

## Ex-ante Evaluation

### 1. Name of the Project

Country: The Socialist Republic of Vietnam

Project: North-South Expressway Construction Project (Da Nang – Quang Ngai Section) (I) (II) (III)

L/A signed on: June 15, 2011 (I), March 18, 2014 (II), March 31, 2016 (III)

L/A Amount: 15,912 million Yen (I), 30,008 million Yen (II), 30,000 million Yen (III)

Borrower: The Government of the Socialist Republic of Vietnam

### 2. Background and Necessity of the Project

#### (1) Current state and Issues of the Transport and Road Sector in Vietnam

As to the transport sector in Vietnam, the passengers and freight transport volume has been rapidly increasing proportionately with its recent economic growth particularly in urban districts in big cities, arterial roads connecting big cities with local cities, and major regional corridors. It is surmised that it will continue to grow further in the future. In addition to the rapid increase in traffic, the features of transport have seen drastic change: privately owned cars and large trucks have been on the increase. The mixed traffic is observed in nationwide national roads, which is one of the factors that cause traffic congestion, traffic accidents, and deterioration in roads. Under such circumstances, it is an important issue towards further economic growth to provide competitive as well as efficient, safe, and comfortable transport services.

#### (2) Development Policy for the Transport / Road Sector in Vietnam and the Priority of the Project

The government of Vietnam has set one of its goals in the Eighth Five-year Socioeconomic Development Plan (2006-2010) at “its industrialization (by 2020) after having broken away from the category of low-income countries (by 2010).” In order to achieve the goal, the government gives overriding priority to the development of transport and traffic infrastructure. Based on this, the government has been formulating and implementing plans to construct large-scale transport infrastructure including airports, harbors, expressways, and urban railways. In particular, it is stipulated that expressways extending over a length of 5,873km will be constructed in the Expressway Network Development Master Plan by 2020 and Vision after 2020 (Prime Minister’s decision No. 1734) which was approved in December 2008. The government aims for building expressways covering 2,235km by 2020. Institution-wise, Vietnam Expressway Corporation (hereinafter referred to as “VEC”) was founded in 2004 that would assume responsibility of development and investments in expressways. Thus, Vietnamese government has been working on establishment of systems towards introduction of commercial based transportation

systems.

As stated above, the Vietnamese government has been reinforcing its measures for the construction of expressways. Particularly, emphasis has been placed on building the North-South expressway that runs through the country from north to south. This Project develops a middle section of the North-South expressway stretching over the total length of 3,262 km along the National Road No. 1 that connects Can Tho with Hanoi. Da Nang, its starting point, is the largest city in the central region. In the neighborhoods of Da Nang port which is the third largest harbor, there are a number of production and distribution sites such as export processing zones. In particular, in the province of Quang Nam adjacent to Da Nang, Dung Quat Refinery has been constructed as the first oil refinery in Vietnam. It is expected that the oils refined by the plant will be transported by using the target section of this Project. In addition, Da Nang is the key point of the distribution of goods in the eastern region on the east-west economic corridor that eventually connects with Myanmar via Laos and Thailand. Thus, this Project also has substantial significance from the perspective of economic enhancement in the central region and balanced development of Vietnam.

The project of North-South expressway construction is one of the projects that Prime Minister Dung requested cooperation from Japan when he visited Japan in October 2006, for which the Japanese government made an explicit commitment to provide its cooperation in the Japan-Vietnam Joint Statement. Furthermore, Japan received a strong request from the Vietnamese government in the Japan-Vietnam Joint Statement announced on October 31, 2010 as well.

### (3) Japan's and JICA's Policy and Operations in the Transport / Road Sector

Japan's "Country Assistance Policy for Vietnam" (December 2012) raises "promotion of economic growth and strengthening international competitiveness" as a priority issue, and maintains that Japan "supports the country to develop arterial traffic and urban transport network, supply energy stably and promote saving energy in order to meet the demands for economic infrastructure which is increasing along with the economic growth." This Project is expected to contribute to raising efficiency in the distribution of goods in the central region by constructing the highest priority section of the North-South expressway. Thus, it is consistent with the Japan's policy. Concurrently with this policy, JICA's Country Analysis Paper is also putting emphasis on developing backbone transportation system. As a result, as cooperation for the field of expressways, JICA provided its assistance to North-South Expressway Construction Project (Ho Chi Minh City – Dau Giay Section) ((I) FY2007, (II) FY2011 and (III) FY2013), North-South Expressway Construction Project (Ben Luc – Long Thanh Section) ((I) FY2011 and (II) FY2014). In addition, JICA carried out the Study on ITS Technical Standards Operational Planning Support Project in Vietnam (March 2010 - January 2011), dispatched an advisor for management, operation and

maintenance of expressway system (May 2010 - May 2012), and assisted the formulation of the North-South Expressway Master Plan for the Comprehensive Study on the Sustainable Development of Transport System in Vietnam (VITRANSS2) (November 2007 - May 2010). When this Project is implemented, the outcome of such technical cooperation will be effectively used.

#### (4) Other Donors' Activity

The World Bank (hereinafter referred to as "WB") has been extending its assistance to the fields of development of national and municipal roads, inland waterway transport, and infrastructure development of urban transport. On the other hand, the Asian Development Bank is now implementing the Greater Mekong Subregion Economic Cooperation Program including Kunming - Hai Phong Multi-modal Transport Corridor Development Plan to enhance distribution.

#### (5) Necessity of the Project

North-South Expressway Construction Project (Da Nang – Quang Ngai Section) (hereinafter referred to as "the Project") is highly relevant to Japan's and JICA's country assistance program for Vietnam. In addition, in light of the above-stated necessity, the Vietnamese government's Expressway Network Development Master Plan also defines the Project's section as the top priority section from the viewpoints of taking measures to meet the higher transport demands in the future, raising efficiency in the distribution of goods, and eventually contributing to economic growth in the central region. Hence, the necessity and relevance to support the Project are high.

### **3. Project Description**

#### (1) Project Objectives

The objectives of the Project are to meet increasing traffic demand, to reduce travel time and uncertainty for passenger users and freight, and to enhance travel safety for road users, by constructing an expressway from Da Nang to Quang Ngai – a top priority section of the North-South Expressway, thereby contributing to economic growth and international competitiveness of Central Vietnam including Da Nang City.

#### (2) Project Site / Target Area

Da Nang City, Quang Nam Province, and Quang Ngai Province in the Socialist Republic of Vietnam

#### (3) Project Components

- 1) Construction of expressways {four-lane road for 131.5 km between Da Nang and Quang Ngai; including nine interchanges, three long bridges, and a tunnel

- (Northbound: 556 m, Southbound: 515m)} (international competitive bidding)
- 2) Detailed design, construction and installation of the operation and maintenance (O&M)-related equipment (international competitive bidding)
  - 3) Consulting service (support for bidding and supervision/coordination of implementation) (shortlist method)
- (4) Estimated Project Cost (Loan Amount)  
107,712 million Yen (Accumulated Loan Amount: 75,920 million Yen)  
(Note) Although WB is co-financing the North - South Expressway (Da Nang - Quang Ngai Section), the above does not include the Project cost for the section financed by WB.
- (5) Schedule  
June 2011 - June 2020 (109 months in total): The time to start the service (June 2018) shall be the time of the Project's completion.
- (6) Project Implementation Structure
- 1) Borrower: The Government of the Socialist Republic of Vietnam
  - 2) Executing Agency: Vietnam Expressway Corporation (hereinafter referred to as "VEC")
  - 3) Operation and Maintenance System: Company Operation and Maintenance of Expressway Viet Nam
- (7) Environmental and Social Consideration / Poverty Reduction / Social Development
- 1) Environmental and Social Consideration
    - ① Category: A
    - ② Reasons for Categorization:

The Project is classified as category A, because it comes under the road and bridge sector and also has features that are likely to have significant impact (large-scale involuntary resettlement) as defined by the Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations (stipulated in April 2002).
    - ③ Environmental Permit:

The Environmental Impact Assessment (EIA) report on this project was approved by the Ministry of Natural Resources and Environment in November 2008. The report of additional EIA carried out after the changes in the route was approved in October 2010.
    - ④ Anti-Pollution Measures  
Air pollution and noise level after the start of service will be controlled under the international standards by growing vegetation along the road, regular

maintenance of the road, and installing noise-barriers.

⑤ Natural Environment

The Project site and its surrounding area are not situated in sensitive areas such as national park, and it is assumed that an adverse effect on natural environment will be kept to minimum.

⑥ Social Environment

The Project will involve land acquisition of approximately 527ha and the resettlement of 1,239 households. The acquisition shall be carried out under the Resettlement Action Plan (hereinafter referred to as "RAP") that has been formulated in compliance with the Vietnamese domestic laws. The revision of RAP is planned to be completed by January 2016. The revised RAP will be approved by WB after being shared with JICA for review of its contents in early 2016. The land acquisition has been implemented based on the original RAP, and additional compensation is planned in case there are gaps between the original RAP and the revised RAP.

⑦ Other / Monitoring

The contractor will monitor air quality, noise level and water quality under the supervision of the construction management consultant during the time when the project is in progress. After the start of the service, the environmental monitoring consultant employed by VEC will conduct such monitoring. Ditto with resettlement, VEC will conduct monitoring.

2) Promotion of Poverty Reduction: None in particular

3) Promotion of Social Development: (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV / AIDS, Participatory Development, Considerations for Persons with Disabilities, etc.): The Project is a large-scale infrastructure development project to be implemented in the areas with high HIV/AIDS prevalence rates. Hence, AIDS control measures by using WB loans will be taken for construction workers for the entire section including the section developed with yen loan. Also, from a perspective of gender equality, the Project is engaged in employment of women in toll collection and additional compensation for relocation of households with female householders.

(8) Collaboration with Other Donors:

Co-financing with WB is explored. A detailed design was started in December 2011 with WB loan funds.

(9) Other Important Issues:

The Project contributes to adaptation to climate change, since the Project enables to supply transportation infrastructure during times of flooding by constructing an elevated expressway,

#### 4. Target Outcomes

##### (1) Quantitative Effects

###### 1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (2009 Actual)	Target (2020) 【2 years after the project completion】
Annual average daily traffic (PCU <sup>1</sup> /day)	N.A. (Because a new road is constructed)	15,000
Time needed from Da Nang to Quang Ngai (min.)	230 {for a trip in a 10-ton truck on the existing road (state road #1)}	90
Variable coefficient of the time needed for goods and passenger transport between Da Nang and Quang Ngai	10-ton truck: 140 (Range of fluctuation in the time needed: 170~310 min.) Passenger car: 30 (Range of fluctuation in the time needed: 150~180 min.)	All vehicles: 10

It is planned to keep monitoring traffic accident rates as reference values.

###### 2) Internal Rate of Return

Based on the conditions indicated below, Economic Internal Rate of Return (EIRR) of the Project is 19.66%, and Financial Internal Rate of Return (FIRR) is 0.3%.

###### 【EIRR】

Cost: Project cost (excluding tax) and operation and management expenses

Benefit: Saving of vehicle operating cost, shortening of traveling time, decrease in traffic accidents, and reduction in flood damage

Project life: 30 years

###### 【FIRR】

Cost: Project cost and operation and maintenance expenses

Benefit: Toll revenues

Project life: 30 years

##### (2) Qualitative Effects

The construction of North-South Expressway will improve the efficiency in passenger and freight transport, promoting economic development in the central region of Vietnam and adjusting to climate change.

#### 5. External Factors and Risk Control

<sup>1</sup> PCU(Passenger Car Unit): Indicator obtained by converting a stream of multiple traffic modes such as passenger cars, buses, trucks and motorbikes into a passenger car traffic stream

None in particular

## **6. Lessons Learned from Past Projects**

A lesson learned from the ex-post evaluation of the past expressway construction projects is that it is important to provide assistance based on the national highway development plan instead of fragmented and inconsistent construction of each expressway section for producing project's good results. Another lesson is that it is essential to plan and build an operation and maintenance system including operation and management expenses and carefully design a toll collection plan from an initial stage of the project in order to ensure sustainability after the Project's completion.

Based on the above lessons, under this Project it is planned to construct a section that is defined as the foremost priority section by the Expressway Network Development Master Plan so that it gives a good start to the development of national expressway networks in Vietnam. At the same time, the Project activities will be reinforced by collaboration with technical cooperation projects in terms of the establishment of an operation and maintenance system and the formulation of a toll collection plan.

## **7. Plans for Future Evaluation**

(1) Indicators to be Used

- 1) Annual average daily traffic (PCU/day)
- 2) Time needed from Da Nang to Quang Ngai (min.)
- 3) Variable coefficient of the time needed for goods and passenger transport between Da Nang and Quang Ngai
- 4) Economic internal rate of return (EIRR) (%)
- 5) Financial internal rate of return (FIRR) (%)

(2) Timing: Two years after the completion of the Project