

## Ex-ante Evaluation

### 1. Name of the Project

Country: Republic of the Philippines

Project: Arterial Road Bypass Project (Phase II)

Loan Agreement: 30 March 2012

Loan Amount: 4,591 million yen

Borrower: The Government of the Republic of the Philippines

### 2. Background and Necessity of the Project

#### (1) Current State and Issues of the Transportation/Traffic Sector in Metro Manila

Metro Manila, which only account for 0.2% of land in the country, is the center of economic activities in the country, serving around 37% of total GDP produced and 13% of the total population in the country. In recent years, since major cities in the outskirts of Metro Manila have been developing as a bed town, severe traffic congestions are seen in the arterial roads of these cities. The Government of the Philippines (hereinafter referred to as “GOP”) has been focusing on the development of transportation/traffic networks, such as expressways consisting of ring roads and radial roads in Metro Manila, overhead crossing facilities and Light Rail Transit System (LRT) in Metro Manila, and expressway network that links Metro Manila with the surrounding cities. But the development of the transportation/traffic networks is not sufficient to serve the rapidly growing traffic demand, therefore, Metro Manila and the surrounding cities continue to face serious traffic congestions. Cities and towns along the Philippines-Japan Friendship Highway (hereinafter referred to as “PJFH”) in the North of Metro Manila are being urbanized as a commute-able city to Metro Manila. Traffic volume in and around Plaridel City, the Project site, is especially high due to its closeness to Metro Manila. It is one of the most heavily congested regions with vehicles traveling on the average no faster than 20km per hour in some sections. It has become a bottleneck of the Region for commutation and logistics between Metro Manila and its surrounding Northern cities; therefore, it is necessary to alleviate traffic congestion in and around Plaridel City.

#### (2) Development Policies Regarding the Transportation/Traffic Sector in Metro Manila and Priority of the Project

“Philippine Development Plan (2011-2016)” (hereinafter referred to as “PDP”) by the GOP and “Public Investment Program (2011-2016)” by the Department of Public Works and Highways (hereinafter referred to as “DPWH”) set out policies to alleviate traffic congestions by improving transport infrastructure and thus enhancing access between the economic center and its surrounding areas. The Project, that constructs a bypass to improve the access between Metro Manila, the economic center of the country, and its surrounding areas, will contribute to the alleviation of heavy traffic in the PJFH. Thus, the Project, is well aligned with the GOP’s

development policies.

### (3) Japan's and JICA's Policy and Past Activities of Assistance in the Transportation/Traffic Sector in the Philippines

Under the "Japan's Country Assistance Program for the Republic of the Philippines (June 2008)" Japan is committed to help alleviate traffic congestion in Metro Manila and prepare/improve key transportation and traffic networks that support the country's economic growth. In line with this, Japan implemented "The Master Plan on High Standard Highway Network Development in the Republic of the Philippines" in 2010 and helped DPWH prepare a traffic plan. In addition, based on the above Master Plan, Japan provided financial assistance to prepare road facilities such as ring roads and Interchanges and LRTs. Thus, Japan has contributed to improve logistics and alleviate traffic congestions in the country.

### (4) Other Donor Operations

World Bank is conducting "Metro Manila Transport Integration Project (MMURTRIP)", which provides financial assistance for the extension of roads in Metro Manila to improve transport efficiency and so forth.

### (5) Necessity of the Project

The Project intends to build a road that bypasses the urban area in Plaridel City, one of the most heavily congested sections in the PJFH, and improve the access between Metro Manila and its surrounding cities. Since the PJFH is the only arterial road that directly links Metro Manila with Central Luzon, the Project is expected to have a significant effect on the alleviation of traffic congestions and the improvement in logistics.

As mentioned above, the Project addresses the issues that the country's transport/traffic sector face and is aligned with the Philippines' development policies, Japan's and JICA's assistance policies. Therefore, JICA's support to the Project is necessary and relevant.

## **3. Project Description**

### (1) Project Objectives

The Project aims to alleviate the traffic congestions in and around Plaridel City, major city near Metro Manila, and enhance transport capacity/efficiency by constructing a road that bypasses the PJFH, the only arterial road that connects Metro Manila with Central Luzon directly, thus contributing to the socio-economic development in Metro Manila and its surrounding areas.

### (2) Project site/Target Area: Province of Bulacan

### (3) Project Outline

1) Construction of a bypass with one lane on each side (two lanes on both sides in total), a total length of 9.96km

2) Consulting service (bid assistance, construction supervision, etc.)

(4) Total Project Cost:

6,213million yen (Yen loan amount : 4,591million yen)

(5) Project Implementation Schedule:

March 2012 – December 2016 (61 months) The commencement date of service (December 2016) shall be the time of the Project's completion.

(6) Project Implementation Structure:

- 1) Borrower: The Government of the Republic of the Philippines
- 2) Project Executing Agency, Operation and Maintenance System: DPWH

(7) Environmental and Social Consideration, Poverty Reduction, and Social Development

1) Environmental and Social Consideration:

① Category: B

② Reason for Categorization: The Project is not considered to be a large-scale roads and bridges project, is not located in a sensitive area, or has none of the sensitive characteristics under the JICA Guidelines for Environmental and Social Considerations (April, 2010). It is not likely to have significant adverse impact on the environment.

③ Environmental Permit: Environmental Compliance Certificate (ECC) for the both sections of Phases I-II was issued by the Department of Environment and Natural Resources (hereinafter referred to as "DENR") in November 2011.

④ Anti-Pollution Measures: For runoff control during the construction, sediment trap will be built to prevent irrigation water and river water from being polluted. For dust control, water will be sprinkled on roads. For solving noise and vibration issues, low-noise construction machines will be introduced.

⑤ Natural Environment: The Project is not conducted in or near a sensitive area such as national parks, and is expected to cause little adverse impacts, if any, on environment.

⑥ Social Environment: The Project may cause about 32.2ha of land acquisition and resettlement of 33 households. Land acquisition and resettlement will be monitored by the Project Executing Agency and the local governments in accordance with the country's laws and regulations.

⑦ Other/Monitoring: Based on an environmental management plan, the monitoring team consisting of the Project Executing Agency, contractors, consultants and the local governments will monitor soil erosion, air quality, noises and vibrations, etc..

2) Promotion of Poverty Reduction: Applicants from the poor households that are required to resettle will be preferentially hired for the construction of the expressway.

3) Promotion of Social Development: During the construction, it is expected that a significant number of workers (migrant workers) will come from areas outside of the Project site. This might possibly cause development of infectious diseases (including HIV/AIDS) at the Project sites. To cope with this issue, JICA will request the Executing Agency to incorporate an HIV/AIDS clause into bidding documents so that construction contractors can provide measures to prevent the development of

HIV/AIDS among construction workers.

(8) Cooperation with other schemes and/or donors: None

(9) Other Important Issues: Metro Manila and its Northern surrounding area are one of the most important regions as Japanese companies have their production base and domestic sales offices. The Project that contributes to enhanced logistics in the region will, in turn, contribute to enhance efficiency and the revitalization of the economic activities by the Japanese companies operating in the locality.

#### 4. Outcome Targets

(1) Quantitative effects

1) Performance Indicators (Operation and Effect Indicators):

Indicator	Target Road (Phases I&II)	Baseline (2011 Actual)	Target (2018) 【2 years after completion of Phase II】
Annual average daily traffic (vehicle/day)	PJFH	47,125	44,619
	Bypass	-	15,649
Average? time required (minute/vehicle)	Via PJFH	49	48
	Via bypass	-	34
Travel cost reduction due to reduction in travel time (million peso/year)		-	4,638.73

As a reference indicator, the number of offices in the Central Luzon region (Region III) will be monitored (79,445 as in 2009).

Note that the traffic volume is calculated using the data for 2006 and a baseline research will be conducted to decide a baseline after the Project launch.

2) Internal Rate of Return: 58.8%

Cost: Project cost of Arterial Road Bypass Project (Phase I and II) (excluding tax), operation and maintenance expenses

Benefit: Reduction in vehicle operating cost and time required

Project Life: 20 years

(2) Qualitative Effects: The alleviation of traffic congestions in the Project site and socio-economic development in the areas in the Northern outskirts of Metro Manila

#### 5. External Conditions /Risk Control

Delay in the project implementation due to natural disasters, etc.

#### 6. Lessons Learned from Findings of Similar Projects Undertaken in the Past

(1) Findings of Similar Projects:

The ex-post evaluations of completed yen loan projects prove land acquisition requires a long time, especially in densely-populated areas, and indicate land acquisition should be finished in prior to the commencement of construction by estimating sufficient time for land acquisition.

(2) Lessons Learned

Buildings are concentrated at a point where the Project and the existing road intersect. Therefore, applying the above lessons learnt to the Project, the Project intends to begin to acquire land at an early stage to avoid causing unnecessary delays to the construction schedule, thus shortening the time required for completion.

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

(1) Indicators for Future Evaluation

- 1) Annual average daily traffic (vehicle/day)
- 2) Average time required (minute/vehicle)
- 3) Travel cost reduction due to reduction in travel time (million peso/year) (%)
- 4) The number of office in the Central Luzon region (Region III)

(2) Timing of Next Evaluation

Baseline research after hiring a consultant and two years after Project completion (ex-post evaluation)

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