

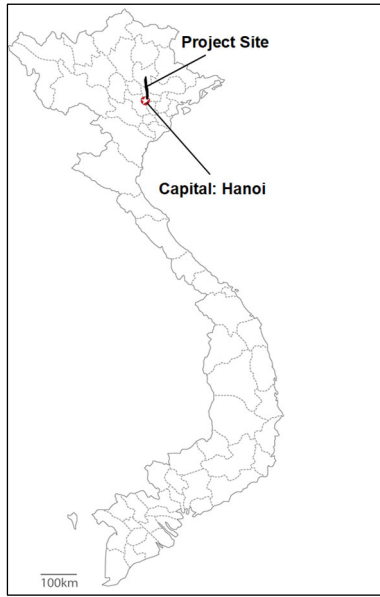
FY2020 Simplified Ex-Post Evaluation Report of Japanese ODA Loan Project

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Duration of the Study: November 2020—January 2022

Duration of the Field Study: May 10, 2021—June 28, 2021

Country Name	(ODA Loan) New National Highway No.3 and Regional Road Network Project (I) (II)
Socialist Republic of Viet Nam	



Location of the project site



National Highway No. 3 constructed by the project

I. Project Outline

Background	<p>National Highway No. 3, which runs between Hanoi and Thai Nguyen, is part of the major road network connecting Hanoi City and Thai Nguyen City with international logistics hubs such as Noi Bai International Airport, Hai Phong Port and Cai Lan Port in the northern part of Hanoi City. Thai Nguyen City, where National Highway No. 3 terminates, is located about 60 km to the north of Hanoi City. It is an emerging industrial city and is a key area for economic activities in the northern Vietnam. Before the project, driving safety on the existing National Road No. 3, however, was not fully secured and there were many traffic accidents, partly because of mixed traffic of large trucks and motorcycles on the road. Thus, there was an urgent need for the construction of an automobile expressway, which would divert the traffic volume and contribute to the safety of local residents. As there were some poor areas along the existing National Road No. 3, the project was also expected to improve the livelihood of local residents, including the poor, by improving their access.</p>
Objectives of the Project	<p>The objective of the project was to cope with increasing traffic volume and to improve accessibility and safety for the road users by constructing a bypass road (high-standard road) of National Highway No. 3 and improving the related feeder roads in northern Vietnam, thereby contributing to the promotion of economic and social development for the region, promotion of economic growth and strengthening of international competitiveness of Vietnam.</p>
Contents of the Project	<ol style="list-style-type: none"> 1. Project Site: Northern part of Hanoi (About 60 km from Hanoi City to Thai Nguyen City, Thai Nguyen Province) 2. Japanese side <ol style="list-style-type: none"> 1) Civil works, procurement of equipment, etc. <ul style="list-style-type: none"> • Construction of a new National Highway No. 3 high-standard road (about 60 km) from Hanoi City to Thai Nguyen Province • Improvement of feeder roads that contribute to poverty reduction and construction of interchanges connecting high-standard road with related feeder roads and the existing national roads. • Construction of Michi no Eki (rest facilities) • Traffic safety measures (intersection improvement, installation of traffic safety facilities such as reflective road studs and traffic signs, etc.) • Introduction and installation of maintenance equipment for high-standard road (information and communication equipment, inspection and road maintenance vehicles, etc.) and toll plaza and Intelligent Transport System (hereinafter referred to as “ITS”) 2) Consulting services <ul style="list-style-type: none"> • Detailed design, tender assistance and construction supervision • Technical support for operation and maintenance of automobile expressway • Preparation of draft operational implementation plan of Michi no Eki • Implementation of safety measures for construction • Implementation of HIV/AIDS countermeasures for construction workers, etc. 3. Vietnamese side: <ul style="list-style-type: none"> • Land acquisition, resettlement, etc.

Implementation Schedule	E/N Date	March 31, 2005 (Phase I) March 30, 2012 (Phase II)	Disbursement Date	July 29, 2013 (Phase I) July 29, 2019 (Phase II)
	L/A Date	March 31, 2005 (Phase I) March 30, 2012 (Phase II)	Completion Date	January 2014 (At the start of facility operation)
Project Cost	Total Project Cost (Planned): 35,357 million yen Loan Approved Amounts: 12,469 million yen (Phase I), 16,486 million yen (Phase II) Disbursed Amounts: 12,415 million yen (Phase I), 16,379 million yen (Phase II)			
Executing Agency	Ministry of Transport (MOT)			
Conditions (Loan only)	<ul style="list-style-type: none"> • (Phase I) Interest Rate: 1.3%, Repayment Period: 30 year (of which, Grace Period: 10 years), General Un tied • (Phase II) Interest Rate: 1.4% (Consulting Services: 0.01%), Repayment Period: 30 year (of which, Grace Period: 10 years), General Un tied 			
Borrower (Loan only)	The Government of the Socialist Republic of Viet Nam			
Contracted Agencies	Main Contractors: Truong Son Construction Corp. (Vietnam) / Vinaconex (Vietnam), Thang Long Construction Corporation (Vietnam) / Civil Engineering Construction Corporation No.8 (Vietnam) / Civil Engineering Construction Corporation No.1 (CIENCO 1) (Vietnam) (JV), Thang Long Construction Corporation (Vietnam) / Civil Engineering Construction Corporation No.8 (Vietnam) / Truong Son Construction Corp. (Vietnam) / Vietnam Construction & Import-Export Corporation (Vietnam) / Vinaconex (Vietnam) (JV), Thang Long Construction Corporation (Vietnam) / Civil Engineering Construction Corporation No.8 (Vietnam) (JV) Main Consultants: Nippon Koei Co., Ltd. (Japan) / Japan Bridge & Structure Institute, Inc. (Japan) (JV) Agent: N.A.			

II. Result of the Evaluation

Summary									
<p>This project newly constructed a bypass road (high-standard road) of National Highway No. 3 connecting Hanoi City and Thai Nguyen City and feeder roads with the aim of coping with the increasing traffic volume of the existing National Road No. 3 and improving accessibility and safety for the road users. The project, which aims to improve the efficiency of logistics in the northern region of Hanoi and contribute to the improvement of livelihoods of local residents, including the poor, is consistent with Vietnam's development policy, development needs and Japan's ODA policy which puts up supporting the development of economic and social infrastructure. Therefore, the relevance of the project is high. In terms of project implementation, although the project period was within the plan, the project cost exceeded the plan. Therefore, the efficiency of the project is fair. As for project effects, the project has shortened the travel time and reduced the travel cost. The actual traffic volumes of each of the existing National Road No. 3 and the new National Highway No. 3 developed by the project were slightly lower than 80% of the target. This is mainly due to the fact that the shift of traffic volume to the new National Highway No. 3 was not as much as initially expected, as the existing National Road No. 3 was upgraded and improved separately by the Vietnamese side to improve its convenience, as well as the extension plan of the new National Highway No. 3 to the northern region was delayed and the road network leading to the region is not yet developed, thus the traffic volume has not increased as much as expected. From the results of interviews with road users and local residents, it was confirmed that the project has increased the efficiency of logistics and improved the livelihood of local residents. In addition, the project has contributed to the promotion of economic and social development in the northern region of Vietnam. Therefore, the project has mostly achieved its objectives and the effectiveness/impact of the project is high. No negative impacts on natural environment have been reported, and resettlement and land acquisition process has been carried out appropriately in accordance with the relevant regulations of Vietnam, thus, no problem has been seen. Regarding operation and maintenance, no major problem has been observed in the institutional/organizational, technical and financial aspects of operation and maintenance as well as in the current status. In addition, roads are well maintained and operated in good condition. Therefore, the sustainability of the project effects is high.</p> <p>In light of the above, this project is evaluated to be highly satisfactory.</p>									
Overall Rating¹	A	Relevance	③²	Effectiveness & Impact	③	Efficiency	②	Sustainability	③
<Special Perspectives Considered in the Ex-Post Evaluation/Constraints of the Ex-post Evaluation>									
<p>In this study, due to the global spread of COVID-19, the external evaluator could not travel to Vietnam. Instead, the local consultant was utilized remotely to visit the project site to conduct the actual inspection, information and data collection, and interviews with project related personnel, etc. For this reason, the external evaluator could not directly visit the site to check the outputs or conduct interviews with stakeholders and beneficiaries, etc. and thus conducted the evaluation analysis and judgment by closely examining the information and data obtained through the remote surveys.</p>									
I Relevance									
<Consistency with the Development Policy of Vietnam at the Time of Ex-Ante Evaluation>									
<p>(Phase I) In the <i>Socio-Economic Development 10-year Strategy (2001-2010)</i>, the Vietnamese government set forth the linkage between development and poverty reduction, and ensuring sustainable economic growth focusing on economic development centers. The project was also planned as one of the high-standard road development network in the <i>Road Development Master Plan to 2010 and Orientation Up to 2020</i>.</p> <p>(Phase II) In the <i>Ninth Social Economic Development Five-Year Plan (2011-2015)</i>, the Vietnamese government indicated the further</p>									

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

development of infrastructure system, including the improvement of transportation infrastructure, as the most important issue for sustainable development under high growth. In particular, with regard to the expressways, including the high-standard road constructed by the project, the *Master Plan for Expressways until 2020 and Vision after 2020* (Prime Minister’s Decision No. 1734, December 1st, 2008) was formulated and priority was given to the development of the expressways. In addition, the target section of the project (between Hanoi and Thai Nguyen) was considered as a priority section in the target region’s transportation sector development plan, *Plan for Transport Development in the Northern Economic Priority Areas until 2020 and Directions until 2030* (Prime Minister’s Decision No. 5, January 24th, 2011).

<Consistency with the Development Needs of Vietnam at the Time of Ex-Ante Evaluation>

The existing National Highway No. 3 is close to Noi Bai International Airport, and with development plans such as Soc Son Industrial Park and Thai Nguyen City Plan, rapid increase in traffic volume was expected to continue. In addition, the existing National Road No. 3 was not fully safe enough partly due to mixed traffic of large trucks and motorcycles on the road, resulting in many traffic accidents. Therefore, there was an urgent need for the construction of automobile expressway, which would divert the traffic volume and contribute to the safety of local residents. In addition, since there were poor areas along the existing National Road No. 3, the project was also expected to improve the livelihood of local residents, including the poor, by improving their access.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

(Phase I) In the Japanese government’s *Country Assistance Program for Vietnam* (April 2004), emphasis was placed on support for international and domestic trunk line transportation (northern and southern economic growth priority areas and north-south trunk line) and urban transportation (Hanoi City and Ho Chi Minh City). In addition, *Overseas Economic Cooperation Operations* of JICA (then JBIC) stated that it would provide support for the development of economic and social infrastructure and technical cooperation for the improvement of operation and maintenance systems after the completion of projects. It also stated that JICA would strengthen its response to poverty alleviation measures. Furthermore, the *Country Assistance Strategy* indicated that JICA would support the development of road network in the northern region of Hanoi.

(Phase II) The Japanese government’s *Country Assistance Program for Vietnam* (July 2009) stated that it would consider appropriate priorities and roadmaps with regard to intercity trunk transportation networks, and provide support that takes into account selection and concentration. In addition, JICA has identified the development of trunk transportation network as priority, and indicated that it would promote the development of physical infrastructure as well as put emphasis on human resource development and quality assurance, etc. for operation and maintenance of the increasing transportation infrastructure assets.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

(Quantitative Effects)

At the time of the ex-ante evaluation, “annual average daily traffic (vehicle),” “travel time saving (minutes/vehicle),” and “travel cost saving (Vietnamese Dong (hereinafter referred to as “VND”)/year)” were set as quantitative effects of the project. Table 1 summarizes the baselines, the targets, and the actual figures for each indicator measured and calculated under the same conditions at the time of the ex-ante evaluation. As the project completion is in January 2014 (at the start of facility operation), the target year to be compared is 2016, which is 2 years after completion.

- Annual average daily traffic: The actual figures for 2016 are 5,000 vehicles for the existing National Road No. 3 and 20,100 vehicles for the new National Highway No. 3, with achievement rates of 78% and 75%, respectively. The reasons why the achievement rates were slightly below 80% are that (1) the existing National Road No. 3 was upgraded and enhanced separately by the Vietnamese side to improve its convenience, and the shift in traffic volume was considered to be less than initially expected, and (2) the extension plan of the new National Highway No. 3 to the northern region of Vietnam is delayed and the road network connecting the northern region of Vietnam is not yet developed and thus the traffic volume is considered not to have increased as much as expected. According to the executing agency, a section connecting Thai Nguyen Province and Cho Moi District in Bac Kan Province (about 40.3 km) is planned to be constructed under the BOT scheme³ after 2021.
- Travel time saving: Judging from the project objective, the goal of the project is to reduce travel time required for the existing National Road No. 3 before and after the new National Highway No. 3 is put into service. The actual travel time reduction of the existing National Road No. 3 in 2016 was 22 minutes and 38 seconds,⁴ and the achievement rate is 100%.
- Travel cost saving: In 2016, the actual figure was 247.37 billion VND, which is 101% of the target (245 billion VND).

³ A BOT scheme (Build, Operate and Transfer Scheme) is a scheme in which private operators raise its own funds, build, operate and manage facilities for a certain period of time, and then transfer the ownership at the end of the period.

⁴ The reduced time of 22.63 minutes (in decimal notation) in Table 1 is converted to minutes and seconds in sexagesimal notation.

Table 1: Quantitative effects of the project

Indicators	Baseline	Target	Actual
	2004 Baseline Year	2016 2 Years after Completion	2016 (Note 1)
Annual average daily traffic (vehicle) (at KM33+500 point) (Note 2)	(existing National Road No. 3) 6,113	(existing National Road No. 3) 6,400 (new National Highway No. 3) 26,800	(existing National Road No. 3) 5,000 (new National Highway No. 3) 20,100
Travel time saving (minutes/vehicle)	(existing National Road No. 3) — (actual travel time is 86.55 minutes)	(existing National Road No. 3) 22.63 (=86.55-63.92) (target travel time is 63.92 minutes)	(existing National Road No. 3) 22.63 (=86.55-63.92)
Travel cost saving (VND/year) (Note 3)	—	245 billion	247.37 billion

Source: Ex-ante evaluation report for Phase II project and results from questionnaire survey of the executing agency

Note 1: As the project completion is in January 2014 (at the start of facility operation), the target year to be compared is 2016 (2 years after completion).

Note 2: KM indicates the point in terms of distance from Hanoi (KM0).

Note 3: Benefits of vehicle operating cost savings and benefits of passenger travel time savings. Over the total project life (30 years), the ratio of vehicle operating cost savings benefits and passenger travel time saving benefits is almost 50/50 (50.3% : 49.7%).

(Reference Data)

As the actual data for 2019 and 2020 for the above indicators were obtained in the survey, they are shown in the table below as reference data. The reason for regarding the data as reference is that the data was not collected under the same conditions as those set at the time of the ex-ante evaluation, making it difficult to analyze the trends in a consistent manner.

- Annual average daily traffic: Traffic volumes on the new National Highway No. 3 show a decreasing trend compared to 2016, which may be due to the fact that the data was not collected under the same conditions as those set at the time of the ex-ante evaluation, as described above, and also due to travel restrictions caused by measures against COVID-19. Traffic volumes on the existing National Road No. 3 show an increasing trend compared to 2016, but again the data was not collected under the same conditions as set at the time of the ex-ante evaluation. While there may have been some effects of travel restrictions due to measures against COVID-19, the degree of impacts may have been relatively small because the road is more closely connected to the daily lives of local residents.
- Travel time saving: There were no factors that would cause significant changes in the travel time on the existing National Road No. 3 in 2019 or 2020, and the figures are unchanged. Travel time on the new National Highway No. 3 was actually measured by the local consultant in May 2021, and it was about 40 minutes. (The legal maximum speed of the new National Highway No. 3 is 100 km/h.) It is a time saving of 46 minutes and 33 seconds⁵ compared to the actual time of the existing National Road No. 3 in 2004 (86.55 minutes) as shown in Table 1.
- Travel cost saving: Benefits of vehicle operating cost saving and benefits of passenger travel time saving have increased and are both higher than the actual figures for 2016.

Table 2: Reference data for quantitative effects

Indicators	Actual	
	2019	2020
Annual average daily traffic (vehicle) (Note 1) (Note 2)	(existing National Road No. 3) 7,959 (new National Highway No. 3) 11,437	(existing National Road No. 3) 9,225 (new National Highway No. 3) 11,601
Travel time saving (minutes/vehicle) (Note 3)	(existing National Road No. 3) 22.63	(existing National Road No. 3) 22.63
Travel cost saving (VND/year)	301.7 billion	322.36 billion

Source: Results from questionnaire survey of the executing agency

Note 1: The measurement point on the existing National Road No. 3 is KM91+850. The point is not on the existing National Road No. 3 between Hanoi and Thai Nguyen, but almost at the midpoint between Thai Nguyen and Cho Moi, which is north of Thai Nguyen.

Note 2: The measurement point on the new National Highway No. 3 is KM 16+900. The point is at the intersection with the National Highway No. 18, which is 16.6 km south of KM 33+500, closer to Hanoi.

Note 3: The figures for 2019 and 2020 are the travel time savings calculated using the same figures based on the recognition that travel would be possible at the actual travel speed measured in 2016. Travel time for the new National Highway No. 3 measured by the executing agency was 45 minutes (2019 and 2020), which is 41 minutes and 33 seconds⁶ shorter than the actual time for the existing National Road No. 3 in 2004.

⁵ The reduced time of 46.55 minutes (in decimal notation) is converted to minutes and seconds in sexagesimal notation.

⁶ The reduced time of 41.55 minutes (in decimal notation) is converted to minutes and seconds in sexagesimal notation.

(Qualitative Effects)

“Improvement of efficiency of passenger and cargo transportation by reducing congestion on the existing national road” and “improvement of living environment of local residents by reducing poverty and traffic accidents, etc.” were set as qualitative effects of the project.

As a result of interviews with road users and local residents,⁷ all respondents said, “The existing national road was congested and crowded before the project, but as a result of the project, a new national highway became available, and traffic on the existing national road was diverted to the new national highway, which has eased traffic congestion and improved the efficiency of passenger and cargo transportation.”⁸ Respondents also supported the fact that the project has contributed to the increased employment opportunities and income for the local residents. For example, taxi drivers and local residents said, “The economy along the road has been revitalized due to the development of industrial parks, etc. and travel to Hanoi has become easier. Local residents have also increased the source of income.” “The use of new national highway has made our travel much smoother.” “We are very satisfied with the project as it has reduced the travel time and saved fuel.” Furthermore, the respondents indicated that the project has reduced the number of traffic accidents and improved safety and safe driving. For example, truck and bus drivers responded, “I feel that traffic accidents have been reduced because the new national highway constructed by the project has eased congestion on the existing national road,” and “I often drive on the new national highway at night and I can drive with confidence because traffic safety facilities such as reflective road studs and traffic signs have been installed.”

<Impacts>

(1) Promotion of Economic Development in the Areas Surrounding Hanoi City

“Promotion of economic development in the areas surrounding Hanoi City” was regarded as the expected impacts of the project. In interviews with the executing agency and road users,⁹ the following comments were made. “The establishment of interchanges with feeder roads and the existing national roads by project has improved the road network along the project by connecting the old National Road No. 3 and the new National Highway No. 3, as well as the National Highway No. 1, the National Highway No. 18, the Provincial Highway No. 296, and the Thai Nguyen Bypass, etc. In addition, access between the northern area of Hanoi and international logistics hubs such as Noi Bai International Airport, Hai Phong Port, and Cai Lan Port has been improved.” In addition to the road users mentioned above, the results of interviews with the Department of Transport, Thai Nguyen Province and the People’s Committee of Pho Yen District in Thai Nguyen Province, where the new National Highway No. 3 passes through, showed that all the respondents agreed that after the project, industrial parks and commercial areas have been developed along the new national highway and logistics have become more active, promoting the development of the local economy. According to the Transportation Department of the Thai Nguyen Provincial People’s Committee, Pho Yen District was mainly a rural area before the project, but large industrial estates such as Yen Binh, Dien Thuy, and Song Cong have been built in the area, and after the development of the new national highway, industries has developed, and the project has greatly contributed to increasing the Province’s income.

It is difficult to verify direct correlation with the project since economic development is also affected by factors other than the project. However, in order to confirm the assumptions made at the time of the ex-ante evaluation, the trends of Gross Regional Domestic Product (hereinafter referred to as “GRDP”) growth rates, industrial production and Foreign Direct Investment (hereinafter referred to as “FDI”) after the project in Hanoi City, Thai Nguyen Province and Bac Ninh Province where the new National Highway No. 3 and the existing National Road No. 3 pass are shown in the tables below.

Table 3: Trend of GRDP growth rates

(Unit: % (2010 Standard))

	2015	2016	2017	2018	2019
Hanoi City	9.2	7.2	7.4	7.2	7.6
Thai Nguyen Province	33.2	16.4	12.8	10.4	9.0
Bac Ninh Province	8.9	6.2	19.1	11.3	1.1

Source: Statistics Offices in Hanoi City, Thai Nguyen Province and Bac Ninh Province

Table 4: Trend of industrial production

(Unit: indexed using 2010 figures as 100)

	2015	2016	2017	2018	2019 (Note)
Hanoi City	108.3	107.3	115.9	115.8	117.5
Thai Nguyen Province	176.0	123.7	208.2	197.3	195.5
Bac Ninh Province	112.0	105.1	151.8	120.3	99.2

Source: General Statistics Office of Vietnam

Note: Preliminary figures

⁷ The breakdown of the interviewees is as follows.

- Road users (7 people): 2 taxi drivers, 2 truck drivers, 1 bus driver, 1 company car driver, and 1 seller.
- Local residents (2 people): 2 residents who had to resettle due to the project.

⁸ Specifically, there were following responses.

- Before the project, it took about 20 minutes to travel from Da Phuc District to Pho Yen District (about 10 km) using the existing national road, but after the project, the congestion on the existing national road was eased and the same section can be traveled in 15 minutes. (seller)
- Before the project, it took three and a half hours to travel from Hanoi City (center) to Thai Nguyen using the existing national road, but after the project, it takes only one and a half hours using the new national highway. (taxi driver)
- Before the project, it took one hour to travel from Samsung Electronics Thai Nguyen Factory to Soc Son District (about 45 km) using the existing national road, but after the project, it takes only 30 minutes using the new national highway. (taxi driver)
- Before the project, it took two hours to travel from Tan Long District to Hanoi (about 70 km) using the existing national road, but after the project, it now takes one and a half hours using both the new national highway and the existing national road. (truck driver)

⁹ The interviewees are the same as the interviewees listed in Footnote 7.

Table 5: Trend of FDI

(Unit: million USD)

	2015	2016	2017	2018	2019
Hanoi City	1,400	2,800	2,669	7,501	8,400
Thai Nguyen Province	200	132	16	387	368
Bac Ninh Province	3,574	912	3,491	1,443	1,696

Source: Statistics Offices in Hanoi City, Thai Nguyen Province and Bac Ninh Province

All figures are not necessarily on the steady increase, however, based on the above interview results, it can be assumed that the project has contributed to the economic development to some extent.

(2) Other Positive and Negative Impacts

① Impacts on the Natural Environment

The project is a large-scale road development project and classified as category A in the *JBIC Guidelines for Confirmation of Environmental and Social Considerations* (April 2002). The Environmental Impact Assessment (EIA) report for the project has been approved by the Ministry of Natural Resources and Environment in September 2004. The executing agency prepared and implemented the environmental management plan in accordance with the EIA during the project, and conducted environmental monitoring based on the plan. According to the executing agency and the Japanese consultant in charge of construction supervision, environmental monitoring of air quality, water quality, noise, vibration, waste, etc. was conducted every three months during the project. As a result, air quality and noise exceeded the standards partially, but mitigation measures such as watering the construction site and planting trees were taken, and overall there were no major problems.

Clams were made that the houses of 27 households in Pho Yen District, Thai Nguyen Province, were cracked due to vibrations during construction, but after discussions with the Thai Nguyen National Assembly Delegation, repair work was carried out and the problem was resolved. When checked with the People's Committee of the Pho Yen District, the restoration work was conducted after consultants were hired to conduct a validation survey. People's Committee of the District told that they prepared records related to the case and that the problem was resolved.

According to the executing agency and the Japanese consultant in charge of construction supervision, since the new National Highway No. 3 was constructed away from the residential areas, soundproof walls were not installed. They also said that there were no major complaints from the residents. In addition, as a result of interviews with road users and local residents, it was confirmed that there were no particular indications of negative impacts on the natural environment during and after the project.

② Impacts on the Social Environment (Land Acquisition and Resettlement)

As a result of the project, 5,239,371m² of land acquisition has taken place and 695 households have involuntarily resettled. According to the executing agency, land acquisition and resettlement was carried out by the District People's Committees in accordance with the Vietnamese national procedures and resettlement plan. In acquiring the land, the road alignment was adjusted to minimize impacts on historic sites, temples and other religious sites, and elementary schools. Regarding resettlement, public hearings, consultations, and negotiations on the amount of compensation have been conducted successively. Although it took some time to reach agreements on the amount of compensation and contents of support with some residents, consensus was reached through discussions and no complaints were reported. In Hanoi, residents who have given up their agricultural land have been provided with job training and compensation equivalent to 5 times the price of their agricultural land.

The District People's Committees were also in charge of developing basic infrastructures (water, electricity, etc.) at the resettlement site. Consideration was given to minimize negative impacts, such as relocating the entire community to the same site.

According to the executing agency, the resettled residents are basically satisfied with the infrastructure and the living environment at the resettlement site, and there have been no complaints. In particular, Ninh Hiep Commune in Hanoi is a very developed area with business activities and has the same values as the neighboring urban areas, and indicated that the level of satisfaction of the resettled residents is particularly high.

According to the People's Committee of Pho Yen District, Thai Nguyen Province, where 200 households have involuntarily resettled, resettlement was carried out in accordance with the Vietnamese national procedures and the resettlement action plan, and no particular problems have occurred. In addition, the resettlement site has basic infrastructure in place with good living environment, and there have been no complaints from the residents.

As a result of interviews with 2 resettled residents living in the Cong Moi Area (one of whom was in charge of communication, coordination, and negotiation with the District People's Committee as a representative of the resettled residents), there were no particular problems with the resettlement process, the amount of compensation, or the state of infrastructure in the resettlement area. There were no complaints from the residents and they were satisfied with their living environment. After resettlement, about 80% of the residents have changed their means of livelihood from farming to trading, and their livelihood has at least recovered compared to the situation before the resettlement. The area is home to the Samsung Electronics Thai Nguyen Factory, and many residents have entered into rental businesses to earn rental income.

③ Other Impacts: Measures Against HIV/AIDS Infection for Construction Workers, etc.

During the construction period, HIV/AIDS prevention programs were conducted, led by the consultant in charge of construction supervision in collaboration with the executing agency. According to the consultant in charge of construction supervision, HIV/AIDS testing was conducted regularly every 6 months for all construction-related personnel, and education and awareness raising activities were also carried out. As a result, awareness of people concerning HIV/AIDS countermeasures increased and the program turned out to be effective.

<Evaluation Result>

As quantitative effects of the project, three indicators of “annual average daily traffic,” “travel time saving” and “travel cost saving” were set at the time of the ex-ante evaluation. At the time of the ex-post evaluation, travel time saving and travel cost saving have reached the targets. The annual average daily traffic was slightly lower than 80% of the target, but this is mainly due to the fact that the shift of traffic volume to the new National Highway No. 3 was not as much as initially expected, as the existing National Road No. 3 was upgraded and improved separately by the Vietnamese side to improve its convenience, and the extension plan of the new National Highway No. 3 to the northern region was delayed and the road network leading to the region is not yet developed, thus the traffic volume has not increased as much as expected. From the results of interviews with road users and local residents, it was confirmed that the project has increased the efficiency of logistics and improved the livelihood of local residents. In addition, the project has contributed to the promotion of economic and social development in the northern region of Vietnam. Therefore, the project has mostly achieved its objectives and the effectiveness/impact of the project is high.

3 Efficiency

<Outputs>

Since the project is a sliced project¹⁰ for which the ODA loan was provided into phases I and II, in the analysis of efficiency, the entire project was considered as one project, and the project scope (outputs) was analyzed as a whole to make evaluation decisions.

A comparison of the planned and actual major outputs of the project is shown in Table 6. Construction of the Michi no Eki (rest facilities), introduction and installation of maintenance equipment for high-standard road (information and communication equipment, inspection and road maintenance vehicles, etc.), and toll plaza and ITS facilities were excluded from the scope of the project. This was the Vietnamese side’s response to the shortage of the ODA loan funds due to the sharp rise in the prices of construction materials and equipment and the depreciation of the yen during the project period. The executing agency notified JICA Vietnam Office that it would exclude these items from the project scope and consider their development under the BOT scheme.¹¹ In response to this, JICA agreed with this as a result of examining the policy based on the consistency and legality with the Japanese government’s grant policy and the ODA loan agreement. In addition, although the development of the excluded scope by the BOT scheme is not subject to JICA’s concurrence, JICA required the Vietnamese side to provide information. Therefore, the exclusion of some scope was a modification in response to the changes in various conditions during the project, and JICA agreed to the scope change after confirming that (1) the scope change did not violate the project purpose of the loan agreement, (2) consistency with the Japanese government’s grant policy is maintained even after the scope change and (3) the scope change relates to the road ancillary structures, and it does not correspond to a fundamental change to the project. In light of the above, it can be considered that the changes were reasonable.

Table 6: Comparison of planned and actual major outputs

Plan	Actual (Comparison)
Civil works, procurement of equipment, etc.	
Construction of a new high-standard road (about 60 km) of National Highway No. 3 from Hanoi City to Thai Nguyen Province.	As planned.
Improvement of feeder roads that contribute to poverty reduction and construction of 6 interchanges between high-standard road and feeder roads or the existing national roads.	As planned.
Construction of Michi no Eki (rest facilities)	Excluded from the project.
Traffic safety measures (intersection improvement, installation of traffic safety facilities such as reflective road studs and traffic signs, etc.)	Mostly as planned. (The intersection improvement was planned as plane intersection, but was changed to three-dimensional intersection.)
Introduction and installation of maintenance equipment for high-standard road (information and communication equipment, inspection and road maintenance vehicles, etc.), toll plaza and ITS	Excluded from the project.
Consulting services	
Detailed design, tender assistance and construction supervision	As planned.
Technical support for the operation and maintenance of automobile expressway	As planned.
Development of draft operation implementation plan of Michi no Eki	As planned.
Implementation of safety measures for construction	As planned.
Implementation of HIV/AIDS measures for construction workers, etc.	As planned.

Source: Results from questionnaire survey of the executing agency and interview with the Japanese consultant in charge of construction supervision

<Inputs>

The total project cost was initially planned to be 35,357 million yen (out of which 28,955 million yen was to be covered by the Japanese ODA loan). In actuality, the total project cost was 40,764 million yen (out of which 28,794 million yen was covered by the Japanese ODA loan), which exceeded the plan (115% of the planned amount). This was due to the significant increase in project cost caused by the sharp rise in the prices of construction materials and equipment as well as the effects of the yen’s depreciation. According to the executing agency, between 2011 and 2013, cement price increased by 65%, diesel price increased by 98%, steel price increased by 65%, and asphalt price

¹⁰ For large-scale projects, projects are divided into phases by period and are implemented in accordance with their progress.

¹¹ At the time of the ex-post evaluation, the ITS and toll collection systems were not in place, and there was no concrete prospect of the BOT project by the Vietnamese side. According to the executing agency, in the National Assembly Standing Committee’s Resolution dated October 21, 2017 (No. 437/NQ-UBTVQH14), the project implementation policy using the BOT scheme was reviewed, and in response, Document No. 1284/ TTg-CN on suspension of implementation under the BOT scheme was issued on September 21, 2018. On the other hand, for the Michi no Eki, it was agreed between the executing agency and the People’s Committee of Thai Nguyen Province to build and develop Hai Dang Station at KM 36. Michi no Eki has been in operation since March 2019.

increased by 86%. The depreciation of the Japanese yen against the local currency VND¹² was also a factor in the increase in project cost. Therefore, although some project scope was excluded as a countermeasure to the significant increase in project cost, the total project cost exceeded the plan due to the factors that increased the cost beyond that.

Project period (from signing of loan agreement of Phase I to the start of facility operation) was planned to be from March 2005 to April 2014 (110 months), but in actuality, it was from March 2005 to January 2014 (107 months), which was within the plan (97% of the initial plan). In reality, there were delays of about 28 months in the selection of contractors¹³ and about 35 months in the land acquisition and resettlement. However, these delays did not affect the project period because the project completion was defined as “at the start of facility operation.” Specifically, the opening ceremony of the project was conducted in January 2014 (soft opening), and the high-standard road of National Highway No. 3 started its service. According to the executing agency and the Japanese consultant in charge of construction supervision, the process of land acquisition and resettlement continued until February 2015, after the facility was put into service, and the construction of guardrails and other facilities were not completed at the start of facility operation.¹⁴

It should be noted that the excluded scope from the project were all related to the ancillary structures of the road, and not related to the basic scope of “construction of a new high-standard road (about 60 km) of National Highway No. 3 from Hanoi City to Thai Nguyen Province.” Therefore, the scope reduction did not affect the timing of the start of facility operation.

Table 7: Comparison of planned and actual project period for each item

Item	Plan	Actual
Consulting services	October 2005–July 2014 (106 months)	November 2005–December 2015 (122 months)
Selection of contractors	October 2006–June 2007 (9 months)	January 2007–January 2010 (37 months)
Civil works	July 2007–April 2014 (82 months)	December 2009–January 2014 (50 months)
Start of operation of facilities	April 2014	January 2014
Land acquisition	July 2005–March 2012 (81 months)	July 2005–February 2015 (116 months)

Source: Information provided by JICA, project completion report, results from questionnaire survey of the executing agency, and interview with the Japanese consultant in charge of construction supervision

Note 1: The start of the consulting services (plan) is the start time set at the time of Phase 1 planning (October 2005), and the end is the closing time set at the time of Phase 2 planning (July 2014).

Note 2: Selection of contractors (plan) is the planned schedule at the time of Phase 1 planning.

Note 3: The start of the civil works (plan) is the start time set at the time of Phase 1 planning (July 2007), and the end is the closing time set at the time of Phase 2 planning (April 2014).

Note 4: The start of the land acquisition (plan) is the start time set at the time of Phase 1 planning (July 2005), and the end is the closing time set at the time of Phase 2 planning (March 2012).

< Internal Rates of Return (Reference only)>

The Economic Internal Rate of Return at the time of the appraisal was 8.5%, calculated on the assumption that travel time saving and travel cost saving to be considered as benefits, project cost (excluding tax) and operation and maintenance cost to be regarded as costs, and project life assumed to be 30 years. As a result of recalculation at the time of the ex-post evaluation, it turned out to be 3.1% which is lower than the figure at the time of the appraisal. The main reasons for this are that in addition to the increase in project cost compared to the original plan, the increase in traffic volume was lower than expected due to the delay in the extension of the New National Highway No. 3 to the northern provinces of Bac Kan and Cao Bang, and because the existing National Road No.3 was improved separately by the Vietnamese side to increase convenience, and hence, the shift in traffic volume did not occur as much as initially expected.

Unlike the original plan, since the project is no longer a toll road, the Financial Internal Rate of Return was not calculated.

In light of the above, although the period was within the plan, the project cost exceeded the plan. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional/Organizational Aspect>

The operation and maintenance of the national highway constructed by the project is carried out by Joint Stock Company No. 238 and Bac Nam Joint Stock Company, which are the maintenance companies.¹⁵ Both companies are undertaking operation and maintenance work based on the contract with the Road Administration Department I under the Directorate for Roads of Vietnam (hereinafter referred to as “DRVN”).¹⁶ Company No. 238 was under the DRVN until November 2005, when it was reorganized as a Joint Stock Company as part of the Vietnamese government’s state-owned enterprise reform (equitization of state-owned enterprises into joint-stock companies with a view to future privatization), and has been in charge of operation and maintenance work since the completion of the project. Bac Nam Joint Stock Company was established as a spin-off from Joint Stock Company No. 238. When the project was completed, operation and maintenance work was

¹² At the time of the appraisal, the exchange rate was estimated at 1 VND = 0.003742 yen, but in reality, the yen had weakened to 1 VND = 0.005547 yen (the period average based on IMF rates from 2005 to 2014).

¹³ Since the bid price exceeded the planned price, package was divided into 3 parts and re-bidding was conducted.

¹⁴ By the fourth quarter of 2014, all the construction was basically completed.

¹⁵ Joint Stock Company No. 238 is responsible for the operation and maintenance of KM0 - KM26 section and Bac Nam Joint Stock Company is responsible for KM26 - KM61 section.

¹⁶ Both companies have been selected through competitive bidding. The contract period at the time of the ex-post evaluation is three years, from April 1, 2021 to March 31, 2024.

outsourced through direct contract, but later competitive bidding selection process was introduced. It is also planned that operation and maintenance companies will be selected through competitive bidding after April 2024.

40 out of 50 employees of Joint Stock Company No. 238 and 100 out of 250 employees of Bac Nam Joint Stock Company are engaged in operation and maintenance work of the project. According to the DRVN, Joint Stock Company No. 238 and Bac Nam Joint Stock Company, there is no particular problem with the current staffing as the daily maintenance work has been carried out smoothly and adequately so far. In addition, there is constant communication and close collaboration between each organization. The decision-making process and the authority of each organization are clearly defined in the regulations of the Ministry of Transport of Vietnam (Decision 2296) and the contract, and the operation and maintenance work is carried out based on these regulations.

From the above, no particular problem has been identified regarding the institutional/organizational aspect of operation and maintenance of the project.

<Technical Aspect>

The staff of Joint Stock Company No. 238 and Bac Nam Joint Stock Company, who are in charge of operation and maintenance at the site, have been trained in road maintenance at vocational schools, etc., and have accumulated sufficient skills, knowledge and experience in regular inspection and maintenance of roads on other roads for many years. In addition, they have received technical guidance¹⁷ on the operation and maintenance of automobile expressway from the Japanese consultants in charge of construction supervision of the project, and have acquired the necessary skills, which are utilized in their daily work. Furthermore, as part of the technical cooperation project “The Project for Capacity Enhancement in Road Maintenance” (Phase 1: 2011-2014, Phase 2: 2015-2018), they have received support for capacity enhancement in preparing technical standards for road maintenance, standards for supervisory operations related to maintenance, and budget planning.¹⁸ The acquired knowledge and skills are also utilized in the operation and maintenance of the project, and the training contents are shared and utilized by other staff, generating synergetic effects with the project. There is also an annual training plan, and the staff in charge of operation and maintenance in the field receive training¹⁹ to improve their skills and utilize the latest software related to road maintenance. Senior staff also provide on-the-job training for other operation and maintenance staff. In addition, manuals for daily maintenance have been prepared, and staff in charge of operation and maintenance of Joint Stock Company No. 238 and Bac Nam Joint Stock Company use these manuals on a daily basis to carry out their activities. The manuals are updated as new laws and regulations pertaining to the operation and maintenance of roads (e.g., new regulations related to traffic signs, etc.) are enacted and implemented.

From the above, no particular problem has been identified regarding the technical aspect of operation and maintenance.

<Financial Aspect>

The operation and maintenance cost of the project is financed by the Road Maintenance Fund (hereinafter referred to as “RMF”²⁰) of the Vietnamese government. Costs of large-scale repairs will also be covered by the RMF. The budget, actual allocation and actual expenditure for operation and maintenance costs of the project are shown in Table 8. The ratio of the allocated amount to the planned amount has been increasing year by year and is 97% in 2021.

Table 8: Operation and maintenance costs of the project

(Unit: million VND)

	2019	2020	2021
Budget (planned amount)	76,371	64,972	85,888
Actual allocation	59,364	58,384	83,508
Actual expenditure	59,364	58,374	-.

Source: Results from questionnaire survey of DRVN

From the above, no particular problem has been identified regarding the financial aspect of operation and maintenance.

<Current Status of Operation and Maintenance>

According to the interviews with Joint Stock Company No. 238, Bac Nam Joint Stock Company, and the actual project site visits by the local consultant, the high-standard road, interchanges, intersections, traffic signs, and other facilities developed by the project are in good condition and there are no particular problems in their maintenance situation. In addition, interviews with road users and residents²¹ in the vicinity did not point out any problems with the road, such as deterioration or defects.

According to Joint Stock Company No. 238 and Bac Nam Joint Stock Company, maintenance activities²² are carried out properly and there are no particular problems. In addition, the staff in charge of operation and maintenance at the site keeps maintenance records (activity

¹⁷ Specifically, they are trained in traffic operations (patrolling, emergency rescue, emergency traffic control, road obstacle handling, liaison with traffic control room, etc.), road inspection (inspection of road surfaces, road slopes, waterways, bridges, underpasses, traffic signs, guardrails, etc.), road maintenance (cleaning of roads and waterways, patrol management, emergency repair work, disaster prevention, and traffic control during maintenance work, etc.).

¹⁸ According to the DRVN, trainings were conducted in Vietnamese and there were no language problems.

¹⁹ Ten staff members of Joint Stock Company No. 238 and 30 staff members of Bac Nam Joint Stock Company in charge of operation and maintenance take the training every year.

²⁰ The RMF was established in 2012 to ensure stable budget for the maintenance of national and provincial roads, etc. According to the DRVN, before the establishment of the RMF, only about 40% of the budget request was allocated, but after its establishment, the situation has greatly improved. The RMF’s main source of funding is vehicle registration fees.

²¹ The interviewees are the same as the interviewees listed in footnote 7.

²² Specifically, following activities are carried out.

- Daily maintenance (daily, weekly): cleaning of road surfaces, bridges and drainage facilities, mowing along the road, etc.
- Routine maintenance (monthly, quarterly): installation of curbs, repair and painting of traffic signs, etc., inspection of public transformer facilities, etc.
- Preventive maintenance (monthly, quarterly): repainting of lane markings, replacement of reflective road studs, replacement of bridge drainage pipes, etc.
- Troubleshooting maintenance (monthly, quarterly): repair of damaged or deformed pavement, replacement of traffic signs, replacement of fences, replacement of cross-drainage facilities in road embankments, etc.

items, contents, quantity, etc.) for each activity, and Joint Stock Company No. 238 and Bac Nam Joint Stock Company make plans for future maintenance and repair based on the records.

Main spare parts are traffic signs, reflective road studs, fences, etc., which are stored in the warehouses of Joint Stock Company No. 238 and Bac Nam Joint Stock Company. The warehouses are located on dry and elevated ground to avoid flood damage. All spare parts can be procured in Vietnam and are always available in the warehouses, and they are being systematically managed to ensure timely replacement when needed.

From the above, no particular problem has been identified regarding the operation and maintenance status.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

It is important for the executing agency to provide JICA with information on the maintenance equipment for high-standard road and the introduction and installation of toll plaza and ITS facilities, which were excluded from the scope of the project, in the event that the Vietnamese side again raises the issue of a development plan using the BOT scheme.

Recommendations to JICA: None

Lessons Learned for Executing Agency and JICA:

The reason why part of the scope was excluded from the project and the Vietnamese side decided to consider the development by the BOT scheme was that it was to cope with the shortage of ODA loan funds due to the soaring prices of construction materials and equipment. On the other hand, introduction of toll plaza and ITS facilities are closely related not only to this project but also to the policies and systems of the Vietnamese government concerning the entire road transportation network. For this reason, it is important that JICA continues to hold close policy dialogues with the Vietnamese side through the executing agency and to keep abreast of the Vietnamese government's policies, future plans, and the status of its institutional and organizational development regarding Vietnam's transportation (road) sector development utilizing funds and know-how of private sector, such as BOT scheme. Thus, when JICA considers similar projects such as the national road development projects in the future, it is important for JICA to make decisions on whether or not to provide assistance based on the specific situation at that time and future prospects. If support will be provided, then it is important that the project scope, etc., to be set while closely coordinating with the Vietnamese side at the project planning stage.

As regards each indicator of quantitative effects of the project, the executing agency did not measure the actual figures under the same conditions as those set at the time of the ex-ante evaluation after 2016, which is the year of comparison. Therefore, the actual data for 2019 and 2020 obtained from the executing agency at the time of the ex-post evaluation were only regarded as references, and making analysis on the quantitative effects of the project over time in a consistent manner was not possible, making it difficult to accurately grasp the project effects. Thus, it is important for the executing agency to continue measuring actual data over time after project completion under the same conditions as those set during the ex-ante evaluation as part of the project supervision. JICA is also expected to encourage the executing agency for the enhancement of accuracy of quantitative analysis of the ex-post evaluation by following up with them as necessary to ensure that they measure each indicator of quantitative effects appropriately.



National Highway No. 3 constructed by the project



Place where residents are resettled

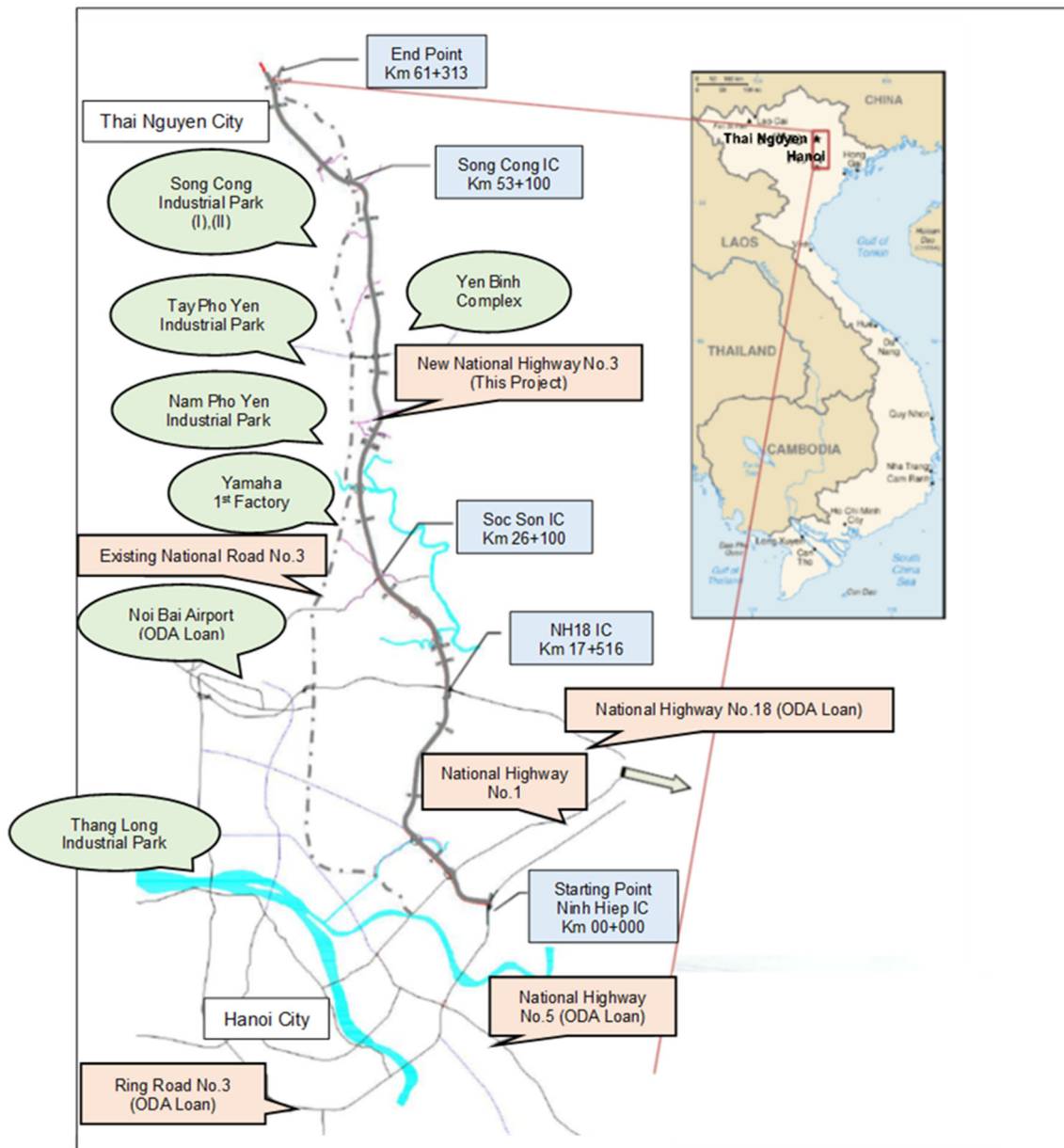


Figure 1: Location map of the project

Source: prepared by the evaluator, based on the document provided by JICA