions close by;
- The main carriageway approaches to the junction must be carefully considered. Early advance junction warning signs must be provided with secondary warning sign. Map type signals that show the layout of the junction ahead have been shown to be better understood by road users and they are cost effective, consider including retro reflective sign faces for added night time visibility. Carriageway warning marks with lane direction arrows will also help to advise road users that they are entering the final approach to the junction area.

5. Design of curves

Figure 6: Poor conspicuity of curve

Problems: Bends often take road users by surprise and it is no surprise that larger numbers of accidents occur at bends. A further problem is found at sites with tights compound curves. These can be particularly problematical at locations where the curve radius decreases, sharpen as the drive progresses round the curve.

Recommended measures

- Skid resistance is always important on the assumption that the skid resistance is satisfactory there are two points that are vital in achieving safety at bends including a clear early advance warning and clear delineation of the curve itself. Both points are very importance when considering safety at bends in night time conditions.

- 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: (i) carriageway marking will assist delineation more if reflective paint is sued; (ii) the marks need to be changed from the standard module to the hazard module early on the approach to the curve; (iii) hazard marks or no overtaking marks shall be extended through the entire curve length; (iv) the use of raised reflective pavement studs will greatly improve visibility of the curve at night time; (v) laying rumble strips on both approaches; (vi) reducing the speed limit and (vii) providing a centre crash barrier and closing side roads. However, flattening curves can be effective in reducing these accidents but is costly and should only be considered if other measures are unlikely to achieve a real benefit.

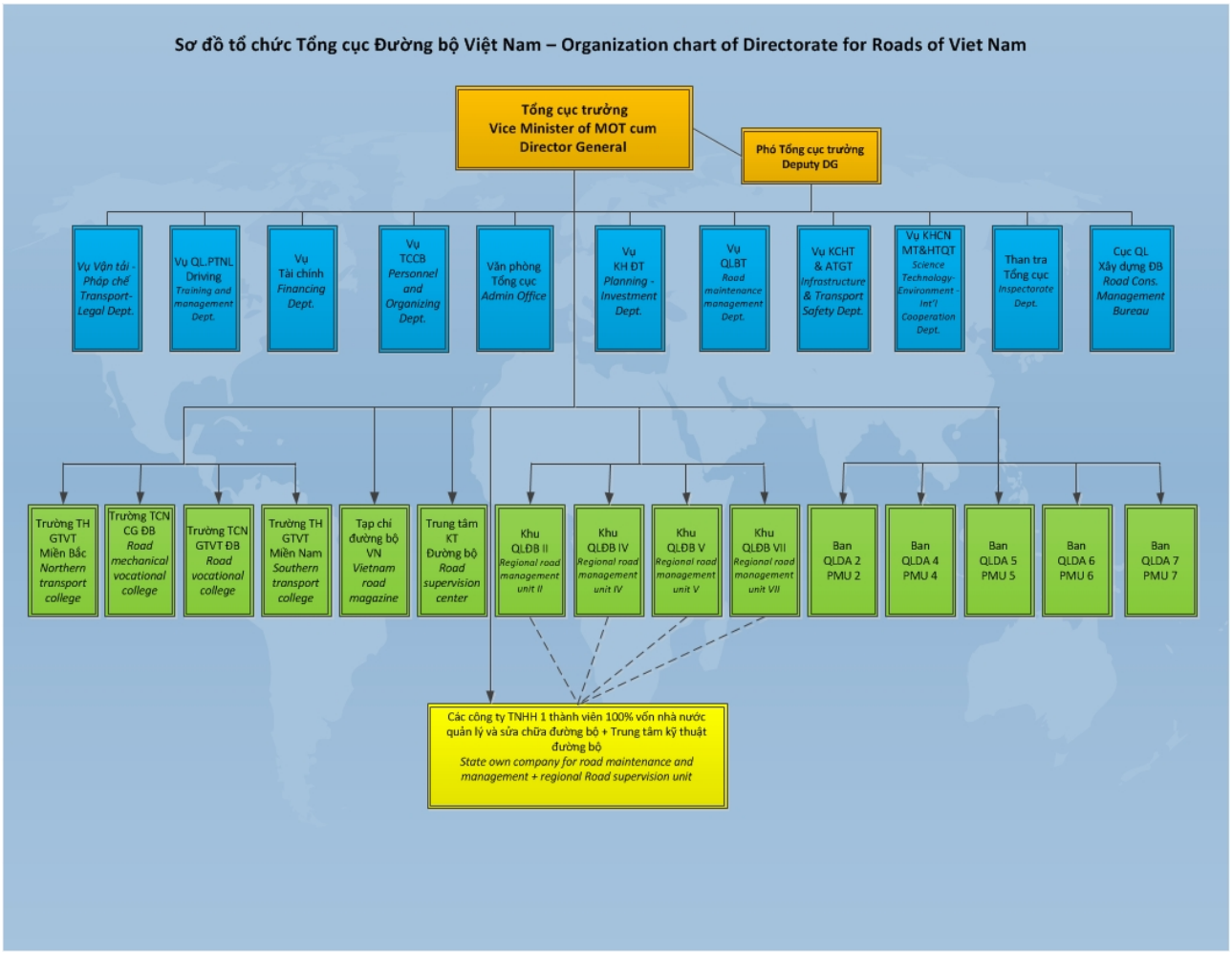
Conclusion:

In order to achieve a safer road, the key principles must be considered including (i) designing for all road users; (ii) provide early, clear and consistent message to the driver; (iii) encouraging appropriate speeds and behavior by design; (iv) reducing conflict between vehicle stream or vehicle types, or vehicles and pedestrians; (v) making allowances for the bad or impaired driver and (vi) creating a forgiving road. Among measures indicated in the Viet Nam Road Safety Strategy up to 2020, DRVN shall make our best efforts to ensure a safer road system for our future generation.

Attachment 1

Directorate for Roads of Viet Nam

Organization chart



References:

1. Directorate for Roads of Viet Nam – State management functions and organization – Prime Minister Decision No 107/QD-TTg dated 26/8/2010;
2. Viet Nam Road Safety Strategy up to 2020;
3. The World Bank project on Viet Nam Road Safety – Component C2: Demonstration Corridors Monitoring and Evaluation; Assessment of corridors- Final report , pp 12-18; Consia Consultant
4. http://www1.mt.gov.vn/ykienatgt/default.asp, NTSC;
5. www.worldbank.org/external/projects;