

**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**

- (1) Country: the Republic of the Philippines
- (2) Project: Dalton Pass East Alignment Road Project (I)
- (3) Project Site / Target Area: Nueva Viscaya and Nueva Ecija (Population Approx. 2.8 million)

Loan Agreement: March 26, 2024

**2. Background and Necessity of the Project**

- (1) Current State and Issues of the Road Transportation Sector and the Priority of the Project in the Republic of the Philippines

In the Republic of the Philippines (hereinafter referred to as "the Philippines"), the road sector is the largest means of transportation, accounting for approximately 50% of freight transportation. In particular, the key section for logistics to Metro Manila, called Dalton Pass (approximately 60 km), which is part of the Japan-Philippines Friendship Road (approximately 2,100 km) completed in 1979 through Japanese ODA loan, located in the north central part of Luzon Island is the only arterial road and the most essential section connecting the Cagayan valley in northern Luzon, the second largest rice production area, and Metro Manila.

On the other hand, Dalton Pass is vulnerable to natural disasters, such as the six months road closure due to the Baguio earthquake in 1990, and typhoons often cause slope failures and road closures. Furthermore, the Dalton Pass is difficult for vehicles to maintain sufficient speed due to its steep slopes and sharp curves. In order to improve access between northern/central Luzon and Metro Manila, there is a growing need for an alternative road that is resilient to disasters and improved drivability. In the Philippines' medium-term development plan (Philippine Development Plan (2023-2028)), it states "Expand and Upgrade Infrastructure" is an important issue, and achieving seamless and inclusive connectivity is highlighted as one of the priority strategies in the field of transportation infrastructure. The Dalton Pass East Alignment Road Project (I) (hereinafter referred to as "the Project"), which aims to improve access between northern/central Luzon and Metro Manila, is in line with the said development plan

and is a priority for the Government of the Philippines. The project is included in the Infrastructure Flagship Project, which was formulated by the Government of the Philippines to promote highly strategic infrastructure development and is positioned as one of the government's most important projects.

(2) Japan's and JICA's Policy Cooperation Policy and Operations in the Road Transportation Sector

Japan's Country Development Cooperation Policy for the Republic of the Philippines (April 2018) specifies "strengthening the foundations for sustainable economic growth" as a priority area. The government plans to provide support for the development of high-quality infrastructure, including transportation networks. In addition, JICA's Country Analysis Paper for the Republic of the Philippines (July 2020) states that the direction of future support is to support economic growth while continuing to provide support to people who are at risk of being left behind due to rapid development, including development of transport infrastructure for reduction of disparities between urban and rural areas. The Project is in line with these policies and analysis. Japan has been supporting the improvement of access between Metro Manila and rural areas in the country through "Philippine-Japan Friendship Highway Project" (1968), "Philippine-Japan Friendship Highway Rehabilitation Project 1, 2" (1994 and 1995), "Cordillera Road Improvement Project" (1999), "Subic-Clark-Tarlac-Expressway Project" (2001), "Central Luzon Link Expressway Project" (2012) and "Project for Master Plan on High Standard Highway Network Development (Phase 1) (Phase 2)" (2009-2010 and 2019-2021). The Project has been formulated based on the master plan phase 2, which proposes to develop a high standard highway in Dalton Pass section.

(3) Other Donors' Activities

Through its' Country Partnership Strategy (2018-2023), the Asian Development Bank has set infrastructure development and the promotion of local economic development through Public Private Partnership as strategic plans, and specifically aims to improve road maintenance and management capabilities and invest in transportation infrastructure. The World Bank through its' Country Partnership Framework (2019-2023) has set out support for improving infrastructure, including transportation networks, as one of its priority areas aiming to ensuring competitiveness and economic viability for job creation.

### 3. Project Description

#### (1) Project Description

##### 1) Project Objective

The objective of the Project is to improve transport capacity and efficiency in the Pan-Philippine Highway Network in Central and Northern part of Luzon by constructing an alternative road along Dalton Pass, thereby contributing to economic and social development of the Central and Northern Luzon.

##### 2) Project Components

① Civil Works: Construction of four lane (two lane each) high standard highway road (L=Approx.23km), including independent two-lane per bound tunnels (north tunnel L=4.5km, south tunnel L=1.6km) and ten bridges (total L= 3.0km)

② Consulting Services: Detailed design, bid assistance (civil works, O&M concession), Construction supervision, O&M planning, Capacity development, Assistance for monitoring on environmental and social considerations

##### 3) Project Beneficiaries (Target Group)

Region II (population approx. 5.3 million), Region III (population approx. 12.4 million) (Philippine Statics Authority, 2020)

#### (2) Estimated Project Cost

163,780 million Yen (Japanese ODA loan for this tranche: 100,000 million Yen)

#### (3) Schedule

March 2024 - September 2033 (113 months). The commencement of the facility operation is considered as the completion of the Project (March 2032).

#### (4) Project Implementation Structure

1) Borrower: Government of the Republic of the Philippines

2) Guarantor: N/A

3) Executing Agency: Department of Public Works and Highways (DPWH)

4) Operation and Maintenance System: The entire bypass, including the project section, is planned to be operated and maintained by a private entity selected through financial bidding process based on self-sustaining operation from toll fee collection. The consultants hired by the Project support such selection process by formulating an operation and maintenance plan, supporting the DPWH in preparing bidding documents and developing evaluation indicators, and supervising the outsourcing of operation and maintenance work.

(5) Collaboration and Sharing of Roles with Other Donors

- 1) Japan's Activity: N/A
- 2) Other Donors' Activity: N/A

(6) Environmental and Social Consideration

- 1) Category: A
- 2) Reason for Categorization: The Project is considered to have impact on the environment according to the Japan International Cooperation Agency (JICA) Guidelines for Environmental and Social Considerations (promulgated in April 2010).
- 3) Environmental Permit: Environmental Compliance Certificate has been issued from the Department of Environment and Natural Resources, the government of the Philippines, dated August 3, 2023.
- 4) Anti-Pollution Measures: Air pollution during construction will be mitigated by regular watering and maintenance of construction machinery. The impact of water pollution during construction will be minimized by treating the turbid water before discharging it. The impact of noise during construction will be reduced by reducing the number of construction machines and their operating hours, and installing soundproof walls during blasting operations. It is expected that excavated soil will be generated from tunnel construction, but it is planned to be reused for the road construction of this project, and the remaining amount will be disposed of appropriately at a soil dump site designated by the recipient government.
- 5) Natural Environment: This project alignment passes through PCWFR (Pantabangan-Carranglan Watershed Forest Reserve), a protected area established for the purpose of developing and improving water resources and a Strict Protection Zone (SPZ) within the PCWFR, one of the zoning areas within protected areas, are designated as habitats for wildlife within the protected areas management plan, which falls under the area designated by the government of the partner country under the JICA guidelines for the purpose of nature conservation and cultural heritage protection. However, since the corresponding section of the Project is a underground tunnel section, no modifications to the above-ground portion of the SPZ are expected. Monitoring will be carried out to minimize negative impacts on the nature and ecosystem in the area, such as ensuring the replanting of 50 to 100 trees (depending on species based on the partner country's system) per tree felling.

- 6) Social Environment: The Project includes relocation of 218 individuals from 54 households (of which 75 people from 26 households are indigenous people) and the acquisition of approximately 124 ha of land, which procedures shall follow domestic regulations and the Resettlement Plan (RAP) prepared in accordance with JICA guidelines. The CP (Certification Precondition) is issued through the Philippines' FPIC (Free and Prior Informed Consent) as the route passes through two Ancestral Domains (AD) where indigenous peoples have traditionally lived, and it will have an impact on indigenous peoples. Additionally, an Indigenous Peoples Plan (IPP) has been formulated as part of the preparatory survey for the Project and has received widespread support through the FPIC (Free, Prior, and Informed Consultation) based on JICA guidelines, which the DPWH will continue the monitoring.
  - 7) Other/Monitoring: Based on the environmental management plan and environmental monitoring plan, the contractor will monitor air quality, water quality, noise, ecosystem, etc. under the supervision of DPWH during construction. The DPWH will monitor the implementation status of land acquisition and resettlement, the status of livelihood restoration, and social aspects such as IPP, also the DPWH will work closely with indigenous peoples and other related organizations, especially within the AD. The O&M of the facility is expected to be contracted to private entities, and under the supervision of DPWH, the private entities entrusted with the O&M of the facility will conduct environmental management and monitoring and report to DPWH.
- (7) Cross-Sectoral Issues
- 1) Climate change mitigation: The construction is expected to generate approximately 40,000 tons of carbon dioxide. Although deforestation will occur through the construction, it is planned to plant between 50 and 100 trees depending on the tree species for each felled tree, so carbon absorption is expected to be restored in the future. Additionally, this project is expected to reduce greenhouse gas emissions by 13,213 CO<sub>2</sub> equivalent tonnes/year by alleviating traffic congestion, thereby contributing to climate change mitigation measures.
  - 2) Infectious disease control: DPWH plans to implement infectious disease control measures for construction contractors and workers in accordance with the epidemic prevention program for COVID-19, HIV/AIDS or others

developed by the Department of Health, the government of the Philippines.

(8) Gender Category: GIS (Integrated gender activity program)

<Details of Activities/Reason for Categorization> The assessment results of the "Gender and Development (GAD) Toolkit" operated by the executing agency, states that it is foreseen in the vulnerable groups, including female-headed households, would experience bigger economic and social losses from relocation. Therefore, support such as updating plans at the detailed design stage from a gender perspective, as well as appropriate monitoring during construction and operation is planned in the Resettlement Action Plan (RAP) and the GAD Plan that the recipient government is required to create, to avoid or mitigate economic losses, especially for the vulnerable population. In addition, installation of gender friendly facilities (including toilets, nursing rooms, and lighting to ensure safety), fair employment regardless of gender, and the establishment of consultation desks for women is planned for the promotion of gender less and safe usage.

(9) Other Important Issues

The Project shall apply STEP conditions by utilizing Japanese technology related to tunnel construction and facilities, and bridge construction.

#### 4. Targeted Outcomes

(1) Quantitative Effects

1) Outcomes (Operation and Effect Indicators)

Indicator	Baseline (2019)	Target (2034) [2 years after project completion]	
	Existing Dalton path route section (A) (*)	The Project section (B)	(A) + (B)
Annual Average Daily Traffic (vehicle/day)	6,400	7,200	10,900
Passenger (person/day)	40,600	70,000	101,700
Average travel speed (km/h)	21.2	50.0	42.2

(\*) The section is selected based on the same longitude of the Project section's starting and ending point.

(2) Qualitative Effects

Improvement of logistic, climate change mitigation, and promoting economic development in the target area, etc.

(3) Internal Rate of Return

Based on the assumptions listed below, the economic internal rate of return (EIRR) for the Project is 15.6%, on the other hand the Financial Internal Rate

of Return (FIRR) is excluded from evaluation indicators since the O&M is not a part of the Project, and the Executing Agency does not plan to collect fee from the O&M concessionaire.

**【EIRR】**

Cost: Project cost, O&M cost (without tax)

Benefit: Travel Time Cost, Vehicle Operating Cost, reduction of detour at times of disasters

Project Life: 38 years

**5 . External Factors and Risk Control**

- (1) Preconditions: N/A
- (2) External Factors: N/A

**6 . Lessons Learned from Past Projects**

The ex-post evaluation result of “Hai Van Tunnel Construction Project (1)-(3)” in Vietnam shows the importance of well-planned and effective training programs, and a well-developed relationship and system between the Executing Agency and O&M entities for the proper implementation, management and maintenance of tunnels using cutting-edge technology. Therefore, to properly supervise O&M of the tunnels constructed under the Project, organizational structure for O&M based on close coordination and common understanding between the executing agency and O&M entities will be established through capacity development of the executing agency and development of manuals, which are included in the consulting services.

Also lessons and learns from the on-going “Davao City Bypass Construction Project” in the Philippines, which has similarities with the Project as toll road with tunnels, state the needs of financial feasibility study for an attractive toll tunnel road section O&M contract. These lessons learned will be applied to the Project as well.

**7 . Evaluation Results**

The Project is aimed to improve transport capacity and efficiency in the Pan-Philippine Highway Network in Central and Northern part of Luzon by constructing an alternative road along Dalton Pass, thereby contributing to economic and social development of the Central and Northern Luzon, which is aligned with the development policies of the Philippines and the Japanese Government and JICA’s country analysis. It will also contribute to achieving the SDGs 9 (Industry, Innovation and Infrastructure). Therefore, the Project is of significance and there is a strong need to support its implementation.

**8 . Plan for Future Evaluation**

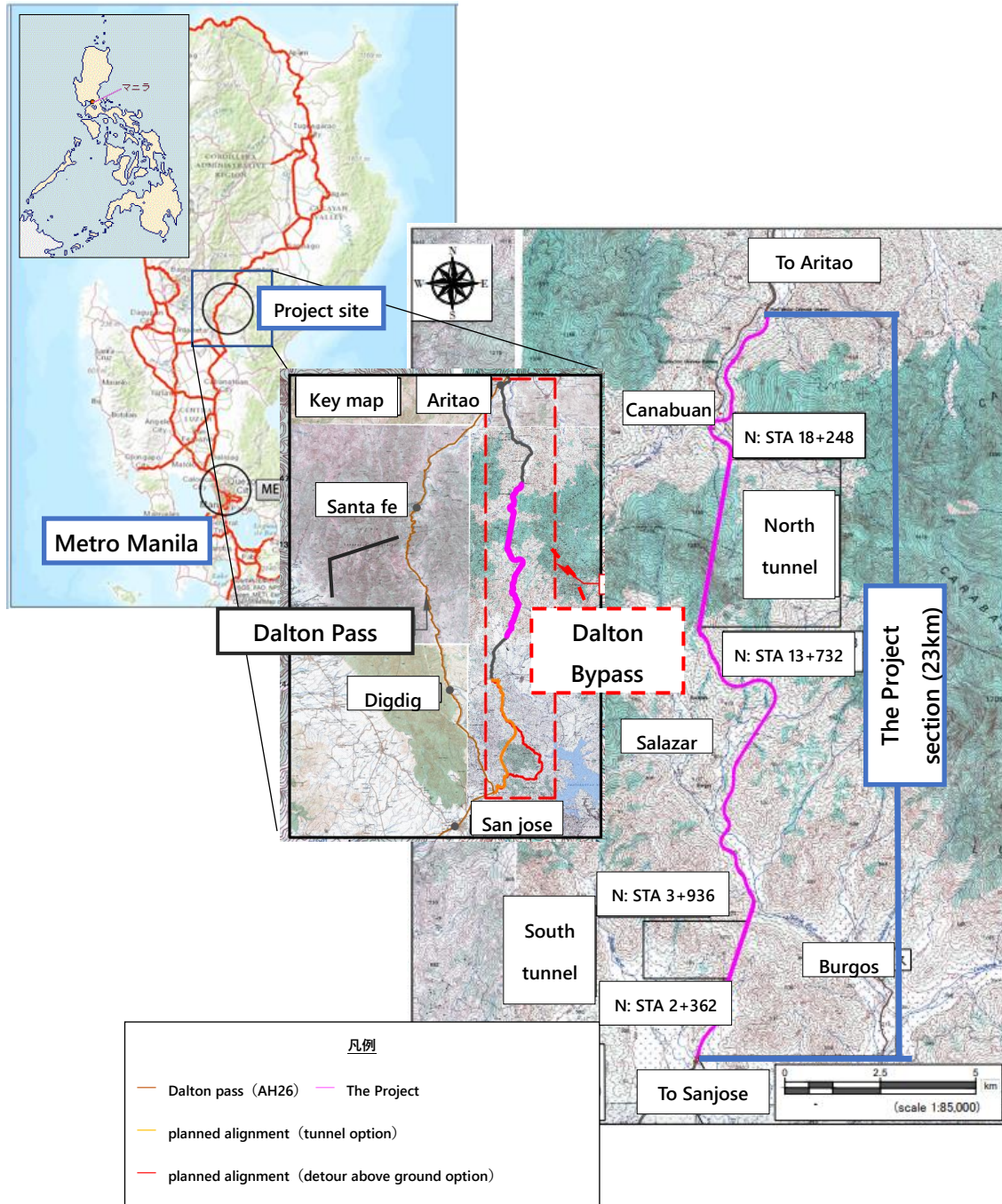
- (1) Indicators to be Used: As indicated in Sections 4.
- (2) Future Evaluation Schedule: Ex-post evaluation: 2 years after the project completion

END

Attachment: Dalton Pass East Alignment Road Project site map



Dalton Pass East Alignment Road Project site map



Source: Study on the Bypass Road Project in Dalton Pass, Republic of the Philippines (Ministry of Economy, Trade and Industry, 2012)