

## Ex-ante Evaluation

### **1. Name of the Project**

Country: The Socialist Republic of Vietnam

Project: Northern Vietnam National Roads Traffic Safety Improvement Project

(Loan Agreement: March 30, 2007; Loan Amount: 6,557 million yen; Borrower: The Government of the Socialist Republic of Vietnam)

### **2. Necessity and Relevance of JBIC's Assistance**

The high incidence of traffic accidents is a social problem in Vietnam. Looking at accidents by mode of transportation, almost all transportation-related accidents are road traffic accidents, which account for 97.0% of the deaths, 96.1% of the accidents, and 97.9% of the injuries (2005). Road accidents drove fatalities up from approximately 2,755 to around 12,800, an increase of about 4.6-fold, over the 10-year period from 1992 to 2002. Although a declining trend was subsequently seen, road traffic-related deaths remain above 11,000 every year. Comparing the percentage of annual accidental road traffic deaths in Vietnam with other ASEAN countries as of the year 2000, Vietnam was third in terms of the ratio to vehicle number (6.6 persons/10,000 vehicles) and fourth in terms of the ratio to population (1.3 persons/10,000 persons).

According to the National Traffic Safety Program (2001-2005) drawn up by National Traffic Safety Committee (NTSC), the main causes of road traffic accidents are road users' disregard for traffic laws, the government's (particularly the local government's) lack of awareness and capacity to deal with traffic safety management, inadequate punishments, inconsistencies and delays in publishing regulations, standards, rules, and laws, lack of the necessary techniques, equipment, and materials to enforce traffic safety, lack of educational activities and information dissemination to inform the general public about traffic laws, and defects in the infrastructure (mixing of vehicles, bicycles, and pedestrians; lack of traffic signs, etc.).

Recognizing traffic safety as a national social problem, the Vietnamese government established NTSC in 1997, drew up the National Traffic Safety Program (2001-2005), and has conducted development of infrastructure at sites where accidents are frequent, and established a system, laws and ordinances for strengthening enforcement and conducted educational activities.

NTSC is in the process of preparing the National Traffic Safety Strategy (2006-2016), and this strategy is scheduled to continue to put priority on measures for the "3E's" necessary for traffic safety (engineering, enforcement, and education) as well as a fourth "E" (emergency (medical care)) and will also put priority on safety measures for roads, particularly on national roads. Among the national roads, particularly National Roads No. 1, 5, 10, and 18 which have already been developed and where traffic volume is increasing, are said to be high-priority for strengthening traffic safety. Among these, because National Road 1 is already the target of the World Bank's Vietnam Road Safety Project, this project will target National Roads 5, 10, and 18. Additionally, in northern Vietnam where these roads are located, National Road 3 is a trunk line that connects Hanoi to other cities, similar to National Roads 5 and 18. Because it has almost the same traffic volume as National Road 18 and its traffic volume is expected to increase, it is included in this project as well.

In JBIC's Medium-Term Strategy for Overseas Economic Cooperation Operations, a priority area for assistance is "a foundation for sustained growth," and assistance is to be provided for economic

infrastructure such as transportation which is a basis for socio-economic activities. Promotion of strengthening of road traffic safety contributes to the realization of effects from road infrastructure development.

Thus given the above, JBIC's assistance for this project is highly necessary and relevant.

### **3. Project Objectives**

The project will seek a significant reduction in traffic accidents and alleviation of damages along four national roads (National Roads No. 3, 5, 10 and 18). Through better facilities, improved and increased traffic safety education, and stricter law enforcement, the project contributes to enhancement of road conditions as well as the quality of life for residents in the proximity of the targeted roads.

### **4. Project Description**

#### (1) Target Area

National Road No. 3, Hanoi to Thai Nguyen

National Road No. 5, Hanoi to Hai Phong

National Road No.10, Ninh Binh to Quang Ninh

National Road No. 18, Bac Ninh to Quang Ninh

#### (2) Project Outline

(1) Construction of traffic safety facilities (improvement of intersections, installation of road marks, signs, and guardrails, installation of center medians, etc.)

(2) Provision of materials and equipment for traffic safety educational activities (materials and equipment for campaigns at construction sites of traffic safety facilities; materials and equipment for training school teachers, etc.)

(3) Provision of materials and equipment for strengthening traffic enforcement (materials and equipment used for enforcement at the construction sites of traffic safety facilities, etc.)

(4) Consulting services (detailed design, bidding assistance, construction supervision, preparation of training plan, assistance with implementation of training, etc.)

#### (3) Total Project Cost/Loan Amount

7,773 million yen (Yen Loan Amount: 6,557 million yen)

#### (4) Schedule

January 2008 – June 2013 (66 months)

The project will be completed when the consulting services are completed.

#### (5) Implementation Structure

(a) Borrower: The Government of the Socialist Republic of Vietnam

(b) Executing Agency: NTSC

(c) Operation and Maintenance System: Vietnam Road Administration and People's Committees of each province

(6) Environmental and Social Consideration

(a) Environmental Impacts/Land Acquisition and Resettlement

(i) Category: B

(ii) Reason for Categorization: This project is not likely to have significant adverse impact on the environment because it is not a large-scale project in the road sector, its adverse impact on the environment is not considered significant, and it does not have characteristics likely to exert impact nor is it located in a sensitive area under the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Consideration” (established in April 2002). Thus this project is classified as Category B.

(iii) Environmental Permit: The Environmental Impact Assessment report concerning this project is not obligatory under the domestic laws of Vietnam.

(iv) Anti-Pollution Measures: During construction, measures will be taken to alleviate noise, such as using low-noise equipment and limiting construction hours. Measures will be taken to prevent air pollution by sprinkling water, and measures will be taken to prevent water pollution by treating construction discharge.

(v) Natural Environment: The project site is not located in or around sensitive areas such as a national park, and so adverse impact on the natural environment is assumed to be minimal.

(vi) Social Environment: This project is to be implemented on existing public road land, and so it will require no land acquisition or resettlement.

(vii) Other/ Monitoring: The executing agency, etc., will monitor the air quality, water quality, and noise during construction.

(b) Promotion of Poverty Reduction

Because the poverty rate in the area of the project site is high compared to the national poverty rate and many poor are expected to benefit, this project constitutes an anti-poverty project according to JBIC’s definition.

(c) Promotion of Social Development (e.g. Gender Perspective)

Meetings will be held to hear local residents’ opinions for the detailed design so that the facility improvements meet the needs of the area residents, and at that time, adequate consideration will be given to gender balance.

(7) Other Important Issues

None

**5. Outcome Targets**

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2006)	Target (2016, 3 years after completion)
Traffic accident fatalities (persons/year)	Nat’l Road No.3: 58 Nat’l Road No. 5: 11 Nat’l Road No. 10: 36 Nat’l Road No. 18: 30	Nat’l Road No. 3: 41 Nat’l Road No. 5: 8 Nat’l Road No.10: 26 Nat’l Road No. 18: 21
Traffic accident fatalities per km of road (persons/km/year)	Nat’l Road No. 3: 0.9 Nat’l Road No. 5: 0.1 Nat’l Road No. 10: 0.3	Nat’l Road No. 3: 0.6 Nat’l Road No. 5: 0.07 Nat’l Road No. 10: 0.2

	Nat'l Road No. 18: 0.7	Nat'l Road No. 18: 0.5
Traffic accidents (accidents/year)	Nat'l Road No. 3: 119 Nat'l Road No. 5: 449 Nat'l Road No. 10: 170 Nat'l Road No. 18: 42	Nat'l Road No. 3: 84 Nat'l Road No. 5: 319 Nat'l Road No.10: 121 Nat'l Road No. 18: 30
Traffic accidents per km of road (accidents/km/year)	Nat'l Road No. 3: 1.8 Nat'l Road No. 5: 4.2 Nat'l Road No.10: 1.2 Nat'l Road No. 18: 0.9	Nat'l Road No. 3: 1.3 Nat'l Road No. 5: 3.0 Nat'l Road No.10: 0.9 Nat'l Road No. 18: 0.6
Traffic accident injuries (persons/year)	Nat'l Road No. 3: 156 Nat'l Road No. 5: 65 Nat'l Road No.10: 199 Nat'l Road No. 18: 47	Nat'l Road No. 3: 111 Nat'l Road No. 5: 46 Nat'l Road No.10: 141 Nat'l Road No. 18: 33
Traffic accident injuries per km of road (persons/km/year)	Nat'l Road No. 3: 2.5 Nat'l Road No. 5: 0.6 Nat'l Road No.10: 1.4 Nat'l Road No. 18: 0.3	Nat'l Road No. 3: 1.8 Nat'l Road No. 5: 0.4 Nat'l Road No.10: 1.0 Nat'l Road No. 18: 0.2
Scale of construction of traffic safety facilities:		
-Signalized intersection (points)	57	94
-Push-button signals (points)	0	45
-Overpasses for pedestrians/bicycles (points)	9	26
-Widening for motorbikes and bicycles lanes (km)	0	41.35
-Center media (km)	16.25	55.19
-Safety measure on curve section (km)	0	69.8
-Bus-bay on roadway (points)	97	213
-Paved shoulder (km)	418.00	472.00
Number of school teachers who receive training (persons)	0	Leader teachers:1170 General teachers:26,630
Ratio of school teachers who received training out of teachers at targeted schools (%)	0	70
Number of trained staff of teaching cars (persons)	0	22
Recipients of traffic police training (persons)	0	Leaders:60 General police officers:1,100
Ratio of traffic police who received training out of those at targeted traffic police stations (%)		
-Training to strengthen enforcement ability	0	Leaders:91 General police officers:95
-Training for monitoring and evaluation	0	Leaders:18 General police officers:10
Recipients of local training (persons)	0	Traffic instructors at school commuting times: 1,000 Community leaders: 900
Level of understanding of trainees (pass rate on final test (%))	N.A.	90

(2) Internal Rate of Return

Based on the following premises, the Economic Internal Rate of Return (EIRR) is 20.0%.

- (a) Cost: Project cost (excluding tax), operation and maintenance cost
- (b) Benefit: Reduction of medical and social cost incurred by the deceased/injured and their families, reduction of vehicle damage, and reduction of administrative cost required for accident processing
- (c) Project Life: 10 years

**6. External Risk Factors**

Sudden increase in vehicles in Vietnam (particularly four-wheeled vehicles)

**7. Lessons Learned from Findings of Similar Projects Undertaken in the Past**

There are no previous examples of yen loan projects targeted only on traffic safety. However, in the results of a Special Assistance for Project Implementation study on a Vietnam's road project, it has been pointed out (1) that inappropriate behavior by road users results not only from lack of knowledge and awareness but also from lack of traffic enforcement and (2) that because traffic safety campaigns are effective when they are repeated, it is best to have ongoing traffic safety campaigns led by local authorities in order to achieve effectiveness. Based on these study results, the project will carry out comprehensive traffic safety measures, including not only construction of facilities but also strengthening of traffic enforcement and human resources training for ongoing traffic safety education and traffic enforcement activities.

**8. Plans for Future Evaluation**

(1) Indicators for Future Evaluation

- (a) Traffic accident fatalities (persons/year)
- (b) Traffic accident fatalities per km of road (persons/km/year)
- (c) Traffic accidents (accidents/year)
- (d) Traffic accidents per km of road (accidents/km/year)
- (e) Traffic accident injuries (persons/year)
- (f) Traffic accident injuries per km of road (persons/km/year)
- (g) Scale of construction of traffic safety facilities (points and km)
- (h) Number of school teachers who receive training (persons)
- (i) Ratio of school teachers who received training out of teachers at targeted schools (%)
- (j) Number of trained staff of teaching cars (persons)
- (k) Recipients of traffic police training (persons)
- (l) Ratio of traffic police who received training out of those at targeted traffic police stations (%)
- (m) Recipients of local training (persons)
- (n) Level of understanding of trainees (pass rate on final test (%))
- (o) Economic internal rate of return (EIRR) (%)

(2) Timing of Next Evaluation

After project completion