Japanese ODA Loan

Ex-Ante Evaluation(for Japanese ODA Loan)

Southeast Asia Division 5, Southeast Asia and Pacific Department

Japan International Cooperation Agency

１．Name of the Project

Country: The Republic of the Philippines (the Philippines)

Project: Metro Manila Subway Project (Phase 1) (III)

Loan Agreement: March 26, 2024

２．Background and Necessity of the Project

(1) Current State and Issues of the Railway Sector in Metro Manila

Metro Manila is a relatively small urban area of 620 km2, however, its population is growing at a rate of 1.8% per year, from approx. 9.93 million in 2000 to 13.40 million, representing a 1.4-fold increase in 2020. Despite the overcrowded population, the development of rail-based public transportation as a means of mass transportation is lagging behind, which is represented by the situation that the three main urban railroads (two of which are for Light Rail Transit (LRT)) in the metropolitan area are only 50 km in total length, leading to severe traffic congestion in Metro Manila and its suburbs. The economic loss due to traffic congestion is estimated at 3.8 billion pesos (approximately 9 billion yen) per day ("Project for Comprehensive Traffic Management Plan for Metro Manila" (2022)), creating bottlenecks in smooth logistics and movement, and reducing the international competitiveness of the Republic of the Philippines.

In response to this situation, the "Transport and Traffic Roadmap for Sustainable Development of the Manila Metropolitan Area" （2014）, supported by JICA and approved by the Philippine government, proposes strengthening the public transportation network connecting the metropolitan center and suburbs through the development of large-scale public transportation along the north-south axis of the Manila metropolitan area to alleviate overcrowding and traffic congestion in the central area.. The aim of the plan is to promote systematic expansion of the urban area in the north-south direction and a shift towards public transportation. This is expected to result in increased investment, industrial expansion and consequent acceleration in economic growth, reduced health hazards, such as air and noise pollution, shorter commuting times, and other factors contributing to better quality of life. Furthermore, the Metro Manila Subway Project (Phase 1) ("the Project") will contribute to alleviating severe

traffic congestion in Metoro Manila, and it is positioned as one of the high priority lagship projects promoted by the current administrations’s infrastructure development plan "Build, Better, More" program.

（２）Japan’s and JICA’s Policy Cooperation Policy and Operations in the ○○ Sector/Area

Under the Country Development Cooperation Policy for the Philippines (April 2018), "Strengthening a Foundation for Sustainable Economic Growth" is defined as one of the priority areas. It mentions that Japan will cooperate in developing quality infrastructure, including the development of transportation networks in the Greater National Capital Region and provincial cities and develop other quality infrastructure. The JICA Country Analysis Paper for the Philippines (July 2020), which outlines the direction of cooperation with the country, states that JICA will help build necessary socio-economic infrastructure in urban areas as part of its efforts to increase both the quality and quantity of the middle class in the Philippines who can benefit from fundamental values such as democracy, the rule of law, and market economy which the Philippines and Japan share in common. Furthermore, it is consistent with the Philippine government's commitment to continue to cooperate with the initiatives for quality infrastructure investment in the “Build, Better, More” program mentioned above. In addition, JICA's Global Agenda “Transportation” also calls for the development and promotion of reliable, safe, and environmentally friendly public transportation, and this project is in line with this plan.

Japanese ODA Loans have supported the country's projects in the railway sector through Technical Cooperation for Development Planning, Official Development Assitance Loans and Techncial Cooperation. Examples include: "Follow-up Survey on Roadmap for Transport Infrastructure Development for Greater Capital Region (GCR)" (2019); “Metro Rail Transit Line 3 Rehabilitation Project (I) (II)” (2018 and 2023); “North-South Commuter Railway Project (Malolos-Tutuban) (I) (II)” (2015 and 2023); “North-South Commuter Railway Extension Project (I) (II)” (2019 and 2023); “Technical Assistance Project to Establish of the Philippine Railway Institute” (2024).

（３）Other Donors’ Activities

The Asian Development Bank (hereinafter referred to as ADB), in its Country Operations Business Plan (2021-2023), focusing on accelerating infrastructure projects that bring economic synergies and long-term growth, has been co-financing with JICA in the North-South Commuter Railway Extension

Project. The ADB has also been providing procurement assistance to private operators for the operation and maintenance of the Project and the North-South Commuter Railway Project through the Transaction Advisory Service for the Public Sector of the ADB's Office of Public-Private Partnership. It has also granted a technical assistance loan "Infrastructure Preparation and Innovation Facility" (November 2017), for the purpose of bidding assistance in the civil works package for the Extension Project it is financing.

３．Project Description

（１） Project Overview

① Project Objective

The objective of the Project is to accommodate increasing transportation demand by constructing a subway line in Metro Manila, thereby contributing to the alleviation of serious traffic congestion as well as to the mitigation of air pollution and climate change.

② Project Component

1) Civi works, facilities, equipment, etc. (International competitive bidding (Tied))

(a) Cil works (27-km, 15 stations)

(b) Depot and Philippines Railway Institute (PRI)

(c) Railway system (electricity/machines/signals/communications)

(d) Procurement of Rolling Stock (240 train cars)

3) Consulting services (e.g., bidding assistance, supervision of construction, capacity building of the executing agency, and support for implementing Transit Oriented Development (TOD)

③ Project Beneficiaries（Target Group）

People in Metro Manila (Approx.13.40 million people)

（２）Estimated Project Cost

1,236,911 million Yen (Japanese ODA loan amount this time: 150,000 million Yen)

（３）Schedule

March 2018-November 2031 (165 months in total)

the commencement of the service of the facilities (scheduled in November 2029) is considered as the completion of the Project.

（４）Project Implementation Structure

１）Borrower: Government of the Republic of the Philippines

２）Guarantor: None

３）Executing Agency: Department of Transportation (DOTr)

４）Operation and Maintenance System：

DOTr envisions outsourcing operation and maintenance to the private sector, and the operation and maintenance entity will be determined through a bidding process.

（５）Collaboration and Sharing of Roles with Other Donors

１）Japan’s Activity

Japan ODA Loan projects has been implemented included “Metro Rail Transit Line 3 Rehabilitation Project (I) (II)” (2018 and 2023); “North-South Commuter Railway Project (Malolos-Tutuban) (I) (II)” (2015 and 2023); “North-South Commuter Railway Extension Project (I) (II)” (2019 and 2023).

２）Other Donors’Activity

ADB has been co-financing with JICA in the North-South Commuter Railway Extension Project. ADB has also been providing procurement assistance to private operators for the operation and maintenance of the Project and the North-South Commuter Railway Project through the Transaction Advisory Service for the Public Sector of the ADB’s Office of Public-Private Partnership.

（６）Environmental and Social Consideration/Cross-Sectoral Issues/Gender Category

１）Environmental and Social Consideration

① Category: A

② Reason for Categorization: The Project targets the road sector and areas vulnerable to the features and impacts defined in the JICA Guidelines for Environmental and Social Considerations (Promulgated in April 2010, "JICA Guidelines") (large-scale involuntary resettlement)

③ Environmental Permit: The Project obtained an Environmental Compliance Certificate (ECC) in October 2017. In addition, the Project's Environmental Impact Statement (EIS) was updated, and a revised ECC was obtained in December 2019.

④ Anti-Pollution Measures: While the construction may affect the air and water quality and cause waste, soil pollution, noise and vibration, mitigation measures will be in place, such as watering, setting up silt

screens, drainage paths and septic tanks, regularly measuring the concentration of heavy metals and recycling them, appropriately storing fuels and oils and adopting a shield tunneling method. After the commencement of service, the impact of surface vibrations will be governed by the nighttime regulation standards stipulated by the Tokyo Metropolitan Government.

⑤ Natural Environment: The project site is not located in or around sensitive areas such as national parks, and adverse impact on the natural environment is predicted to be minimal.

⑥ Social Environment: The total number of housholds involuntarily resettled in association with the Project is planned to be 1,244 households. Land acquisition and resettlement will begin in accordance with the country's laws and regulations and a Resettlement Action Plan (RAP) that satisfies JICA guidelines

⑦ Other/Monitoring: During the construction period, the contractor will monitor water and air quality, noise, vibration, waste and the like on the project site under the supervision of the executing agency (DOTr), based on the Environment Management Plan and Environment Monitoring Plan. At the commencement of service, the operation and maintenance body will monitor noise, vibration, etc., under the supervision of the DOTr. The DOTr will monitor land acquisition, resettlement, and the success of income restoration efforts.

（7）Cross-Sectoral Issues

① Climate Change Measures: The Project helps reduce GHG emissions as an alleviating measure for climate change. The expected amount of climate change (GHG emissions) mitigation through the Project is 303,453 tons of CO2 per year (2045)

② Measures to Prevent Infectious Diseases Including HIV/AIDS: To mitigate the risk of infection of HIV/AIDS during construction, the Project will include preventative measures in the bidding documents to urge contractors to provide preventative programs to their labor force

③ Consideration for People with Disabilities: For universal design reasons, installation of elevators, accessible toilets and studded paving blocks (to aid the blind) in station buildings, introduction of accessible train cars, and elimination of differences in level between platforms and train cars are planned.

（８）Gender Category: Gender Informed

<Details of Activities/Reason for Categorization>

Although social and gender analysis was conducted in the Feasibility Study, it did not result in the establishment and planning of initiatives and indicators that contribute to gender mainstreaming. In the implementation of the project, the project will consider initiatives to promote women's use and safety, such as installation of women-only cars, security cameras, and gender-segregated toilets, and educational activities to prevent sexual harassment on the subway. In the RAP, preferential payment conditions for female-headed households and medical assistance will be provided to benefit women and vulnerable groups.

（９）Other Important Issues

Advanced Japanese technologies are introduced such as underground tunnel excavation, construction in narrow spaces, safe and highly reliable time signal systems, and light-weight/energy-efficient train cars, and the Special Terms for Economic Partnership (STEP) is adopted

４. Targeted Outcomes

（１）Quantitative Effects

1) Outcomes (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2017)	Target (2031) [2 years after project completion]
Volume of Transportation (Person x km/Day)	-	4,679,071
Number of Running Trains (Number of running train return trips/Day)	-	128
Operation Rate (%)	-	86
Running Distance (km/Day)	-	45,612
Running Hours between East Valenzuela Station and NAIA Terminal 3 Station	(Note) (Road Transportaion)	39 minutes 20 seconds

(Note) For reference, the time required to travel the section between Quirino Highway Station and FTI Station (approximately 22.5 km) by road transportation was 100 minutes as of September 2019, before the significan derease in traffic use due to the spread of COVID-19.

（２） Qualitative Effects

Promotion of Transit Oriented Development (TOD) along the subway, mitigation of severe traffic congestion, and alleviation of air pollution and climate change.

（３）Internal Rate of Return

Based on the assumptions listed below, the economic internal rate of return (EIRR) for the Project is 10.7%,and the financial internal rate of return (FIRR) is -1.5%.

【EIRR】

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

Benefits: Reducing vehicle running costs, travel time costs, greenhouse gas emissions, etc.

Project Life: 45 years

【FIRR】

Costs: Project cost, and operation and maintenance expenses

Benefits: Revenues from fares, advertisement, and income other than railway business

Project Life: 45 years

５. External Factors and Risk Control

None in oparticular

６. Lessons Learned from Past Projects

Past ex-post evaluations of Japanese ODA Loan projects to the Philippines (e.g., Improvement and Modernization of Commuter Line South Project (evaluated in 2000)) indicate the necessity of thorough investigation on the feasibility of possible measures taken by the executing agency and the determination of role-sharing among institutions implementing resettlement, and preparation of the implementation plan with sufficient time to complete the resettlement. This is because reports indicate that projects involving the resettlement of squatters are highly likely to require a long time to complete.

Since the Project involves the resettlement of 1,244 households in and around the railyard, dialogues will be had with a wide range of residents and the people to be resettled will be finalized at an early point in time based on the RAP prepared by the DOTr. To ensure smooth implementation, the parties involved (such as the National Housing Authority (NHA) and Local Government Units (LGUs)) should engage in sufficient collaboration as well. In addition, high-level meetings between the two governments and regular reports to and consultations with the Secretary of Transportation of the Philippines will be implemented to promote steady progress in the land acquisition and resettlement of residents.

７．Evaluation Results

The Project is in accordance with the development issues and development policies of the Philippines and Japan's and JICA's Policy Cooperation Policy. And it aims to take measures for the increasing demand for transportation and contributes to the mitigation of severe traffic congestion as well as to the alleviation of air pollution and climate change. Furthermore, since the Project is expected to contribute to Sustainable Development Goals (SDGs) Goal 9 (Build resilient infrastructure), Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable) and Goal 13 (Take urgent action to combat climate change and its impacts), the necessity of the implementation of the Project is high.

８．Plan for Future Evaluation

（１）Indicators to be Used

As indicated in Sections 4.

（２）Future Evaluation Schedule

Ex-post evaluation:2 years after the project completion

END

Attachment: Map of the Metro Manila Subway Project (Phase 1)

Attachment: Map of the Metro Manila Subway Project (Phase 1)