

Socialist Republic of Viet Nam

FY2019 Ex-Post Evaluation of Japanese ODA Loan Project

“Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I) (II) (III)”

“Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project  
(I) (II)”

External Evaluator: Osamu Abe, ALMEC Corporation

## **0. Summary**

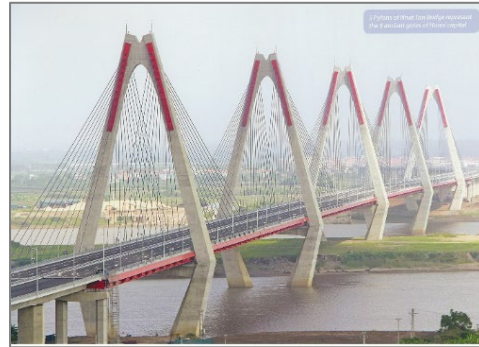
The implementation of the Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I) (II) (III) (hereinafter, referred to as “Nhat Tan Bridge”) and Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I) (II) (hereinafter, referred to as “Connecting Road”) aims to address the increasing traffic demand, to streamline logistics, to strengthen transportation capacity, and to alleviate traffic congestion. The construction of the Nhat Tan Bridge is under the Nhat Tan Bridge Project, which forms one end of the Ring Road 2, while the construction of the road connecting Nhat Tan Bridge to Noi Bai International Airport is under the Connecting Road Project. Both projects are in line with Vietnam's development policy and development needs, as well as Japan's ODA policy to support the development of the international airport and the urban ring road network. The relevance of the projects is high especially since the international airport is the gateway to economic growth infrastructure (tourism, logistics, etc.). Both the project costs and the project periods exceeded the original plans, so the efficiency is fair. Analyzing the quantitative impacts of both projects, the projects mostly achieved the target. In the interview surveys with beneficiaries, they mentioned the travel time from Hanoi city center to Noi Bai International Airport via the Connecting Road has shortened. It can be said that both projects have contributed to alleviating traffic congestion and improving the efficiency of logistics in Hanoi City. The effectiveness and impacts are also high after confirming the proper implementation of the response and monitoring to the natural environment, resettlements, and the land acquisition based on the relevant laws and regulations of Vietnam. Hanoi City carries out the operation and management (hereinafter, referred to as “O&M”) of both projects. When the Nhat Tan Bridge was turned over to the Vietnamese side, Hanoi City had no maintenance standards or supervision and management systems, so the Hanoi Department of Transport (hereinafter, referred to as “DOT”) provided training to improve knowledge and skills to strengthen their capacity. Hanoi City secures a yearly O&M budget for both projects and has a budgeting system for medium-scale repairs, and no major problems were observed in the institutional/organizational, technical, financial aspects, and status of the O&M system; therefore, the sustainability of the project effects is high.

In light of the above, both projects are evaluated to be highly satisfactory.

## 1. Project Description



Project Location



Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) and Noi Bai International Airport–Nhat Tan Bridge Connecting Road Construction Projects

### 1.1 Background

The road sector plays a central role in transportation, accounting for 67.6% of freight transport in 2004. The volume of freight and passengers by the transportation sector continues to increase sharply on the main roads that connect the urban centers of the metropolis and regional cities. Roads in Hanoi had been experiencing problems, such as the lack of a road network and insufficient road width. As the economy of the city further developed after introducing the Doi Moi policy. In 2001, the number of registered motorcycles and automobiles increased 1.5 times more in five years since 1996, creating more severe traffic congestion.

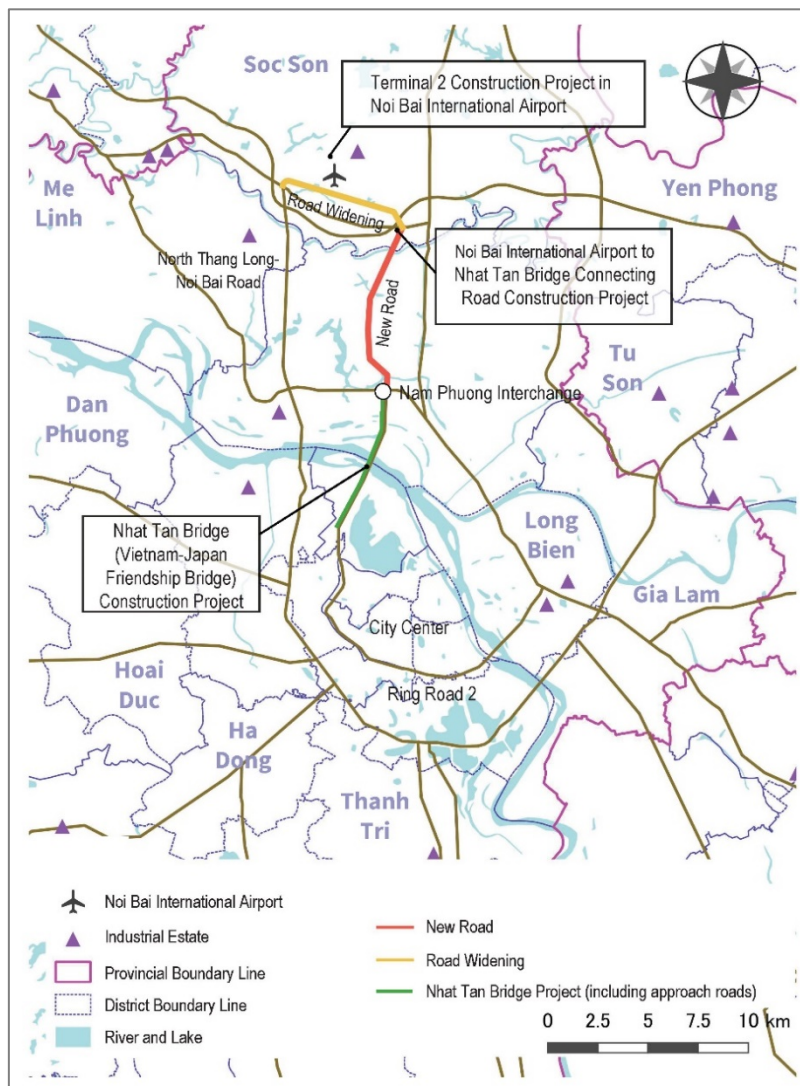
The Red River, which divides Hanoi into two, had only three bridges: Thang Long Bridge, Long Bien Bridge, and Trung Duong Bridge, starting from the upper stream. With few bridges, even if cargo vehicles needed to bypass the center of Hanoi, many were forced to pass through the center of the city, causing more traffic congestion. In terms of the Connecting Road, the traffic capacity of the existing North Thang Long–Noi Bai road was already saturated. It made access between the city center in the south and the Noi Bai International Airport, industrial parks, and newly developed areas in the north inefficient, further adding to traffic congestion.

Alleviating traffic congestion in the city and surrounding areas and improving the efficiency of logistics by connecting Noi Bai International Airport and the northern part of Hanoi via both projects from Ring Road 2 became urgent issues to address.

## 1.2 Project Outline

Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III): The objective of this project is to respond to the increased transport demand, streamline logistics and alleviate traffic congestion by constructing a bridge over the Red River flowing through Hanoi City and approach roads, thereby contributing to promotion of economic development of Hanoi City and the northern regions of Vietnam and the strengthening of international competitiveness.

Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II): The objective of this project is to develop a new high-standard road that connects Noi Bai International Airport and Nhat Tan Bridge (Vietnam-Japan Friendship Bridge), to enhance transportation capacity from central Hanoi to the airport, thereby contributing to promotion of economic growth and enhancement of international competitiveness of the country.



**Figure 1 Location Map of the Projects**

<p>Loan Approved Amount/ Disbursed Amount</p>	<p>Nhat Tan Bridge Construction Project 13,698 million yen / 13,487 million yen (Phase I) 24,828 million yen / 24,423 million yen (Phase II) 15,637 million yen / 12,010 million yen (Phase III) Noi Bai International Airport-Nhat Tan Bridge Connecting Road Project 6,546 million yen / 6,515 million yen (Phase I) 11,537 million yen / 10,405 million yen (Phase II)</p>																											
<p>Exchange of Notes Date/ Loan Agreement Signing Date</p>	<p>Nhat Tan Bridge Construction Project March 2006 / March 2006 (Phase I) January 2011 / January 2011 (Phase II) March 2013 / March 2013 (Phase III) Noi Bai International Airport-Nhat Tan Bridge Connecting Road Project March 2010 / March 2010 (Phase I) March 2013 / March 2013 (Phase II)</p>																											
<p>Terms and Conditions</p>	<p>Nhat Tan Bridge Construction Project</p> <table data-bbox="683 1070 1353 1301"> <tr> <td>Interest Rate</td> <td>0.40%</td> <td>(Phase I)</td> </tr> <tr> <td></td> <td>0.20%</td> <td>(Phase II)</td> </tr> <tr> <td></td> <td>0.01%</td> <td>(Phase II Consultant)</td> </tr> <tr> <td></td> <td>0.20%</td> <td>(Phase III)</td> </tr> <tr> <td></td> <td>0.01%</td> <td>(Phase III Consultant)</td> </tr> </table> <p>Repayment Period 40 years (Grace Period) 10 years</p> <p>Conditions for Procurement Tied (Special Terms for Economic Partnership (STEP))</p> <p>Noi Bai International Airport-Nhat Tan Bridge Connecting Road Project</p> <table data-bbox="683 1615 1353 1794"> <tr> <td>Interest Rate</td> <td>1.20%</td> <td>(Phase I)</td> </tr> <tr> <td></td> <td>0.01%</td> <td>(Phase I Consultant)</td> </tr> <tr> <td></td> <td>1.40%</td> <td>(Phase II)</td> </tr> <tr> <td></td> <td>0.01%</td> <td>(Phase II Consultant)</td> </tr> </table> <p>Repayment Period 30 years (Grace Period) 10 years</p> <p>Conditions for Procurement General Untied</p>	Interest Rate	0.40%	(Phase I)		0.20%	(Phase II)		0.01%	(Phase II Consultant)		0.20%	(Phase III)		0.01%	(Phase III Consultant)	Interest Rate	1.20%	(Phase I)		0.01%	(Phase I Consultant)		1.40%	(Phase II)		0.01%	(Phase II Consultant)
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Borrower / Executing Agency	The Government of the Socialist Republic of Vietnam / Ministry of Transport (for both projects)
Project Completion	Nhat Tan Bridge Construction Project December 2014 Noi Bai International Airport–Nhat Tan Bridge Connecting Road Project December 2014
Target Area	<ul style="list-style-type: none"> <li>• Nhat Tan Bridge Construction Project Tay Ho District, and Dong Anh District in Hanoi City</li> <li>• Noi Bai International Airport-Nhat Tan Bridge Connecting Road Project Soc Son District and Dong Anh District in Hanoi City</li> </ul>
Main Contractor(s) (Over 1 billion yen)	<ul style="list-style-type: none"> <li>• Nhat Tan Bridge Construction Project Package 1: IHI Infrastructure Systems (Japan) / Sumitomo Mitsui Construction (Japan) (JV) Package 2: Sumitomo Mitsui Construction (Japan) / Vietnam Construction &amp; Import-Export Corporation (Vietnam) (JV) Package 3: Tokyu Construction (Japan)</li> <li>• Noi Bai International Airport–Nhat Tan Bridge Connecting Road Project Package 1: Civil Engineering Construction Corporation No. 4 (Vietnam) Package 2: KUKDONG Engineering &amp; Construction (Republic of Korea) Package 3: Hanshin Engineering &amp; Construction (Republic of Korea) Package 4: Guangxi Road &amp; Bridge Construction (China) Package 5: Keangnam Enterprises (Republic of Korea) / Civil Engineering Construction Corporation No. 4 (Vietnam) (JV)</li> </ul>
Main Consultant(s) (Over 100 million yen)	<ul style="list-style-type: none"> <li>• Nhat Tan Bridge Construction Project Chodai (Japan) / Nippon Engineering Consultants (Japan) / Transport Engineering Design Incorporation (Vietnam) (JV)</li> <li>• Noi Bai International Airport-Nhat Tan Bridge</li> </ul>

	<p>Connecting Road Project Stanley Consultants (USA) / CTI Engineering (Japan) (JV)</p>
<p>Related Studies (Feasibility Studies, etc.)</p>	<ul style="list-style-type: none"> <li>• Nhat Tan Bridge Construction Project Nhat Tan Bridge Project (Pre-Feasibility Study) (2003) Nhat Tan Bridge Project Feasibility Study (August 2005)</li> <li>• Noi Bai International Airport–Nhat Tan Bridge Connecting Road Project Feasibility Study (7.85 km: Km0+00-Km7+85 section) (February 2009) Feasibility Study (1.115 km: Km0+85-Km12+10 section) (October 2009)</li> </ul>
<p>Related Projects</p>	<ul style="list-style-type: none"> <li>• Terminal 2 Construction Project in Noi Bai international Airport (JICA)</li> <li>• Hanoi Urban Transport Development Project (Construction of Ring Road 2) (World Bank)</li> </ul>

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Osamu Abe, ALMEC Corporation.

### 2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: December 2019 – November 2020

### 2.3 Constraints during the Evaluation Study

Because of the impacts of the coronavirus disease 2019 (hereinafter, referred to as “COVID-19”), the external evaluator was unable to conduct the field survey in Hanoi, but field survey assistants managed to collect information mainly through written questionnaires. As a countermeasure to the spread of the COVID-19, the Government of Vietnam implemented a lockdown in the capital city for some time, resulting in a drastic decrease in traffic volume. The traffic survey was conducted in November 2020, awaiting a certain level of normalization of traffic volume, but the extent of the impact of COVID-19 was unavoidable. Since the rehabilitation work of Thang Long Bridge, one of the survey points of the traffic survey, started in September 2020, the traffic volume survey could not be carried out completely because the traffic was restricted to motorcycles. Therefore, traffic analysis used a traffic model. It was

calibrated to calculate the traffic volume on the Thang Long Bridge and the North Thang Long–Noi Bai Road leading to the Thang Bridge. As for the resettlement and land acquisition, the field survey assistants interviewed the Ministry of Transport (hereinafter, referred to as “MOT”), Hanoi City, and local government agencies in the target areas, but could not manage to obtain the detailed information.

### 3. Results of the Evaluation (Overall Rating: A<sup>1</sup>)

#### 3.1 Relevance (Rating: ③<sup>2</sup>)

##### 3.1.1 Consistency with the Development Plan of Vietnam

At the time of ex-ante evaluation, *the Master Plan for the Development of Road Transport Sector up to 2010 and Directions to 2020* (2002–2010), enacted in 2002, and *the Eighth Five-Year Plan for Socio-Economic Development* (2006–2010), formulated in 2006, focused on the road rehabilitation and new construction and cited development directions, such as the development of ring roads in major cities. *The Strategy for Transport Development to 2020 and Vision to 2030* (2009–2020), enacted in 2009, pointed out the importance of developing key roads, especially in urban areas such as in the cities of Hanoi and Ho Chi Minh. In *the Hanoi Master Plan for Transport Development until 2020* (2011–2020), both projects were determined as high priority in the development of the northern region of Hanoi. Additionally, *the Ninth Five-Year Plan for Socio-Economic Development* (2011–2015), enacted in 2011, identified the further construction of the entire infrastructure system, including the improvement of transportation infrastructure, as a top priority issue to achieve the development goal of sustainable development under high growth.

The ex-post evaluation confirmed the importance of the development of key roads in urban areas in the abovementioned *Strategy for Transport Development*, and the high priority of both projects in the development of the northern region of Hanoi in the abovementioned *Hanoi Master Plan for Transport Development*. In addition, *the General Construction Plan of the Hanoi City up to 2030 and Vision to 2050*, enacted in July 2011, emphasizes the importance of road infrastructure development in the urban transportation network connecting Noi Bai International Airport, the Trans-Asia Economic Corridor, the gateway to the northern region of the metropolitan area, and the sub-centers of the northern region. The project is consistent with the development policy. As mentioned above, the consistency between the projects and the development policy is high during both the ex-ante and ex-post evaluations.

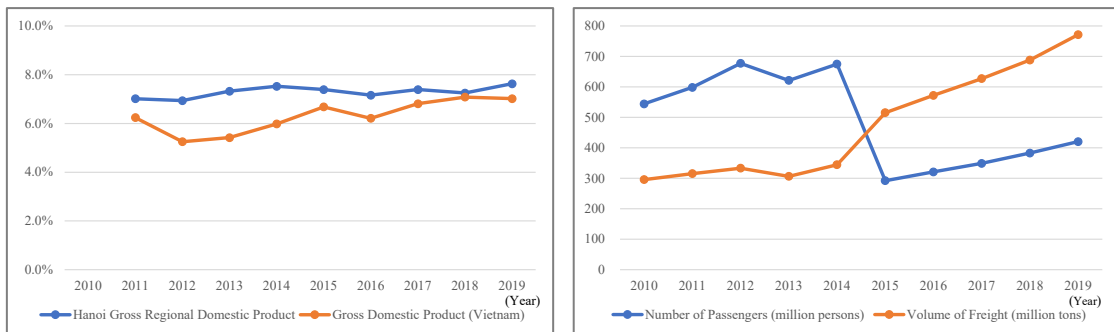
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<sup>1</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>2</sup> ③: High, ②: Fair, ①: Low

### 3.1.2 Consistency with the Development Needs of Vietnam

During the ex-ante evaluation, the Nhat Tan Bridge project was part of Ring Road 2 of Hanoi, connecting central Hanoi City with the northern part of the city as well as with the extension of National Highway 5 and the Connecting Road in the northern part of the city, in order to ease traffic congestion and improve traffic efficiency in Hanoi City by directing traffic towards the city center to the Nhat Tan Bridge. Also, from the perspective of developing the northern area of Hanoi City by connecting the existing central city on the south side of the Red River with the newly developed area, including Noi Bai International Airport and industrial parks on the north side, the early construction of the Nhat Tan Bridge to connect the two areas in the shortest possible time was highly needed for development in terms of transportation networks.



Source: Ha Noi Statistical Yearbook 2010–2020. Statistics Office of Ha Noi City. Statistical Publishing House.  
 Note: Figure 3. The significant drop in passengers and freight volume in Hanoi in 2014–2015 is attributed to a statistical methodology change.

**Figure 2 GRDP and GDP Growth Rate Figure 3 Number of Passengers and Volume of Freight**

Construction of the Connecting Road was significantly needed to reduce the traffic load on the existing North Thang Long–Noi Bai road from the Hanoi city center to the Noi Bai International Airport, which is already saturated with traffic capacity.

Since the North Thang Long–Noi Bai Road was the only arterial road that connects the center of Hanoi City and Noi Bai International Airport, there was a need to construct a new road that would connect the Noi Bai International Airport and Nhat Tan Bridge with a perspective of securing an alternative route in the event of a disaster. The economic growth rate of Hanoi City was high at the time of the ex-post evaluation, averaging at more than 7% per year compared to the national gross domestic product. Its passenger and freight traffic volume of road transport was trending upwards. Therefore, the importance of both projects was maintained during the ex-post evaluation.

### 3.1.3 Consistency with Japan’s ODA Policy

According to the *Overseas Economic Cooperation Operations (FY2005)*, support for international and domestic trunk transport traffic (northern and southern priority areas for economic growth and north–south trunk transport) and urban transport (Hanoi City and Ho Chi



Minh) was emphasized. The Nhat Tan Bridge project is part of the Ring Road 2 that connects Hanoi City with its northern area, a priority supporting area for urban transport, as indicated in the policy. As for the Connecting Road, the assistance policy in the *Country Assistance Plan for Vietnam*, formulated in July 2009, lists "urban development, transportation, and communication network development" as the priority development issues. The ODA policy states that support for "urban ring roads, intra-urban and peripheral bypass roads, and other networks" and "inter-urban arterial transportation networks" would be prioritized to cope with the increasing demand for transportation. Constructing a new high-standard road connecting the center of Hanoi with Noi Bai International Airport is in line with this plan. The applicability of both projects is highly relevant to the Japan's ODA policy.

Both projects have been highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

### 3.2 Efficiency (Rating: ②)

#### 3.2.1 Project Outputs

The outputs were compared with the plan of the final phase and the actual results of each project, while the project costs and project periods were compared with the initial plans and the final phase plans, and the actual results since both are financed with loans for several loan periods. Between the plans of the ex-ante evaluation and the actual results, there were no changes in the major outputs. Some changes included the alignment of the northern approach road because of the implementation of the Connecting Road construction project after the Nhat Tan Bridge construction project started. Another is the removal of the toll station in the Connecting Road due to the abandonment of toll collection. The reasons for both changes were deemed reasonable.

Plan (Phase III)	Outputs
Nhat Tan Bridge Construction Project	
(a) Bridge Construction Total length: 3,080 m (main bridge 1,500 m, north approach bridge 1,240 m, north embarkment ridge 340 m) Structure: Cable-stayed bridge Traffic lane: Three lanes on each side and one mixed lane Roadway: Roadway width (one lane) 3.75 m (b) Approach Roads (1) South Approach Road	(a) Bridge Construction In accordance with plans (b) Approach Roads (1) South Approach Road In accordance with plans (2) North Approach Road In accordance with plans

Plan (Phase III)	Outputs
<p>Total length: 1,251 m (South approach road 576 m, Phu Thuong Interchange 400 m, south approach bridge 275 m)</p> <p>Traffic lane: Three lanes on each side and one mixed lane</p> <p>Roadway: Roadway width (one lane) 3.75 m</p> <p>(2) North Approach Road</p> <p>Total length: 4,800 m<sup>3</sup></p> <p>Traffic lane: Three lanes on each side and one mixed lane</p> <p>Roadway: Roadway width (one lane) 3.75 m</p> <p>This approach road includes the construction of three interchanges<sup>4</sup></p> <p>(c) Consulting Services</p> <p>F/S review, detailed design, bidding support, construction management, monitoring during the defect liability period, HIV/AIDS prevention program, and environmental and social considerations monitoring program</p>	<p>(c) Consulting Service</p> <p>In accordance with plans</p>
<p>Noi Bai International Airport–Nhat Tan Bridge Connecting Road Project<sup>5</sup></p>	
<p>(a) Road Construction</p> <p>(1) New high standard road</p> <p>Total length: 7.85 km (from Nam Hong Interchange to the beginning of Noi Bai Airport road)</p> <p>Traffic lane: 6 lanes (3 lanes on each side)</p> <p>Width: 31.0 m</p> <p>(2) Widening of existing road</p>	<p>(a) Road Construction</p> <p>(1) New high standard road</p> <p>In accordance with plans</p> <p>(2) Widening of existing road</p>

<sup>3</sup> The plan was to connect the end of the road to National Highway 3 until the detailed design (October 2007). But in February 2009, the decision was to connect it to the Noi Bai International Airport–Nhat Tan Bridge Connecting Road Project. The alignment changed. Data provided by JICA.

<sup>4</sup> “In April 2007, a toll booth was designed to construct in the feasibility study. However, it was later decided that it would be built under the Noi Bai International Airport–Nhat Tan Bridge Connecting Road project (MOT No. 059/BGTVT-KHDT/2007). In July 2012, it was decided to abandon the construction of the toll booth (Prime Minister’s Office No. 4345/VPCP-KTN/2012).” Data provided by JICA.

<sup>5</sup> Construction of a new high-standard road (7.85 km) and widening of the current road (4.25 km) from Nam Hong Interchange to the beginning of North Thang Long–Noi Bai Road via Noi Bai International Airport.

Plan (Phase III)	Outputs
Length: 4.25 km (Noi Bai Airport road) Traffic lane: 6 lanes (3 lanes on each side) Width: 52.5 m (including 25.0 m median strip) (3) New side roads running parallel to the main road (4) Other structures: 6 bridges and a toll booth	In accordance with plans  (3) New side roads running parallel to the main road  In accordance with plans (4) Other structures: 6 bridges and a toll booth
(b) Consulting Services Construction management, implementation of safety measures related to construction, implementation of HIV/AIDS measures, monitoring of environmental and social considerations	The construction of the toll booth was abandoned  (b) Consulting Services In accordance with plans

### 3.2.2 Project Inputs

(For details, see “Comparison of the Original and Actual Scope of the Projects” on the last part of the report).

#### 3.2.2.1 Project Cost

##### 1) Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project

The project cost was 51,668 million yen in the initial plan (of which the yen loan portion was 39,027 million yen) and 75,449 million yen in the final phase plan (of which the yen loan portion was 54,163 million yen), while the actual cost was 62,640 million yen (of which the yen loan portion was 49,908 million yen) or 121% of the planned cost of the initial plan, or 83% of that of the final phase. The change in the bridge substructure (from embedded piles to steel pipe sheet pile foundations), the south approach bridge, the embankment elevated road, and the design change in the interchange and the Tiep Bridge contributed to the increase in the project cost. The project cost resulted in exceeding the initial plan; however, it was still within the final phase planned cost partly due to the influence of foreign currency exchange rates.

##### 2) Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project

The project cost was 32,267 million yen in the initial plan (of which the yen loan portion was 21,603 million yen) and 26,957 million yen in the final phase plan (of which they yen loan portion was 18,083 million yen), while the actual cost was 24,168 million yen (of which the yen loan portion was 16,588 million yen) or 75% of the planned cost of the initial plan, or 90% in the final phase. Due to the design changes, such as no toll booth to build, the project cost ended up within the plan.

In comparing the total project cost of both projects, the actual cost was 86,808 million yen against the initial plan of 83,935 million yen, or 103% of the plan, and the evaluation of the sub-rating for the project cost was ②.

#### 3.2.2.2 Project Period

##### 1) Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project

While the initial project period planned during the ex-ante evaluation was from March 2006 to December 2012 (82 months) and the project period planned in the final phase plan was from March 2006 to December 2014 (106 months), the actual project period was from March 2006 to December 2014 (106 months), or 129% of the initial plan and 100% of the final phase plan. Although the land acquisition, resettlement, bidding, and contracting by the government took longer than initially intended, the construction period was shortened and completed before the facility began its operations in January 2015.

##### 2) Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project

While the initial project period planned during the ex-ante evaluation was from March 2010 to October 2013 (46 months) and the project period planned in the final phase plan was from March 2010 to June 2015 (64 months), the actual project period was from March 2010 to December 2014 (58 months), or 126% of the initial plan and 91% of the final phase plan. Even with the longer required time for the acquisition and delivery of the land and the bidding for Contract Package 5, the construction period for the other contract packages was almost on schedule or completed ahead of schedule. The facility began service in January 2015, the same month as the Nhat Tan Bridge.

#### 3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

##### 1) Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project

At the time of the ex-ante evaluation, the calculation of the Economic Internal Rate of Return (hereinafter, referred to as “EIRR”) assumed the project life is 30 years, and the benefits are the reduction in travel time, travel costs, while the costs are the project construction costs (excluding taxes), and the operation and maintenance costs. The EIRR was at 17.91% during the phase I ex-ante evaluation and at 21.36% during phase III ex-ante evaluation. It was recalculated in this ex-post evaluation. As the ratio of automobile traffic was higher than that of the traffic demand forecast during the ex-ante evaluation, the benefit became higher, resulting in an EIRR of 23.49%. (The project has no toll revenue, so calculating the financial internal rate of return is not required).

## 2) Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project

Similar to the above, the calculation of the EIRR assumed a project life of 30 years. The result during the phase I and II ex-ante evaluation was 17.25%. When recalculated in this ex-post evaluation, the EIRR was 22.74% because the proportion of automobile traffic was higher at the ex-post evaluation than the traffic demand forecast, and the benefits became higher. The financial internal rate of return was also not calculated for this project because the government decided not to collect tolls.

Both the project cost and project period exceeded the plans. Therefore, the efficiency of the projects is fair.

### 3.3 Effectiveness and Impacts<sup>6</sup> (Rating: ③)

#### 3.3.1 Effectiveness

##### 3.3.1.1 Quantitative Effects (Operation and Effect Indicators)<sup>7</sup>

###### 1) Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project

Table 1 shows the baseline, target, and actual figures for operation and effect indicators. The basis of the actual annual average daily traffic volume is the traffic count survey conducted by Hanoi City in 2017, and the traffic survey results is from the traffic survey<sup>8</sup> conducted by the ex-post evaluation team in November 2020.

The results of the traffic count survey in 2017 shows that the annual average daily traffic volume has reached the target volume in 2016. The results of the 2020 traffic survey indicate that the annual average daily traffic volume is on an increasing trend. Connecting the center and northern part of Hanoi is found to address the traffic demand. The reduction in travel time and travel cost became significantly higher than that in the ex-ante evaluation due to the higher ratio of car traffic to total traffic. The traffic volume is also higher than in the traffic demand forecast during the ex-ante evaluation.

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<sup>6</sup> Sub-rating for effectiveness is to be put with consideration to the impacts.

<sup>7</sup> As for the operation and effect indicators, the final phase plans have higher targets than the initial plans, so the comparison were with the former.

<sup>8</sup> The method for the traffic analysis was by updating the traffic model created in 2013 to 2019 data. The impact of the COVID-19 was adjusted by referring to the Google Mobility Report. The primary reason for the high proportion of private vehicles was the increase in car ownership. Looking at the passenger share by vehicle type, the number of general buses decreased by 60% compared to 2013. It is thought that the impact of the COVID-19 decreased the number of general bus (shared ride) users and increased the use of private cars that, in turn, increased the traffic volume. Furthermore, the ratio of private cars to the total traffic volume was higher than the traffic demand forecast.

**Table 1 Operation and Effect Indicators (Nhat Tan Bridge Project)**

	Baseline	Target *1	Actual	
	(2010)	(2016)	(2017) *2	(2020)
		2 Years After Completion		Traffic Survey Results
Annual average daily traffic (PCU/day)*3	-	65,821	69,257	139,398
Time saving cost (billion VND/year)*4	-	582.163	2,293.41	4,232.95
Vehicle operation cost saving (billion VND/year)	-	1,209.27	3,492.50	6,273.34

\*1 Source: Document provided by JICA.

\*2 Source of annual average daily traffic: Results of traffic count survey in December 2017 by Hanoi DOT. The calculated shortened travel time and reduced travel costs are based on the traffic count survey results.

\*3 There is no baseline for the subject project because it is a newly built bridge.

\*4 Calculated based on the comparison with the time taken on the North Thang Long–Noi Bai Road and before the construction of the bridge.

## 2) Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project

The target values of the operational and effects indicators two years after the completion of the project (2017) were obtained by traffic analysis based on the results of the traffic survey.<sup>9</sup> The traffic survey results are based on the traffic survey conducted in November 2020. The annual average daily traffic volume is considered to have reached the target value in 2017 based on the results of the traffic survey in 2020. While the annual average daily traffic volume at Nhat Tan Bridge is 139,398 (refer to Table 1), the annual average daily traffic volume on the newly built road between Nam Hong IC and Noi Bai International Airport is 74,507 (refer to Table 2). It shows that half of the traffic passing through Nhat Tan Bridge uses the connecting road. From this situation, it can be concluded that the objective of enhancing the transportation capacity from the center of Hanoi to Noi Bai International Airport has been achieved to a certain extent. The travel time saving, and the reduction of vehicle operation costs were significantly greater than those in the ex-ante evaluation because the ratio of vehicles traffic to total traffic was higher than the traffic demand forecast at the time of ex-ante evaluation, as well as the traffic volume.

<sup>9</sup> There were no actual traffic survey data.

**Table 2 Operation and Effect Indicators (Connecting Road Project)**

	Baseline	Target	Actual
	(2011)	(2017)	(2020)
	Actual Results	2 Years After Completion *1	Traffic Survey Results
Annual average daily traffic (PCU/day)	58,985 Existing Road (North Thang Long- Noi Bai Road)	29,046 Existing Road (North Thang Long-Noi Bai Road at Noi Bai Section)	15,153 *2
	- *3	49,258 New Road (Nam Phuong IC- Noi Bai International Airport)	74,507
Travel time (minute) *4	60–90 Existing Road (North Thang Long- Noi Bai Road) (2008 actual figure)	30 New Road (This project section)	16–22
Time saving cost (billion VND/year) *1	-	78.9	1,816.2
Vehicle operation cost saving (billion VND/year) *1	-	370.3	2,595.2
Average speed (km/hour)	50 Existing Road (North Thang Long- Noi Bai Road) (2008 actual figure)	80 New Road (This project section)	50–70 *5

Source: Document provided by JICA, and Traffic Survey Results in 2020.

\*1 Ex-ante Evaluation: Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (II)

\*2 Traffic volume was low due to traffic restrictions for vehicles other than motorcycles for the repair of Thang Long Bridge, which affected the traffic volume on the existing road (North Thang Long–Noi Bai Road) leading to Thang Long Bridge.

\*3 There is no baseline because the subject project is a newly built road.

\*4 The baseline of the travel time is from Ho Chi Minh Mausoleum to Noi Bai International Airport via the existing road, while the target value and the results of the traffic survey show the travel time from Nhat Tan Bridge to Noi Bai International Airport via the connecting road.

\*5 The target travel speed is the legal maximum speed of the connecting road (later changed to 90 km/h), while the traffic survey results are the actual measured travel speed. In general, the actual driving speed will not be the maximum speed due to the influence of traffic volume, entering and exiting the expressway, etc.

### 3.3.1.2 Qualitative Effects (Other Effects)

The assumption was that the qualitative effects of both projects would improve the logistics efficiency by ensuring smooth road transportation, reduce traffic congestion, and promote economic development in Hanoi and the northern region of Vietnam. To verify the assumptions, taxi drivers, logistics companies, logistics industry association, tourism companies, and the chambers of commerce and industry were interviewed (23 responses in total). The "promotion of economic development in Hanoi and the northern region of Vietnam" was determined to be an impact, so it was decided to analyze it in the impact section below.

As a result of the survey, most respondents (19 out of the 23 interviewed) reported that the travel time from the city center to Noi Bai International Airport via the Connecting Road was lesser than that of the trip through Thang Long Bridge. Respondents replied it took one hour and a half to get from the city center to Noi Bai International Airport through Thang Long Bridge while some responded up to two hours at the longest. But through Nhat Tan Bridge–Connecting Road, the time reduced to 30-45 minutes. This indicates that the projects have ensured smooth road transportation and improved the efficiency of logistics. Some respondents (16 out of 23 interviewed) stated that the traffic congestion on the road to the airport through Thang Long Bridge has improved after the construction of both projects. The benefits mentioned other than time saved were comfortable driving environment (pavement surface, scenery), fuel cost savings, and more frequent trips between the city and the airport (according to the taxi drivers).

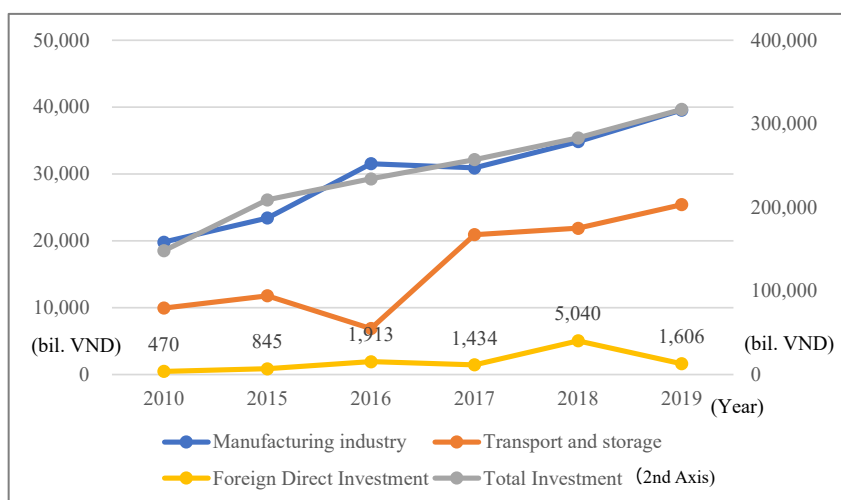
### 3.3.2 Impacts

#### 3.3.2.1 Intended Impacts

At the time of the ex-ante evaluation, the assumed impact of the two projects would be the promotion of economic development and the enhancement of international competitiveness in Hanoi and the northern region of Vietnam. While verifying a direct cause-and-effect relationship between the economic development and the enhancement of international competitiveness could be difficult because factors other than the two projects have an impact, the GRDP of Hanoi and the trend of the increase in domestic and foreign direct investment were verified to confirm the assumptions made at the time of the ex-ante evaluation.

Since 2015, the GRDP (see Figure 2) has remained largely flat but slightly higher than the national GDP. Domestic and foreign direct investments have shown an increasing trend. The transport and warehousing sector showed a drop in investment in 2016, but investment has continued to rise since. The volume of land cargo in Hanoi has shown a steady increase since 2014 and, according to a survey by the logistics industry, the volume of logistics to and from Noi Bai International Airport has increased yearly by 11.4% since 2015.





Source: Ha Noi Statistical Yearbook. (2010-2020). Statistics Office of Ha Noi City. Statistical Publishing House.

**Figure 4 GRDP, Domestic and Foreign Direct Investment in Hanoi**

Both projects not only connect Noi Bai International Airport to the logistics center but also to other provinces, which was pointed out in the interview surveys in the logistics industry, meaning a potential for growth in land freight transportation. As for the linkage from the center of Hanoi to the northern provinces, the projects have connected National Highway 3, which connects the center of Hanoi to the northern part of Vietnam, and the Noi Bai–Halong route, the Hanoi–Lao Cai Expressway, National Highway 2, and National Highway 18, which extends from east to west. The respondents also pointed out the improved road network to the north of Hanoi. In addition, new companies have begun to rent land to build facilities and distribution centers targeting the northern region of Hanoi. The expansion of the transportation network and new investments play an important role in the growth of the logistics industry, according to a response from a logistics industry association.

Respectively, this shows both projects contribute to the development of the local economy to a considerable extent.

### 3.3.2.2 Other Positive and Negative Impacts

#### 1) Impacts on the Natural Environment

Both projects fall under major road sector projects and influential characteristics (Category A) as stated in the Japan Bank for Cooperation Guidelines for Confirmation of Environmental and Social Consideration established in April 2002.

The implementing agency prepared environmental monitoring plans in accordance with the Environmental Impact Assessment reports. It also conducted environmental monitoring during the project implementation periods based on the said plans. The environmental monitoring reports were submitted as an appendix to the project progress reports, and it was confirmed that the projects were generally implemented as planned. In addition, the monitoring results of air

quality, noise, water quality, and soil erosion and sedimentation in the same report showed that no significant standard value was exceeded, and no particular environmental problems occurred during the project implementation period.

## 2) Resettlement and Land Acquisition

The implementing agency formulated resettlement plans complying with the Vietnamese law. The process of resettlement and land acquisition included in the appendix of the project progress reports expressed that, although there were some delays in land acquisition and resettlement, the projects were implemented properly overall. The reasons for the delay are as follows: (i) the residents did not cooperate with the government thinking that the land prices it offered were lower compared to the market price; (ii) time-consuming preparation for the asset inventories for land acquisition (buildings, etc.), determination of the appropriate price, and completion of the administrative procedures; and (iii) complicated and time-consuming removal of existing infrastructure facilities. Resulting from the actions of the implementing agencies and Hanoi City (reviewed the compensation within the scope of the law, charged agencies continued to negotiate with the residents, and held regular monitoring meetings at the working level), the land acquisition was deemed appropriately carried out. As described in "2.3 Constraints during the Evaluation Study," the evaluator could not confirm the minutes of the meetings of the relevant agencies about the resettlement and land acquisition or interview the residents on the current situation.

## 3) Unintended Position/Negative Impacts

A fatal accident occurred in 2012 involving a worker falling from a high place. The contractor submitted reports on the "Response Measures for Main Bridge Accident" and "Improvement of Temporary Facilities for Approach Bridge<sup>10</sup>," which were checked by the consultant and submitted to the implementing agency. The contractor took all possible safety measures per the response measures. No accidents involving a falling or a fatal accident occurred afterwards.

As described above, the implementation of the projects has generally produced the outcomes as planned. The impact of the projects, such as contributing to the development of the local economy to a certain extent, was also verified. Any negative impacts on the environment and society were also not observed, so the projects were considered to have achieved the objectives. Therefore, effectiveness and impacts of the projects are high.

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<sup>10</sup> Specific measures included tidying up framed scaffolds, putting up protective nets without gaps, improving the horizontal tension of scaffolds (to eliminate gaps), installing more handrails, having two people work on ladders, raising workers' safety awareness, and reviewing and complying with safety management procedures.

### 3.4 Sustainability (Rating: ③)

#### 3.4.1 Institutional/Organizational Aspects of Operation and Maintenance

Hanoi City is responsible for the O&M of Nhat Tan Bridge and the Connecting Road. The O&M is outsourced to maintenance contractors selected through a bidding process. The Transport Infrastructure Maintenance Board (hereinafter, referred as to “TIMB”) under the Hanoi DOT is responsible for making a contract with external service providers and supervising them on the O&M of the Nhat Tan Bridge and the Connecting Road. TIMB reviews the maintenance management plan every three months and has a system in place to check the activities of the contractors every month.

The selection basis of the bidding for the Nhat Tan Bridge and the Connecting Road is on the quality and cost. Commissioned service providers are responsible for the daily inspection and maintenance of the bridge and roads (patrolling, cleaning, painting, periodic bridge inspection, general inspection, repair of bridge components, etc.). During the handover of the Nhat Tan Bridge, the building contractor turned over to Hanoi DOT the necessary technical documents, such as the maintenance procedures, guidelines, handbooks, etc. On the other hand, TIMB prepared the bidding documents to outsource the maintenance according to these guidelines. The board also supervises and manages the maintenance of the bridge and roads.

According to TIMB, at the time of the ex-ante evaluation, the plan for the first medium-scale inspection was five years after the bridge is put into service. But based on the management of other bridges by Hanoi DOT, medium-scale inspections only happen 10 years after bridge construction. Therefore, the procedure is to conduct regular inspections and maintenance according to the guidelines until the 10 year after construction completion and to prepare a repair plan for any deficiencies or defects found during an inspection. After the 10 years of construction, TIMB plans to commission a contractor with extensive expertise in bridge inspection to conduct an overall inspection and then prepare for the repair plan. After that, preparation of an inspection and repair plan will be at a five to seven-year interval. The plan will be reported to the Hanoi DOT and the Hanoi People's Committee to implement the maintenance. In the same way for the Connecting Road, the basis for the necessary maintenance is the daily and regular inspections. The inspections will record any required repairs. In the same manner, the Connecting Road will also have a repair plan, and Hanoi City will allocate its budget and carry out repairs. The city has since budgeted the cost of maintenance and repair. Based on the above, no major problems have been found in the O&M management system of both projects.

#### 3.4.2 Technical Aspects of Operation and Maintenance

The Nhat Tan Bridge is the first cable-stayed bridge<sup>11</sup> in Hanoi, and there was a lack of

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<sup>11</sup> A cable-stayed bridge is a type of bridge where its cables stretched straight from the main towers directly support the bridge girders.

experience in its maintenance and management. But before its turnover to the Vietnamese side, the building contractor provided the MOT and the Hanoi DOT with the technical transfer of maintenance and management knowledge and skills, including inspection, maintenance, and repair methods. At that time, Hanoi City did not have maintenance and management standards or a supervision and management system, so producing those were necessary. The Hanoi DOT formulated the inspection and maintenance management standards and, in cooperation with the MOT and the contractor, provided training to the department's internal staff and TIMB staff. Currently, TIMB has responded that there are no technical problems in daily and periodic inspections as well as with the Connecting Road since it has the same road maintenance by Hanoi City.

TIMB is planning to outsource medium and larger scale inspections and repairs to external contractors with specialized skills. When contracting out inspections and repairs, specialized expertise is required for the preparation of technical specifications and evaluation of technical proposals, and it is essential to enhance the expertise and technical capabilities of TIMB staff. It has been conducting regular training courses on O&M of transportation infrastructure to improve the expertise and technical capabilities of its staff. In addition to TIMB, the bridge and road maintenance division staff of the DOT also have participated in the training. Based on the above information, the O&M knowledge and skills of both projects are believed to be without major problems.

### 3.4.3 Financial Aspects of Operation and Maintenance

Supposedly, MOT was to secure the O&M budget for both projects. Since the O&M was transferred to Hanoi City, the city budgets it. Compared to the estimated annual daily maintenance budget of 3.38 billion VND for Nhat Tan Bridge at the time of the ex-ante evaluation, the average maintenance expenditure of Hanoi was 9.3 billion VND for the period 2016–2020 (5 years). The average expenditure for the past five years was 1.8 billion VND, compared to the 2.2 billion VND estimated for the annual daily maintenance of the Connecting Road at the time of the ex-ante evaluation. The expenditure for Nhat Tan Bridge is more than the expected before the construction, and the expenditure for O&M of the Connecting Road is almost the expected amount.

**Table 3 O&M Expenditure for the Nhat Tan Bridge and Access Roads**

Year	2016	2017	2018	2019	2020
Budget amount (billion VND)	8.920	9.040	9.174	9.520	9.840

Source: Hanoi DOT

**Table 4 O&M Expenditure for the Connecting Road**

Year	2016	2017	2018	2019	2020
Budget amount (billion VND)	1.910	1.832	1.289	1.989	1.995

Source: Hanoi DOT

Based on the above, there are no major problems with the finances for O&M.

#### 3.4.4 Status of Operation and Maintenance

According to the results of the quarterly monitoring conducted by the TIMB, there have been no major problems in O&M so far. If there are any defects or deficiencies that need repairs, as mentioned above, a system is in place. TIMB formulates a repair plan based on the report of external contractors, Hanoi City budgets for the repair, and the repair will be implemented. In addition, none of the questionnaire survey responses (from a total of 23 from taxi, logistics, and tourist transportation companies) pointed out any deterioration or defects in the Nhat Tan Bridge or the Connecting Road. The field survey assistants did not find any problems in the condition of the Nhat Tan Bridge and the Connecting Road; therefore, the current maintenance and management system is considered to function well. Based on the above, it is concluded that there are no problems with the status of the O&M system.

No major problems have been observed in the institutional/organizational, technical, financial aspects and current status of the operation and maintenance system. Therefore, sustainability of the project effects is high.

## **4. Concussion, Lessons Learned and Recommendations**

### 4.1 Conclusion

The implementation of the Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I) (II) (III) and Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I) (II) aims to address the increasing traffic demand, to streamline logistics, to strengthen transportation capacity, and to alleviate traffic congestion. The construction of the Nhat Tan Bridge is under the Nhat Tan Bridge Project, which forms one end of the Ring Road 2, while the construction of the road connecting Nhat Tan bridge to Noi Bai International Airport is under the Connecting Road Project. Both projects are in line with Vietnam's development policy and development needs, as well as Japan's ODA policy to support the development of the international airport and the urban ring road network. The relevance of the projects is high especially since the international airport is the gateway to economic growth infrastructure (tourism, logistics, etc.). Both the project costs and the project periods exceeded the original plans, so the efficiency is fair. Analyzing the quantitative impacts of both projects, the projects nearly achieved the target. In the interview surveys with beneficiaries, they mentioned the travel time

from Hanoi city center to Noi Bai International Airport via the Connecting Road has shortened. It can be said that both projects have contributed to alleviating traffic congestion and improving the efficiency of logistics in Hanoi City. The effectiveness and impact are also high after confirming the proper implementation of the response and monitoring to the natural environment, resettlements, and the land acquisition based on the relevant laws and regulations of Vietnam. Hanoi City carries out the operation and management of both projects. When the Nhat Tan Bridge was turned over to the Vietnamese side, Hanoi City had no maintenance standards or supervision and management systems, so the Hanoi Department of Transport provided training to improve knowledge and skills to strengthen their capacity. Hanoi City secures a yearly O&M budget for both projects and has a budgeting system for medium-scale repairs, so it is deemed that no major problems have been observed in the institutional/organizational, technical, financial aspects and status of the O&M system. Therefore, the sustainability of the project effects is high.

In light of the above, this project is evaluated to be highly satisfactory.

#### 4.2 Recommendations

##### 4.2.1 Recommendations to the Executing Agency

None

##### 4.2.1 Recommendations to JICA

None

#### 4.3 Lessons Learned

##### Considerations for setting operational and effect indicators

Both projects were funded for multiple phases, and the operation and effect indicators have changed during the project periods. There was, however, no explicit explanation of reasons in the ex-ante evaluations or the documents exchanged with the recipient government. In case the operation and effect indicators change, it is important to explain the reasons in writing during the evaluation of each phase.

Comparison of the Original and Actual Scope of the Projects

Item	Plan	Actual
1. Project Outputs	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)</p> <p>(a) Bridge Construction Total length: 3,080 m (main bridge 1,500 m, north approach bridge 1,240 m, north embankment ridge 340 m) Structure: Cable-stayed bridge Traffic lane: Three lanes on each side and one mixed lane Roadway: Roadway width (one lane) 3.75 m</p> <p>(b) Approach Roads (1) South Approach Road Total length: 1,251 m (South approach road 576 m, Phu Thuong Interchange 400 m, south approach bridge 275 m) Traffic lane: Three lanes on each side and one mixed lane Roadway: Roadway width (one lane) 3.75 m (2) North Approach Road Total length: 4,800 m Traffic lane: Three lanes on each side and one mixed</p>	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)</p> <p>(a) Bridge Construction In accordance with plans</p> <p>(b) Approach Roads (1) South Approach Road In accordance with plans  (2) North Approach Road In accordance with plans</p> <p>(c) Consulting Service In accordance with plans</p>

Item	Plan	Actual
	<p>lane</p> <p>Roadway: Roadway width (one lane) 3.75 m</p> <p>This approach road includes the construction of three interchanges</p> <p>(c) Consulting Services F/S review, detailed design, bidding support, construction management, monitoring during the defect liability period, HIV/AIDS prevention program, and environmental and social considerations monitoring program</p>	
	<p>Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)</p> <p>(a) Road Construction</p> <p>(1) New high standard road Total length: 7.85 km (from Nam Hong Interchange to the beginning of Noi Bai Airport road) Traffic lane: 6 lanes (3 lanes on each side) Width: 31.0 m</p> <p>(2) Widening of existing road Length: 4.25 km (Noi Bai Airport road) Traffic lane: 6 lanes (3 lanes</p>	<p>Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)</p> <p>(a) Road Construction</p> <p>(1) New high standard road In accordance with plans</p> <p>(2) Widening of existing road In accordance with plans</p> <p>(3) New side roads running parallel to the main road In accordance with plans</p> <p>(4) Other structures: 6 bridges and a toll booth The construction of the toll booth was abandoned</p>



Item	Plan	Actual
	<p>on each side)  Width: 52.5 m (including 25.0 m median strip)  (3) New side roads running parallel to the main road  (4) Other structures: 6 bridges and a toll booth</p> <p>(b) Consulting Services  Construction management, implementation of safety measures related to construction, implementation of HIV/AIDS measures, monitoring of environmental and social considerations</p>	<p>(b) Consulting Services  In accordance with plans</p>
<p>2. Project Period</p>	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)  March 2006–December 2012  (82 months)</p> <p>Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)  March 2010–October 2013  (46 months)</p>	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)  March 2006–December 2014  (106 months)</p> <p>Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)  March 2010–December 2014  (58 months)</p>
<p>3. Project Cost</p> <p>Amount Paid in Foreign Currency</p> <p>Amount Paid in Local Currency</p>	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)</p> <p>23,390 million yen</p> <p>28,278 million yen  (2,884,495 million VND)</p>	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III)</p> <p>48,278 million yen</p> <p>14,362 million yen  (1,967,547 million VND)</p>

Item	Plan	Actual
Total	51,668 million yen	62,640 million yen
ODA Loan Portion	39,027 million yen	49,908 million yen
Exchange Rate	1 VND = 0.00703 yen (As of October 2005)	1 VND = 0.00538 (October 2005–December 2015 Average)
	Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)	Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II)
Amount Paid in Foreign Currency	2,228 million yen	2,976 million yen
Amount Paid in Local Currency	30,039 million yen (5,383,333 million VND)	24,001 million yen (6,067,205 million VND)
Total	32,267 million yen	26,957 million yen
ODA Loan Portion	21,603 million yen	16,588 million yen
Exchange Rate	1 VND = 0.00558 yen (As of October 2009)	1 VND = 0.00477 yen (September 2009–May 2015 Average)
4. Final Disbursement	<p>Nhat Tan Bridge (Vietnam-Japan Friendship Bridge) Construction Project (I)(II)(III) August 2014 (Phase I) February 2016 (Phase II) March 2020 (Phase III)</p> <p>Noi Bai International Airport to Nhat Tan Bridge Connecting Road Construction Project (I)(II) July 2015 (Phase I) March 2020 (Phase II)</p>	