

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country : Republic of the Philippines

Project : Arterial Road Bypass Project (Phase III)

Loan Agreement : February 28, 2018

2. Background and Necessity of the Project

- (1) Current State and Issues of the Transportation and Traffic Sector/ Development of Metro Manila in the Republic of the Philippines.

Metro Manila is the largest hub of economic activity in the country with a concentration of 13% of the country's total population and 36% of the GDP. The population is rapidly increasing from 7.92 million people in 1990 to 12.87 million people in 2015, which represents about a 1.6 times increase over that period. In recent years, major cities on the outskirts have been rapidly developing as suburbs in light of the urban spread of Metro Manila. The Government of the Republic of the Philippines (hereinafter referred to as "the Philippines") has been promoting the development of expressway networks and commuter railway systems that connect Metro Manila and surrounding cities. However, their transportation capacity has not fully caught up with the rapidly progressing urbanization of the suburbs, resulting in severe traffic congestion in Metro Manila and its surrounding cities. Heavy traffic congestion can be seen in particular in and around Plaridel City, which is a core suburb city to the north of Metro Manila, due to the city, located along the Philippines-Japan Friendship Highway (hereinafter referred to as "PJFH") which is a major arterial road directly connecting Metro Manila and Central Luzon, being within commuting distance of Metro Manila. JICA conducted a preparatory survey for cooperation in 1999 and a detailed planning survey in 2002 targeting Plaridel City and its surrounding area. Working toward the construction of a bypass with two lanes in each direction in a phased manner as proposed in the surveys, a bypass road with one lane in each direction was constructed as part of the Arterial Road Bypass Project (hereinafter referred to as "the Project"). Traffic volume in and around Plaridel City which is located very close to Metro Manila is increasing by about 2 to 3% every year; the annual average daily traffic on the PJFH was 25,000 vehicles in 2000, before the start of bypass construction, but this increased to 42,000 vehicles on the PJFH and the bypass in 2017. On the section of the bypass which is already open to traffic, there is more traffic than expected, contributing to reducing traffic congestion on the PJFH. Expecting more traffic demand in the future, there is a need for expanding the road traffic capacity, promoting the separation of intra-city traffic and through traffic, mitigating traffic congestion and

improving the city environment by completing the bypass road with two lanes in each direction.

The Government of the Philippines has set out policies to mitigate traffic congestion by expanding transport infrastructure in the economic center and its suburban areas in the “Philippine Development Plan” (2017-2022), and the “Public Investment Program” (2017-2022) formulated by the Department of Public Works and Highways. The Project in which a bypass will be constructed to improve access between Metro Manila, which is the economic center of the country, and its surrounding cities, will contribute to the mitigation of traffic congestion on the PJFH, and is positioned as a priority program that needs to be completed by 2022 as part of the “Public Investment Program.”

(2) Japan’s and JICA’s Policy for the Transportation and Traffic Sector/Development of Metro Manila and the Priority of the Project

“Achieving sustainable economic growth through investment promotion” has been set as a priority area in Japan’s Country Assistance Program for the Philippines (April 2012). Specifically, support will be provided for the development of transportation/traffic networks centering on Metro Manila. Meanwhile, the JICA Country Analysis Paper for the Philippines (November 2014) analyzed that “infrastructure development centering on the metropolitan region” is an important issue, and it is necessary to alleviate traffic congestion and improve logistics in the metropolitan area through infrastructure development. The Project is well aligned with this analysis and policy. Japan has so far provided the following support in the same sector targeting Metro Manila and its surrounding areas; a development study including “Metro Manila Urban Transportation Integration Study” (1999), ODA loan programs including the Project (Phase I and II), “Central Luzon Link Expressway Project” (loan agreement signed in 2012), and “North - South Commuter Railway Project (Malolos- Tutuban)” (loan agreement signed in 2015), as well as technical cooperation such as “The Project for Capacity Development on Transportation Planning and Database Management” (2011-2015).

(3) Other Donors’ Activity

The Asian Development Bank recognizes the need to improve the capability for the movement of people and goods by promoting sustainable urban transport as one of its major programs in the Country Operations Business Plan (2017-2018), and it specifically provides assistance for the improvement of road maintenance and management capacity as well as implementation of a PPP (Public-Private Partnership) scheme to promote investment in transportation and traffic infrastructure. The World Bank also recognizes the need to support for improving urban traffic in Manila and Cebu, in order to achieve “rapid, inclusive and sustainable economic growth,” as one of its priority areas in the Country Partnership Strategy (2015-2018).

3. Project Description

(1) Project Objectives

The Project aims to mitigate traffic congestion in and around Plaridel City, a core suburb city to the north of Metro Manila, and enhance transport capacity/efficiency in these areas by developing a road that bypasses the PJFH, the major arterial road that directly connects Metro Manila with Central Luzon, thereby contributing to socio-economic development in Metro Manila and its surrounding areas in the northern region.

(2) Project Site/Target Area

Province of Bulacan (in and around Plaridel City, a core suburb city to the north of Metro Manila)

(3) Project Components

- 1) Bypass road development (a total length of 24.61 km, two lanes on both sides). (Construction of a bridge section (2.22 km) and other sections of the road (22.39 km).) The loan for the Project (phase III) will be used for construction work to widen the bypass road with one lane on each side to two lanes on each side for the total length of 24.61 km.
- 2) Consulting service (construction supervision, etc.)

(4) Estimated Project Cost

Estimated Project Cost: 25,986 million yen (Project cost for which the ODA loan is granted this time (phase III): 11,476 million yen, the loan amount for this time: 9,399 million yen)

(5) Schedule

March 2004 – February 2022 (216 months in total). The Project for which the ODA loan is granted this time (phase III) is scheduled for January 2018 – February 2022 (50 months in total). The commencement date of service (February 2021) shall be the time of the Project's completion.

(6) Project Implementation Structure

- 1) Borrower: Government of the Republic of the Philippines
- 2) Guarantor: None
- 3) Executing Agency: Department of Public Works and Highways: DPWH
- 4) Operation and Maintenance System: Bulacan I and II District Engineering Office will be

responsible for operation and maintenance under the supervision of DPWH Main Office and Regional Office III which has jurisdiction over Province of Bulacan.

(7) Collaboration and Division of Roles with Other Projects and Donors

- 1) Japan's assistance activities: None in particular
- 2) Other development partners' assistance activities: None in particular

(8) Environmental and Social Consideration/ Poverty Reduction/ Social Development

1) Environmental and Social Consideration

(i) Category: A

(ii) Reason for Categorization: The Project falls into the road sector under the JICA Guidelines for Environmental and Social Considerations (proclaimed in April 2010).

(iii) Environmental Permit: The Project's Environmental Impact Statement (EIS) was assessed by the Department of Environment and Natural Resources (DENR) in 2002, and an Environmental Compliance Certificate (ECC) was issued in November of the same year. The EIS was updated in August 2017.

(iv) Anti-Pollution Measures: For soil runoff control during the construction work, sediment traps will be built to prevent river water and irrigation water from being polluted. To control the dust generated during construction, water will be sprinkled on the roads. To mitigate noise and vibration, low-noise construction machines will be introduced. After the commencement of service, anti-noise measures shall be taken such as planting trees at locations where the noise exceeds the country's noise standard.

(v) Natural Environment: The Project is not located in or near any sensitive areas such as national parks, and is expected to have minimal adverse impact on the environment.

(vi) Social Environment: In phase I and II of the Project when the bypass road with one lane on each side was constructed, the resettlement of residents started while envisioning the widening of the road to two lanes in each direction in the future. The resettlement was promoted in accordance with the country's laws and regulations in phase I, and in line with the Resettlement Action Plan (RAP) which was prepared based on the country's laws and regulations and on JICA's guidelines in phase II. The Project caused approximately 34 ha of land acquisition and the resettlement of 62 households in phase I, and about 35 ha of land acquisition and the resettlement of 32 households in phase II. As for the land needed for widening the road to two lanes in each direction, 4 households located in a section of phase II have not yet been resettled at present, but they are scheduled to be relocated in line with the RAP. No particular objections to the Project have been raised from affected local residents during the public consultations with that were held several times as part of formulating and implementing the RAP.

(vii) Other/Monitoring: During the construction, the monitoring team consisting of the

Project executing agency, contractors, consultants and the local governments will monitor soil erosion, air quality, noise and vibration, etc., based on the environmental management plan and the environmental monitoring plan.

2) Cross-cutting Issues: None in particular

3) Gender Category: Gender activity integration project (Gender Informed (Significant))
 <Activity Content/Reason for Classification> Through discussion with the Government of the Philippines, agreement was made with the Government to implement HIV prevention measures in the Project.

(9) Other Important Issues

None in particular

4. Targeted Outcomes

(1) Quantitative Effects

Performance Indicators (Operation and Effect Indicator)

Indicator	Target Road	Baseline (Actual Value in 2000)	Baseline (Actual Value in 2017)	Target (2023) [Expected value 2 years after project completion]
Annual average daily traffic (vehicle/day)	PJFH	25,566	19,116	15,867
	Bypass	-	23,152	34,907
Average speed (km/hour)	PJFH	20.1	34.4	51.2
	Bypass	-	41.9	64.3

(Note) The actual values for the bypass road in 2017 were counted only in the Project phase I section (one lane in each direction) which is already in service.

(2) Qualitative Effects

Increased convenience by securing punctuality of travel, improved urban environment with reduced traffic congestion, and promotion of socio-economic development in areas in the northern outskirts of Metro Manila.

(3) Internal Rate of Return

Based on the conditions indicated below, the economic internal rate of return (EIRR) of the Project will be 22.1%. The financial internal rate of return (FIRR) has not been calculated because no toll fees are collected in the Project.

[EIRR]

Cost: Project cost (excluding tax), operation and maintenance expenses

Benefit: Reductions in vehicle operating cost and time required

Project Life: 20 years

5. Preconditions/ External Factors

- (1) Preconditions: None in particular

- (2) External Factors
 - (i) No large-scale natural disaster will hit the Philippines, the Project area, and its surrounding areas.
 - (ii) No changes will be made to the road development policies of the Government of the Philippines and the organizational structure/ duties of the executing agency.

6. Lessons Learned from Past Projects and Application to the Project

The ex-post evaluation of the Third Period National Highway No. 1 Bridge Rehabilitation Project (phase I and II) in the Socialist Republic of Vietnam provides a lesson which needs to be applied in future similar projects involving the construction of bridge of certain conditions such as a wide road bridge (two lanes in each direction). In such projects, safety measures need to be taken, for example, the installation of a pedestrian crossing preventive fence, if a drastic increase of traffic volume is expected or if neighborhood residents are highly likely to cross the road every day. Since the Project includes the construction of a bridge and access road, the locations at which this fence should be built will be discussed in the detailed design phase based on the lesson mentioned above.

7. Evaluation Results

The Project conforms with the development issues and policies of the Philippines as well as the assistance policy and analysis of Japan and JICA. By constructing the arterial road bypass near Plaridel City, a core suburb city to the north of Metro Manila, the Project aims to mitigate traffic congestion and enhance transport capacity/efficiency in and around the city, thereby contributing to socio-economic development in the target areas. In addition, the Project can be considered to contribute to achievement of the SDGs (Sustainable Development Goals) Goal 9 (Build resilient infrastructure). For these reasons, it is highly necessary for JICA to provide support for the Project's implementation.

8. Plan for Future Evaluation

- (1) Indicators to be Used
Same as 4. (1) - (3)

(2) Timing

Ex-post evaluation (Two years after the project completion)

END