Ex-Ante Evaluation Paper (for Japanese ODA Loan)

South Asia Division 1, South Asia Department, JICA

1. Name of the Project

Country: India

Project Title: North East Road Network Connectivity Improvement Project (Phase 6)

Loan Agreement: March 31, 2022

2. Background and Necessity of the Project

(1) Current Status and Issues of the Road Sector Development in India

In India, the National Highways Development Project (hereinafter referred to as “NHDP”) was initiated by the Ministry of Road Transport and Highways (hereinafter referred to as “MoRTH) in 2001. Under this project, major arterial roads connecting major cities including the Golden Quadrilateral that links the capital Delhi, Mumbai in the west, Kolkata in the east, and Chennai in the southeast have been developed. In 2015, development of the main arterial roads was steadily under way, including the completion of road construction work on the entire section planned in 2001 (7,522 km).

On the other hand, the pavement ratio of all roads in the northeast region is 34.1% (relative to the national average of 70.5%), the ratio of two-way two-or-more-lane roads among national roads is 48.0% (relative to 70.9%) (Basic Road Statistics of India 2017–2018). Slope protection works and drainage channels for landslide protection have not been developed in many areas. This delay in road development has impeded the stable flow of people and materials within the region and with other regions in and outside of India, which is attributable to the delay in economic development.

National Highway 208 (hereinafter referred to as NH208), the target road of the North East Road Network Connectivity Improvement Project (Phase 6) (hereinafter referred to as the Project), forms part of the international distribution network that crosses the entire state of Tripura and connects to a road that leads to Chattogram, the second largest city and the largest port city of Bangladesh. The distribution between India and Bangladesh is mainly conducted through Bangladesh's western border, and despite the geographic proximity of northeastern India and Bangladesh, distribution is mostly conducted via routes that take a long detour around the northern part of Bangladesh. NH208, the target road of the Project, is poorly paved and is a two-way 1-to-1.5-lane road, which hinders human transportation and distribution. If the

international distribution network is improved by upgrading roads (including the construction of new bypasses) through the Project, it will become a corridor running north to south through the northeastern part of India and Bangladesh. As a result, the corridor is expected to greatly reduce the time it takes for transport and exchange of people and materials between northeast India and Chattogram Port, which boasts the largest cargo handling volume in Bangladesh, and Matarbari, where the country's first deep seaport is being constructed, thereby activating the flow of transportation and distribution. Furthermore, active use of the shipping industry and this international distribution network is also expected to explore new distribution routes to the main part of India with its northeastern region as the gateway.

There are high expectations for Japan's cooperation in connectivity improvement. At a meeting between foreign ministers of India and Bangladesh held in March 2021 Indian Foreign Minister Jaishankar expressed his expectations for Japan to be a partner in a project for connectivity improvement between the two countries. Aiming to improve the international road network, the Indian government is currently moving ahead with a project to construct a customs clearance office at Sabroom, located at the southern end of NH208 and facing the Bangladesh border. Across the border in Bangladesh is Ramgarh and the Indian government is supporting a project that will turn Bangladesh's national highway from Ramgarh to Baraiyarhat into a two-way four-lane road (repair of bridges in this same road section currently supported by Japan, to be explained later). The Project is therefore considered to have a large strategic significance as an example of Japan-India cooperation toward connectivity improvement in South Asian countries. The Project will contribute to the promotion of economic development in the region by improving the existing road of NH208 (including the construction of new bypasses), which connects Khowai to Sabroom in Tripura and is therefore positioned as a high priority project essential for the economic growth of the region.

(2) Japan’s and JICA's Cooperation Policy and Operations in the Road Sector / Tripura

The Country Assistance Policy for India (March 2016) states that the country will "develop the critical infrastructure necessary to ensure continued investment and high growth amid the need to achieve inclusive and stable high economic growth." The Policy also identifies "reinforcement of connectivity" as a priority area. With a view to eliminating infrastructure bottlenecks with respect to

investment and economic growth, the Policy will support the development of transport infrastructure so as to strengthen connectivity among major industrial cities, economic zones, and regions in the country. It further states that the two countries will promote cooperation to foster the improvement of connectivity between the northeast region and its domestic and international neighbors as confirmed between the leaders of Japan and India. To be specific, bridge repair work is supported in the Bangladesh part of the corridor section that connects at Sabroom (Ramgarh, which is the name on the Bangladesh side of the border, to Baraiyarhat) through the yen loan Cross-border Road Network Improvement Development Project (Bangladesh). The national highway development from Chattogram to Matarbari is under way under the yen loan Matarbari Port Development Project and the Chattogram - Cox's Bazar Highway Improvement Project (E/S). Through these projects, the road network is soon to be connected from northeastern India to Matarbari Port via Chattogram. Considering these situations, the Project is expected to produce high synergetic effects with the Japan-supported connectivity and regional development schemes under way in Bangladesh. As mentioned above, the Project is expected to form part of the international distribution network between India and Bangladesh and will contribute to the realization of a "Free and Open Indo-Pacific" by promoting trade through connectivity improvement among the areas in and outside of the northeastern region of India.

In addition, JICA Country Analysis Paper for India (March 2018) also identifies improving connectivity as a priority area, and the Project is consistent with these policies and analysis, as it is designed to promote support for infrastructure development with an eye to eliminating infrastructure bottlenecks to investment and growth.

The Project is also considered to contribute to Goal 3 (Ensure healthy lives and promote well-being for all at all ages (Halve the casualties of road traffic accidents)), Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), and Goal 13 (Take urgent action to combat climate change and its impacts) of the SDGs. Thus, the need to support the implementation of the Project is high.

(3) Other Donors' Activities

The World Bank already implemented the Assam State Roads Project (State

Highway 46) (March 2012 to March 2018) and the Mizoram State Roads Project (June 2014 to April 2021) in the northeast region. In addition, the World Bank has started the Bangladesh regional connectivity project (April 2017 to December 2023: about US$170 million) to support modernization of customs clearance offices in Bangladesh in order to facilitate cross-border interregional trade. This project also covers the Ramgarh Customs Clearance Office (Bangladesh side), which borders Sabroom at the southern end of Indian NH208, the target road of our Project. For the Ramgarh Customs Clearance Office, the contractor has already been selected, and construction is expected to begin by the end of FY2021. The construction period is 18 months and is scheduled to be completed by the end of 2023.

The Asian Development Bank provides support to the northeastern region of India including the states of Assam, Meghalaya, Sikkim, Manipur, Mizoram, and Tripura, through the North Eastern States Roads Investment Program Tranche 1 (October 2012 to Jun 2021) and Project 2 (May 2014 to November 2021). The Bank also supports reinforcement of regional trade corridors including those in each target country, the BCIM Economic Corridor (Bangladesh, China, India, and Myanmar) and the BBIN Initiative (Bangladesh, Bhutan, India, and Nepal) through the South Asia Subregional Economic Cooperation (SASEC) road connection investment project.

3. Project Description

(1) Project Objective

The Project is designed to improve the existing roads of NH208 (including the construction of new bypasses) linking Khowai to Sabroom, Tripura, in the northeastern part of India to improve connectivity within the region as well as other regions in and outside of India, thereby contributing to the promotion of regional economic growth.

(2) Project Site / Target Area

State of Tripura (population: approximately 3.67 million (2011))

(3) Project Components

1) Improvement of NH208 (between Khowai and Sabroom) (including repair and width expansion of existing roads with bridges and drainage channels over a total distance of about 134 km (road widening from the current two-way 1-to-1.5-lane to two-way 2-lane) and construction of new bypasses at 7 locations (about 22 km in total))
2) Consulting services (construction supervision, environmental and social considerations, etc.)

(4) Estimated Project Cost

37,092 million Yen (Japanese ODA loan: 23,129 million Yen)

(5) Project Implementation Period

March 2022 to March 2031 (109 months in total)

The project completion is defined as the start of facility service (March 2026).

(6) Project Implementation Structure

1) Borrower: The President of India
2) Guarantor: None
3) Project Executing Agency / Implementation Structure: National Highways and Infrastructure Development Corporation Limited (NHIDCL)
4) Operation and Maintenance System: Same as above

(7) Collaboration and Sharing of Roles with Other Donors

1) Japan's Assistance Activities:

In the northeastern region of India, the loan assistance North East Road Network Connectivity Improvement Project is under way from Phase 1 to Phase 5. This assistance helps improve the connectivity in and outside of the northeastern region in conjunction with the Project. Specifically, improvement of regional national highways (including the construction of new bypasses) is supported in Meghalaya and Mizoram states by Phase 1 (loan agreement approved in March 2017) and Phase 2 (loan agreement approved in March 2018), in Tripura, the target of the Project, by Phase 4 (loan agreement approved in March 2020), and in Assam by Phase 5 (loan agreement approved in March 2021) (note that the road covered by Phase 4 is to be connected to the target road of the Project to the north). In addition, Phase 3 (loan agreement approved in October 2018) supports the construction of bridges connecting Assam and Meghalaya.

The Capacity Development Project on Highways in Mountainous Regions (2016 to 2022), one of the technical cooperation projects for India, provides various support programs including support for the formulation of guidelines on slope protection measures and road management and maintenance and support of staff capacity reinforcement of the related administrative organs. The ongoing Capacity Development Project for Resilient Mountainous Highways (2022 to 2025) intends to support capacity reinforcement of administration for development of the operation and maintenance cycle of mountain roads. Therefore, it is expected that these results will be utilized in the Project as well.

2) Other Donors' Assistance Activities: None in particular.

(8) Environmental and Social Considerations/Cross-Sectoral Issues/Gender Category

1) Environmental and Social Considerations

① Category: A

② Reason for Categorization: The Project falls under the sensitive characteristics and sensitive areas listed in the JICA Guidelines for Environmental and Social Consideration (issued in April 2010).

③ Environmental Permit: The environmental impact assessment (EIA) report on the Project was prepared by NHIDCL in November 2020 although its preparation is not required under the domestic laws of India.

④ Anti-Pollution Measures: For air quality, water quality, waste, noise, and vibration, measures will be taken during the construction to meet emission and environmental standards in India, including water sprinkling, waste disposal at government-designated disposal sites, reuse of overburden, maintenance of heavy construction equipment, and installation of sound barriers. In addition, measures will be taken for noise and vibration during service, such as maintenance of the road surface and limitation of whistles.

⑤ Natural Environment: The Project area is located 4.7 km from the Gumti Wildlife Sanctuary and 6 km from the Rema-Kalenga Wildlife Sanctuary. There are ESZs (Eco-Sensitive Zones), established to regulate and control activities around the Gumti Wildlife Sanctuary. The ESZ nearest to the Project area is about 3.5 km away. The Project is not subject to environmental clearance under Indian domestic law and is therefore not required to obtain wildlife clearance. In addition, although the migration and habitat of rare wildlife in the Project area is limited, mitigation measures, such as measures to prevent animals from being run over and killed by passing vehicles (roadkill), will be taken as necessary. Road widening will result in the felling of 5,996 trees in a forested area of approximately 128.73 ha. However, indigenous varieties will be planted as alternative trees in consideration of the surrounding ecosystem and vegetation. The specific location and number of trees to be planted will be determined through consultation with the local forestry authority at the project implementation stage.

⑥ Social Environment: The Project involves land acquisition of about 400

ha and involuntary resettlement of 463 households, and land acquisition, compensation, and support will be provided based on the land acquisition and resettlement plan prepared in accordance with the country's domestic procedures and JICA guidelines. The Tripuri tribe, a Scheduled Tribe under the Constitution of India, resides in some of the Project areas, and consideration is being given to them in the consultations with local residents and livelihood restoration support measures. No particular opposition to the implementation of the Project was seen in the community consultation on the Project.

⑦ Other/Monitoring: During the construction period, contractors and others will monitor air quality, water quality, waste, noise, vibration, etc. under the supervision of NHIDCL. NHIDCL will monitor air quality, water quality, noise, vibration, etc. during the in-service period. Land acquisition, resettlement, and livelihood restoration will be monitored with the support of the department authorized to conduct surveys with respect to land acquisition and an implementation promotion NGO employed by NHIDCL, and ecosystem monitoring will be conducted by NHIDCL and the Department of Forestry during the construction and in-service periods.

2) Cross-Sectoral Issues

① Climate Change: Although traffic is expected to increase through the Project, the Project will contribute to climate change (mitigation measures), as it is expected to reduce greenhouse gas (GHG) emissions by 18,565 tons per year (estimated for this phase as of 2030) due to improved trafficability.

② Poverty Measures / Poverty Considerations: The Project is expected to stimulate the economic activities of residents along the road, thereby contributing to poverty reduction.

③ Disability Considerations: With regard to disability considerations, it has been confirmed at the appraisal that persons with disabilities are positioned as socially vulnerable groups in the land acquisition and resettlement plan and will receive necessary considerations such as livelihood restoration support at the time of relocation.

④ Prevention of AIDS/HIV and other infectious diseases: As part of the effort to prevent the spread of the novel coronavirus infection, a list of measures (36 in total) to be implemented during the formation and

implementation of the Project was agreed upon at the time of appraisal. This agreement has clarified relevant activities including development of epidemic prevention materials and equipment, improvement of the working environment including the code of conduct, work supervision, and awareness raising. Appropriate monitoring with a constant focus on the impact of the novel coronavirus will be made through the project implementation stage by receiving quarterly reports on the status of implementation of these items from the implementing agency in order to allow the implementing agency to take flexible and suitable actions. In addition, HIV/AIDS measures for construction workers will be implemented by construction contractors during the construction phase.

3) Gender Category:

■ Gender Informed (Significant) (Gender activity integration project)

[Activities / Classification Rationale] The Project will promote the employment of women in construction work and maintenance and take measures from the viewpoint of gender such as ensuring that heads of households receive equal compensation regardless of gender when resettlement takes place.

(9) Other Important Issues: None in particular.

4. Target Outcomes

(1) Quantitative Effects

Outcomes (Operation and Effect Indicators)

Indicators	Location/Type, etc.	Baseline (2020)	Target (2028) [2 years after project completion]
Average travel time (minutes) for the target section	Entire section	245	121
Average travel cost (rupees/km) for the target section	Passenger car Truck	23.50 58.62	15.84 42.07
Annual average daily traffic volume in the target section (PCU[Note 1]/day)	Khowai–Teliamura	4,000	8,300
	42.3 km point[Note 2] (near Rangamati)	1,200	3,300
	88.0 km point (near Ailmara)	140	400
	132.8 km point (near Harina)	180	500
No. of passengers in the target section (thousand persons/year)	Khowai–Teliamura	5,512	9,043
	42.3 km point (near Rangamati)	1,815	3,385
	88.0 km point (near Ailmara)	224	417
	132.8 km point (near Harina)	257	479
Cargo volume in the target section (thousand tons/year)	Khowai–Teliamura	409	2,014
	42.3 km point (near Rangamati)	338	978
	88.0 km point (near Ailmara)	48	140
	132.8 km point (near Harina)	43	125

(Note 1) Passenger car unit

(Note 2) Distance from starting point (Khowai)

(2) Qualitative Effects

Improvement of connectivity with other regions, both domestically and internationally, socio-economic development of the surrounding areas of the target section, and improvement of travel comfort in the target segment, etc.

(3) Internal Rate of Return

Based on the following assumptions, the economic internal rate of return (EIRR) for the Project is 13.1%. Since the Project will not collect tolls and thus not generate any revenue, the financial internal rate of return (FIRR) is not calculated.

[EIRR]

Cost: Construction costs, operation and maintenance costs (both excluding taxes)

Benefit: Reduction in vehicle running costs and in travel time costs

Project Life: 35 years

5. External Factors and Risk Control

(1) Preconditions: N/A

(2) External Factors: N/A

6. Lessons Learned from Past Projects

Based on the experience of the previous yen loan projects and road sector projects in India, since it took a long time to complete the projects due to the lack of coordination between the implementing agencies responsible for land acquisition and resettlement planning and the state government responsible for implementation of the plan, it is important in this process to carefully follow up on the collaboration between the implementing agency and the state government and NGOs and on the progress of land acquisition. This is an important lesson learned.

Based on lessons learned from past projects, the land acquisition and resettlement plans, previously prepared mainly by NHIDCL in the past phases, have been prepared in the current phase by NHIDCL with the cooperation of the state government, and it was confirmed that the information has been sufficiently shared by both parties in the planning stage. For land acquisition and resettlement, while the necessary procedures including holding of explanatory meetings for residents have been taken, it is already confirmed that PMU will conduct a monitoring survey on the progress of these operations and on the status of living after resettlement with the support of an NGO employed by the implementing agency and with constant cooperation with the state

government and that a system has thus been put in place that ensures periodic reporting of such survey results until completion of resettlement. If necessary, JICA plans to encourage further promotion of the procedure.

7. Evaluation Results

The Project is in line with the development issues and policies of the country and the cooperation policy and analysis of Japan and JICA, and will conduct national highway improvement (including construction of new bypasses) for the national highway connecting Khowai and Sabroom in the state of Tripura in the northeastern region of India, thereby improving the connectivity with various areas in the northeastern part of India and other regions in and outside of the country. In addition, the Project will contribute to Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), and Goal 13 (Take urgent action to combat climate change and its impacts) of the SDGs. Considering these benefits, it is concluded that there is a strong need to support implementation of the Project.

8. Plan for Future Evaluation

(1) Indicators to Be Used

As indicated in Sections 4.

(2) Future Evaluation Schedule

Ex-post evaluation: two years after the project completion

End