



Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development & Co-operatives
Local Government Division
Local Government Engineering Department (LGED)

**Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Improvement of Community Infrastructure, Growth Centre, others roads & Connecting
Roads at Rajbari District**



**Environmental & Social Assessment and Management Report of
Community Roads**

Package Name: LGED/RIVER/RAJ/21-22/GCCR-21

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ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BMD	Bangladesh Meteorological Department
BOQ	Bill of Quantity
DPHE	Department of Public Health Engineering
EA	Environmental & Social
ECR	Environmental Conservation Rules, 2023
E.I.C	Engineer in Charge
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
E&S	Environmental and Social
ESCoP	Environmental and Social Codes of Practices
ESCP	Environmental Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESSR	Environmental and Social Screening Report
ESSs	Environmental and Social Standards
FAO	Food and Agriculture Organization
GoB	Government of Bangladesh
GPS	Government Primary School
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IEFs	Important Environmental Features
KM	Kilometer
KMPH	Kilometer Per Hour
LGED	Local Government Engineering Department
LMP	Labour Management Procedures
LS	Lump Sum
MDSP	Multipurpose Disaster Shelter Project
MoEFCC	Ministry of Environment, Forest and Climate Change
MM	Millimeter
MoLGRDC	Ministry of Local Government, Rural Development and Cooperatives
NPDM	National Plan for Disaster Management
PD	Project Director
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
RIVER	Resilient Infrastructure for Adaptation and Vulnerability Reduction
RPF	Resettlement Policy Framework
SEP	Stakeholders Engagement Plan
SMC	School Management Committee
SOPs	Standard of Procedures
UNDP	United Nations Development Programme
WB	World Bank

Executive Summary

The Environmental & Social Assessment and Management Report (ESAMR) of Community Roads for Rajbari District has been prepared for the sub-project titled “Improvement of Community Infrastructure, Growth Centre, others roads & Connecting Roads at Rajbari District under the RIVER Project.” The initiative is jointly financed by the World Bank and the Government of Bangladesh, and aims to strengthen climate-resilient infrastructure and enhance accessibility to essential community facilities in vulnerable flood-prone regions. The RIVER Project focuses on improving rural infrastructure and disaster preparedness in flood-affected districts of Bangladesh by developing safe evacuation routes, strengthening community connectivity, and ensuring reliable access to flood shelters during emergency situations.

Under this sub-project, eight (8) community infrastructures connecting roads in Rajbari District will be improved to provide safe and sustainable access to nearby flood shelters and essential social infrastructure. The roads are located in five upazilas- Rajbari Sadar (1 road with total length of 1.607 km), Kalukhali (2 roads with total length of 3.04 km), Goalanda (1 road with 2.165 km), Baliakandi (1 road with 1.0 km), and Pangsha (3 roads with active length of 3.15 km) Upazila-which are characterized by rural settlements, agricultural landscapes, and periodic exposure to seasonal flooding.

The Environmental and Social Assessment has been conducted by D&SC to evaluate potential environmental and social impacts associated with the proposed road improvement activities and to develop suitable mitigation and management strategies in compliance with national environmental regulations and the environmental and social standards of the World Bank. The assessment process included environmental and social screening, field reconnaissance surveys, stakeholder consultations, and the review of relevant secondary data and policy documents. The assessment team visited the proposed road alignments and surrounding areas to identify sensitive environmental and social features that may be affected during construction and operation phases.

Overall, the activities under this works package involve rehabilitation and improvement of community roads through bituminous surfacing, localized structural works (including bridges/culverts), slope protection, utility relocation, and roadside plantation. More specifically, the interventions as well as the overall physical features around the roads are given below:

- (i) **Kamaldia R&H–Kutipaturia Hat via Singa & Mohisakhola Road (382764087)** will be upgraded with BC over the full 1.607 km (Ch. 0+000 to 1+607), replacing HBB, BFS, and earthen sections, along with slope protection (59 m left, 575 m right). Existing structures include a pipe culvert at Ch. 365–366 and a bridge at Ch. 944–956. The corridor includes dense settlements (Ch. 40 m to 1600 m), graveyards (Ch. 139 m, 1375 m, 1490 m), mosque (Ch. 1375 m), shops (Ch. 1216 m, 1443 m), ponds (Ch. 668 m, 833 m), and small canals (Ch. 300–505 m). Due to these mixed features, construction should maintain drainage continuity near canals and ponds and ensure safety measures near settlements, religious sites, and market activity areas.

- (ii) **Gopalpur GPS–Raynagor Bazar Road (382774230)** will be improved with BC along its full 1.34 km length (Ch. 0+000 to 1+340), replacing damaged HBB, with extensive palisading at multiple chainages on both sides. The roadside environment is dominated by scattered settlements (Ch. 518 m, 818 m) and an Eidgah graveyard (Ch. 1067 m), with a bazar at the terminal point (Ch. 1340 m). As pedestrian and local traffic increases near the bazar and religious site, safety provisions should be emphasized in these sections, along with controlled access around settlement clusters.
- (iii) **Pangsha–Kalukhali Road via Shibdoa (382774227)** will be upgraded with BC from Ch. 0+000 to 1+700, replacing damaged HBB and earthen sections, with localized slope protection on the right side at multiple chainages (Ch. 200–906 m). The alignment passes through areas with close settlements (2–4 m offset), agricultural land, and gardens along both sides. Given the proximity of settlements and cultivated areas, construction should maintain access and minimize disturbance, while slope protection sections should be carefully executed to prevent localized erosion.
- (iv) **Dhulihat Sheikh Bari Majar–Senbari Pucca Road (382735318)** will be improved with BC over 1.20 km (Ch. 0+000 to 1+200), replacing BFS and earthen sections, with palisading at Ch. 567–587 and Ch. 681–690 (right side). The road passes near a mazar and mosque at the starting point (~10 m), another mosque at Ch. 305 m (~5 m), and a pond at Ch. 600 m (~7 m), along with surrounding agricultural land. Due to these features, drainage near the pond should remain unobstructed, and cautionary measures should be emphasized near religious locations.
- (v) **Mourat UP Office–Khea via Biswas Para Road (382735316)** will be developed with BC from Ch. 0+000 to 0+600, upgrading the existing earthen section and reconstructing U-drains at Ch. 400 and Ch. 500. The roadside includes mosque, Eidgah, and graveyard within 12–15 m, along with a bazar at Ch. 520 m (~5 m). As the road connects community and market areas, drainage restoration at U-drain locations should be ensured, and traffic safety should be maintained near the bazar and religious sites.
- (vi) **Bajeapta–Molonche Road (382735018)** will be upgraded with BC along Ch. 0+000 to 1+350, converting the earthen surface, with palisading at Ch. 500–520 (right) and Ch. 730–760 (left). The corridor is largely agricultural, with nearby features including Mourat UP (~100 m), GPS (~180 m), bazar (~250 m), and a mosque (~40 m). Construction activities should maintain access to these facilities and ensure stability at palisading sections, particularly near settlement-linked activity zones.
- (vii) **Doulatdia NHW–Purbo Tenapocha UZR Road (382294039)** will be improved with BC over the full 2.165 km, including palisading at selected chainages, RCC guide posts (50 m), and toe walls at Ch. 1+895–1+932 and 2+138–2+160. Existing structures include U-drain (Ch. 473 m) and pipe culverts (Ch. 619 m, 916 m, 1271 m). The road passes through settlements (5–10 m offset), ponds, poultry farms, agricultural land, streams, and a ditch (Ch. 2020 m). Drainage continuity should be maintained at culvert, stream, and ditch locations, while safety considerations should focus on settlement and farm access points.

- (viii) **Dharmotola Hat–Jangle UP Office Road (382074131)** will be upgraded with BC from Ch. 1+600 to 2+600, improving existing BC and BFS sections, with reconstruction of U-drain at Ch. 2+370 and palisading at Ch. 1+810–1+850. A regulator is located at Ch. 1+818. The corridor includes ponds (Ch. 0 m, 556 m, 762 m), agricultural land, banana and bamboo vegetation, and a temple at Ch. 940 m (~15 m). As drainage structures are present along the alignment, their functionality should be preserved during construction, with attention to safety near water bodies and the temple area.

The assessment study also reveals that the proposed road improvement works will largely be carried out within the existing Right of Way (ROW), thereby minimizing the need for land acquisition and significantly reducing potential resettlement issues. The existing roads are mainly earthen or partially paved rural roads that require improvement to ensure year-round accessibility, improved drainage, and enhanced structural stability. The project will involve activities such as road widening where necessary and contingent upon the available land within ROW, strengthening of road surfaces, improvement of drainage systems, and installation of small culverts or cross-drainage structures where required. However, the scope of works, including specific safety and environmental measures along with potential impacts that may arise from the proposed interventions, are tabulated hereunder:

Despite the substantial socio-economic benefits the project will bring, certain construction-phase activities, such as earthworks, excavation, and material handling, are likely to cause localized soil disturbance, potential erosion, and impacts on roadside vegetation. The removal of trees and clearing of vegetation may temporarily affect the ecological balance and visual landscape, while also contributing to minor habitat disruption. In addition, construction near water bodies poses a risk of water contamination due to sediment runoff, improper waste disposal, or accidental spillage of construction materials. Air and noise pollution are anticipated due to vehicular movement, operation of construction machinery, and material transport, which may affect nearby residents, educational institutions, and health facilities. These activities may also cause temporary disruption to traffic flow and pedestrian movement, limiting access to homes, schools, and community services. In areas with dense human settlements or educational institutions, there is an increased risk of accidents, as well as occupational health and safety (OHS) concerns for workers and the public. Furthermore, the presence of a mobile workforce introduces potential risks related to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), which require careful management. Additional impacts include temporary social inconvenience, restricted access to local infrastructure, and safety hazards associated with open excavations, movement of heavy vehicles, and ongoing construction operations. The dismantling and relocation of electric poles may also temporarily interrupt utility services if not properly coordinated. All these impacts are very localized and mostly avoidable and do not pose any significant threat or harm to local inhabitants or biodiversity, if general good engineering and OHS practices are adopted. Therefore, the overall risk for this sub-project can be categorized as 'Moderate'. No ethnic groups are found living within the catchment area and there is no risk of involuntary resettlement or loss of common property resources.

To address these potential impacts, a comprehensive Environmental and Social Management Plan (ESMP) has been developed as part of this report in **Annexure-1**. The ESMP outlines specific mitigation and management measures that must be implemented during project construction and operation phases. Key environmental mitigation measures include regular water spraying to control dust, proper maintenance of construction equipment to minimize noise and emissions, safe disposal and management of construction waste, and restoration of disturbed areas following construction activities. Where roadside trees need to be removed, compensatory plantation programs will be undertaken to restore local vegetation and maintain ecological balance.

In addition, drainage systems will be carefully designed and maintained to prevent waterlogging and ensure the natural flow of stormwater. Construction activities near water bodies and agricultural lands will be conducted with special precautions to prevent contamination and protect local livelihoods dependent on farming and fisheries.

Social mitigation measures include the preparation and implementation of a Traffic Management Plan to ensure the safe movement of vehicles and pedestrians during construction works. Adequate signage, barricades, and warning signals will be installed at construction sites to reduce accident risks. Contractors will also be required to ensure proper occupational health and safety measures for workers, including the use of personal protective equipment (PPE), training on workplace safety, and emergency preparedness.

Stakeholder consultation was an integral component of the assessment process. Local community members, school authorities, religious leaders, local government representatives, and other relevant stakeholders were consulted during field visits to gather their views, concerns, and recommendations regarding the proposed road improvements. The majority of stakeholders expressed strong support for the project, highlighting that improved community roads will reduce travel time, facilitate access to markets and services, and significantly enhance evacuation and mobility during flood emergencies. Community members also emphasized the importance of proper drainage, road safety measures, and protection of roadside vegetation. Public consultation attendance sheets are in **Annexure 2**.

The project is expected to generate significant positive impacts in the long term. Improved community roads will strengthen connectivity between rural communities and flood shelters, thereby enhancing disaster resilience and emergency preparedness. Better road infrastructure will also support local economic development by facilitating the transportation of agricultural products, improving access to educational and health services, and enhancing overall rural mobility. In addition, the project will contribute to improved safety and accessibility for women, children, elderly people, and persons with disabilities who rely on these roads for daily activities.

The implementation of the ESMP, along with continuous monitoring and stakeholder engagement, will ensure that environmental and social risks are minimized while maximizing the long-term benefits of the project for local communities. The report therefore provides a comprehensive framework to guide environmentally responsible and socially inclusive implementation of community road improvement works under the RIVER Project.

1. 0 INTRODUCTION

1.1 Sub-Project Background

Bangladesh is widely recognized as one of the most disaster-prone countries in the world due to its geographic location, low-lying topography, and extensive river systems. Seasonal floods, riverbank erosion, and intense rainfall events frequently disrupt rural livelihoods and damage infrastructure, particularly in Northern Districts located near major transboundary rivers. In this context, improving resilient rural infrastructure and ensuring reliable access to emergency facilities such as flood shelters have become critical priorities for disaster risk reduction and sustainable development in the country.

To address these challenges, the Government of Bangladesh, with financial and technical assistance from the World Bank, has undertaken the RIVER Project, which aims to strengthen disaster resilience and improve rural infrastructure in flood-vulnerable regions. The project focuses on the construction and improvement of multipurpose flood shelters as well as the development of community infrastructure connecting roads to ensure safe and efficient access to these shelters during flood emergencies. These infrastructures not only function as evacuation centers during disasters but also serve as community facilities such as schools or community centers during normal periods.

The project area covers five upazilas of Rajbari District, namely Rajbari Sadar Upazila, Pangsha Upazila, Kalukhali Upazila, Goalanda Upazila and Baliakandi Upazila. These upazilas are predominantly rural and depend heavily on agriculture and local trade for livelihoods. However, many villages within these areas experience difficulties in accessing reliable transportation infrastructure, especially during the monsoon season when roads often become submerged, damaged, or impassable due to floodwaters. As a result, communities frequently face challenges in reaching schools, healthcare centers, markets, and emergency shelters during extreme weather events.

The proposed sub-project therefore focuses on improving the condition and resilience of existing community roads that connect villages to nearby flood shelters. These roads generally exist in the form of earthen or partially paved rural roads, which often deteriorate due to seasonal flooding, poor drainage, and heavy usage. Through the planned improvement works, these roads will be upgraded to more durable and climate-resilient standards to ensure year-round accessibility and safe evacuation routes during disasters.

The improvement of community infrastructure connecting roads will play a significant role in strengthening disaster preparedness and response capacity in the project area. By ensuring reliable access to flood shelters, the sub-project will enable communities to evacuate more quickly and safely during flood events. At the same time, improved road connectivity will facilitate daily socio-economic activities such as transportation of agricultural goods, access to markets, educational institutions, healthcare services and other public facilities.

In addition to enhancing disaster resilience, the development of these community roads is expected to contribute to broader rural development objectives. Improved road infrastructure will

support local economic growth, improve mobility for residents, and increase accessibility for women, children, elderly persons, and individuals with disabilities who rely on these routes for daily travel.

Considering that infrastructure development activities may create certain environmental and social impacts during construction and operation phases, this Environmental & Social Assessment and Management Report (ESAMR) has been prepared to assess potential risks and identify appropriate mitigation measures. The assessment ensures that the proposed road improvement works are implemented in an environmentally sustainable and socially responsible manner, in compliance with national environmental regulations and the environmental and social standards of the World Bank.

The findings and recommendations presented in this report will guide project authorities, contractors, and relevant stakeholders in implementing the sub-project while minimizing environmental disturbances, protecting local communities, and maximizing the long-term benefits of improved community infrastructure in Rajbari District.

1.2 Objective of the Sub-Project

The primary objective of the sub-project is to enhance the resilience, accessibility, and functionality of rural road networks that provide critical connectivity to nearby flood shelters and essential community facilities. The sub-project aims to ensure safe, reliable, and all-weather access for local communities, particularly during flood and emergency events, thereby supporting timely evacuation and reducing vulnerability to disasters. By upgrading existing road surfaces, improving drainage systems, and strengthening road structures within the existing Right of Way (ROW), the project seeks to minimize environmental and social disruptions while maximizing socio-economic benefits.

Key objectives also include facilitating the movement of people, goods, and agricultural produce, improving access to education, healthcare, and markets, and supporting the overall disaster preparedness and resilience of communities in flood-prone areas of Rajbari District. Ultimately, the sub-project contributes to both short-term safety and long-term sustainable development of rural infrastructure, ensuring that flood shelters remain accessible and that the livelihoods of local residents are protected and enhanced.

1.3 Scope of the Project

The scope of the project shall include the construction of multipurpose flood shelters and construction of related access roads, flood embankments, drainage channels (both natural and manmade). The proposed infrastructure shall be climate resilient, including cross-drainage culverts and rural bridges necessary for assured rural accessibility. Raising of selected community land above the high flood level and small-scale community infrastructure to protect land and property shall also be included.

1.4 Objectives of the Report

The main objective of this Environmental & Social Assessment and Management Report (ESAMR) is to provide a comprehensive evaluation of the potential environmental and social impacts associated with the improvement of community infrastructure connecting roads at Rajbari District under the RIVER Project and to propose appropriate mitigation and management measures. The report aims to ensure that the sub-project is planned and implemented in an environmentally sustainable and socially inclusive manner, minimizing adverse impacts on local communities, sensitive receptors, and natural resources while enhancing positive outcomes.

Specific objectives include identifying environmental features and social conditions along the road corridors, assessing risks related to construction and operational activities, recommending measures to mitigate potential impacts such as dust, noise, drainage disruption, tree removal, and traffic hazards, and providing guidelines for occupational health and safety, stakeholder engagement, and grievance redress mechanisms. Additionally, the report seeks to support compliance with national environmental and social regulations as well as the environmental and social standards of the World Bank, thereby facilitating responsible implementation of the sub-project while improving community connectivity to nearby flood shelters and essential facilities.

2.0 SUB-PROJECT LOCATION AND DESCRIPTION

This section provides a detailed description of the sub-project location, its physical and socio-economic context, and the nature of the proposed improvement works for the community infrastructure connecting roads in Rajbari District under the RIVER Project.

2.1 Sub-Project Location

The sub-project covers selected community roads located in Rajbari District, which is in the northern part of Bangladesh and is prone to seasonal flooding due to its low-lying topography and proximity to major rivers. The sub-project specifically targets five upazilas:

1. **Pangsha Upazila** - Situated within the highly volatile Brahmaputra floodplain, Pangsha Upazila experiences recurrent monsoon flooding and riverbank erosion that frequently destroy existing earthen roads and isolate vulnerable rural populations. As much of the area consists of char land with deteriorated infrastructure and high flood susceptibility, improving these community roads is vital for ensuring reliable connectivity to flood shelters.
2. **Kalukhali Upazila** - Characterized by flat agricultural terrain, this upazila experiences seasonal inundation. The connecting roads targeted under this sub-project are essential for linking villages with local markets, schools, health facilities, and nearby flood shelters.
3. **Goalanda Upazila** - The existing rural road infrastructure in Goalanda Upazila predominantly consists of earthen tracks susceptible to seasonal inundation. Frequently leaving expansive and remote char land communities completely isolated during the peak monsoon. Upgrading these community roads with climate-resilient elevations is critical to

ensure unimpeded, safe access to multi-purpose flood shelters during extreme weather events.

4. **Baliakandi Upazila** - Baliakandi Upazila is largely characterized by low-lying rural settlements, agricultural land, ponds, canals, and drainage-dependent areas that remain vulnerable to seasonal waterlogging and monsoon inundation. During heavy rainfall and flood events, earthen and partially improved rural roads may become damaged or difficult to use, affecting access to markets, schools, Union Parishad offices, religious sites, and flood shelters. Improving the targeted community roads in Baliakandi is therefore important for strengthening climate-resilient connectivity, maintaining local mobility during emergencies, and ensuring safer access for vulnerable rural populations.
5. **Rajbari Sadar Upazila** - As the district headquarters, this upazila has a mix of semi-urban and rural areas. The connecting roads targeted here link local communities with flood shelters, health facilities, and administrative centers, enhancing both daily accessibility and emergency response capacity.

The selected roads for improvement are strategically located near flood shelters to ensure safe and timely access during floods and other natural disasters. Most of the roads traverse agricultural lands, rural settlements, and areas with community facilities such as schools, mosques, and local markets. Map illustrating Community Roads of Rajbari District is attached in **Figure 2.1**.

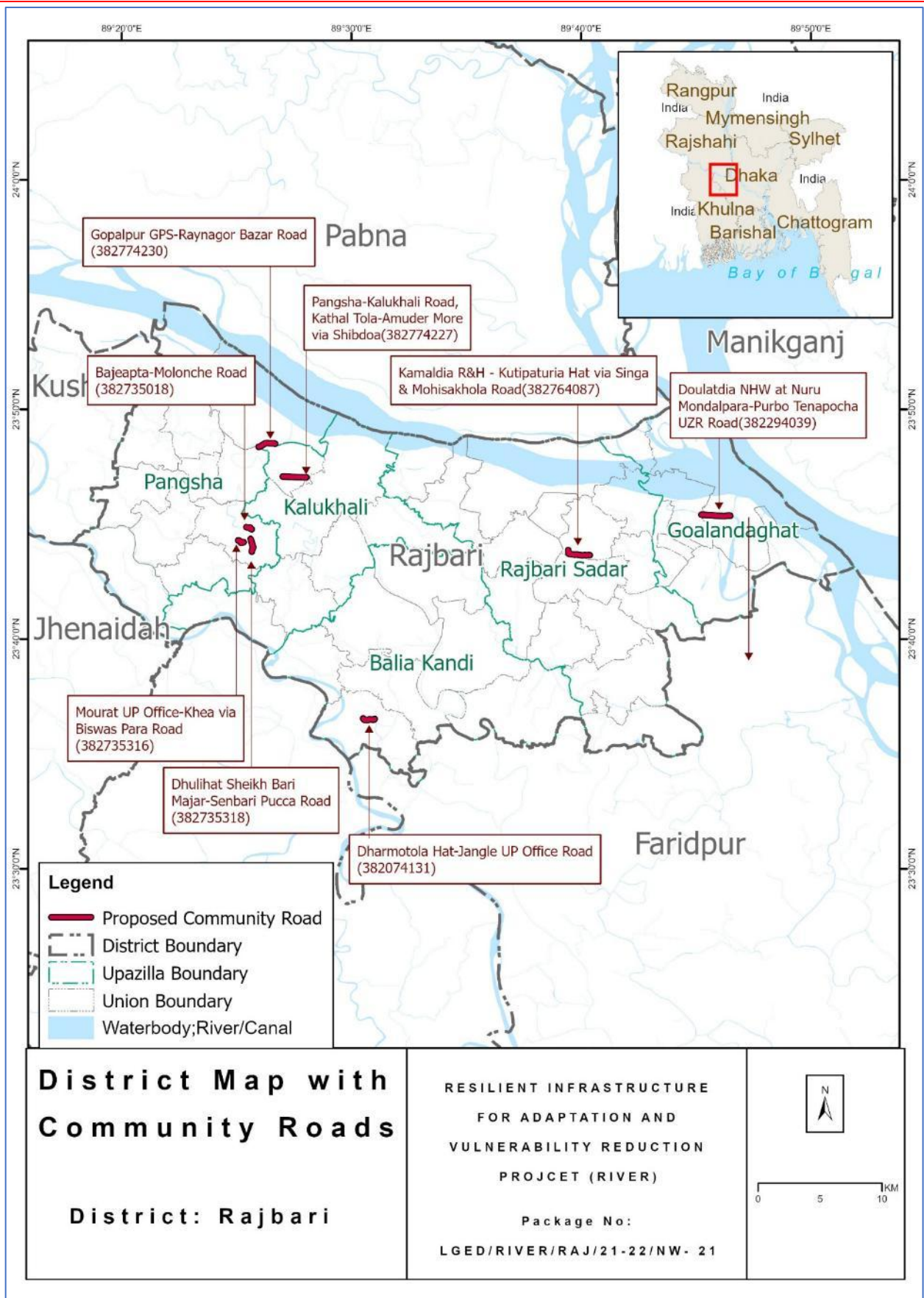


Figure 2.1: Map illustrating Community Roads of Rajbari District

2.2 Physical Features and Environment

The terrain across the project area is predominantly flat and low-lying, with several small rivers, canals, and drainage channels passing through the upazilas. During monsoon season, these areas are prone to waterlogging and localized flooding. The existing road infrastructure mainly consists of earthen or semi-paved roads with limited drainage facilities, making them vulnerable to damage and disruption during heavy rainfall. Roadside vegetation, including trees and shrubs, is present along many stretches, contributing to local ecology and providing shade to communities.

2.3 Socio-Economic Context

The project area is predominantly rural, with communities largely dependent on agriculture, fisheries, and small-scale trade for their livelihoods. Key social features along the proposed road corridors include:

- Local settlements and homesteads
- Agricultural fields and small marketplaces
- Educational institutions such as primary and secondary schools
- Religious institutions including mosques and madrassas
- Public infrastructure such as community centers and flood shelters

These roads are vital for socio-economic development, enabling residents to access essential services, markets, and emergency evacuation routes during floods. The proximity of flood shelters to these roads underscores their importance for disaster preparedness and response.

2.4 Sub-Project Description

The sub-project involves the improvement of existing community roads to enhance their structural stability, surface quality, and drainage capacity. Key components of the road improvement works include:

- Road Surface Improvement - Upgrading existing earthen or semi-paved roads with compacted soil, gravel, or pavement to ensure year-round usability.
- Road Widening and Shoulder Stabilization - Where necessary, the roads will be widened within the existing Right of Way (ROW) to facilitate safer two-way movement of vehicles and pedestrians.
- Drainage Enhancement - Construction or repair of side drains, culverts, and cross-drainage structures to prevent waterlogging and maintain road longevity.
- Slope Protection and Embankment Strengthening - Stabilization of embankments and road shoulders to reduce erosion and maintain structural integrity during floods.
- Traffic Safety Measures - Installation of signage, demarcation, and other traffic management interventions near schools, markets, and flood shelters to ensure safety during construction and operation.

The sub-project is designed to minimize environmental and social impacts by utilizing existing ROWs and avoiding unnecessary land acquisition. Construction activities will be planned to limit disruption to local communities and ensure continuous access to flood shelters.

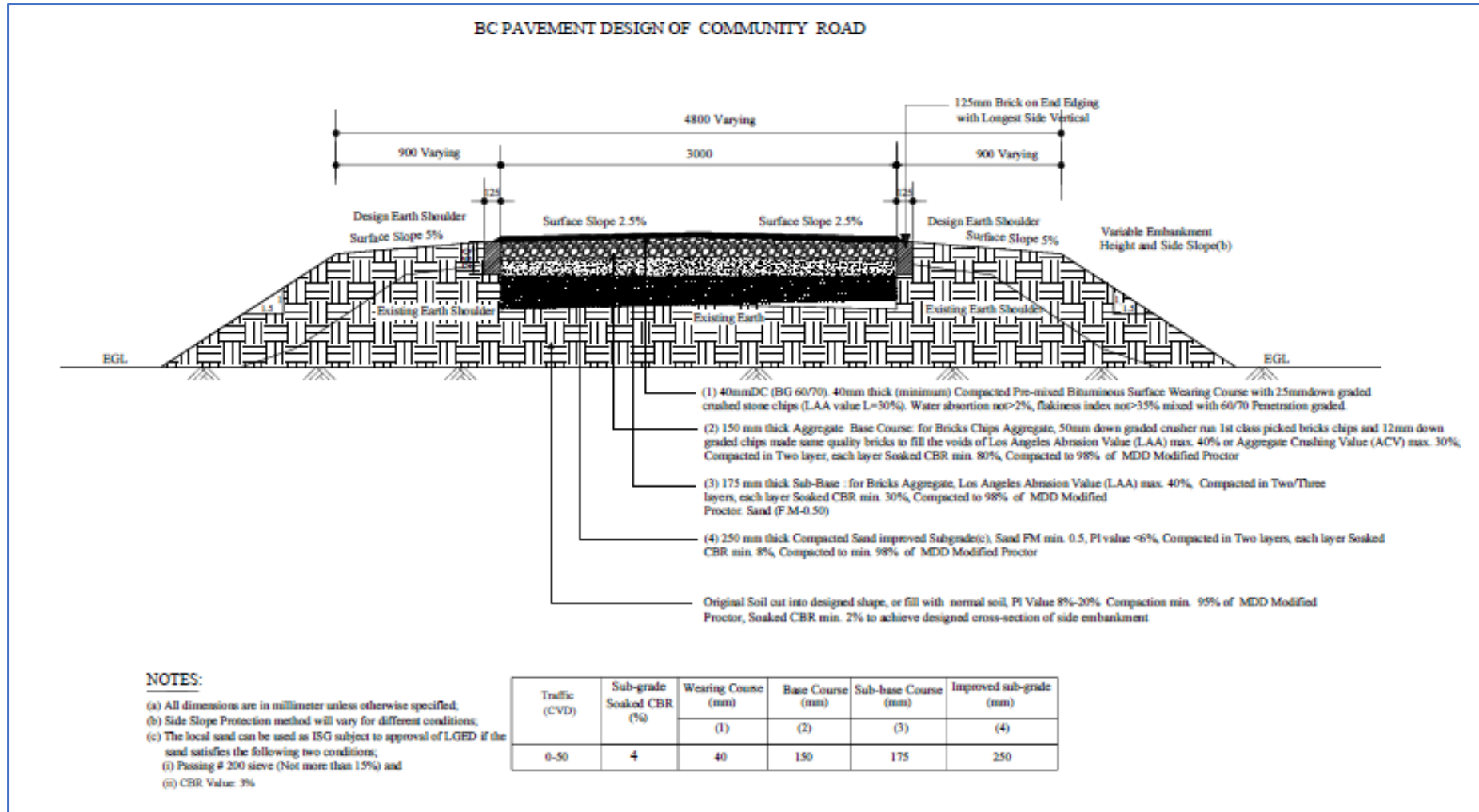


Figure 2.2: Typical Pavement Design of Community Roads

2.5 Elementary information of Community Road in Rajbari District

The community road package components in Rajbari District, located in the western region of Dhaka Division, have been identified under the RIVER Project to improve rural connectivity and facilitate access to nearby flood shelters and community facilities. The proposed community roads fall within the project influence area of several flood shelter construction sites located in different upazilas such as Rajbari Sadar, Pangsha, Kalukhali, Baliakandi and Goalanda Upazila. Each road component has been identified with specific GPS coordinates to define its alignment and location within the respective union parishads such as Kamaldia, Boro Doari, Mohammadpur, Gopalpur, Ray nagar , Kathal Tola More, Amuder , Dhuliat, Kheyaghat, Bajapta, Molonche, Nuru Mondol Para, Omor Ali Mollah Para, Manik Saddar Bari, Bepari Para Mor, Tenapecha, Dharmotola, Bannatoli Mor etc. These community roads are strategically selected to connect surrounding rural settlements, growth centers and different service facilities with the nearest proposed flood shelter sites, ensuring safe evacuation and improved access during flood events. The project influence area generally includes roadside settlements, agricultural fields, local markets, and educational institutions situated along the alignment. The development and rehabilitation of these roads will significantly enhance disaster resilience, mobility, and socio-economic activities of the local population while ensuring better connectivity to emergency shelters and essential services. Acknowledging this matter, such details are accounted for as given below in **Table 2.1**.

Table 2.1: Basic Featured Information of community road components

Sl. No.	Name of Upazila	Union	Name of Proposed Community Road	GPS Coordinates	Total Length (Km)	Locations Under Project Influence Area	Nearby Proposed Flood Shelter	Distances from nearby Shelters
1.	Rajbari Sadar	Dadshi	Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)	<p>Starting Point 23.731084 N 89.655987 E</p> <p>Ending Point 23.727738 N 89.672962 E</p>	1.607	Kamaldia, Boro Doari, Mohammadpur	92 No. Kamalpur GPS	1.5 km from the proposed shelter
2.	Kalukhali	Kalikapur	Gopalpur GPS-Raynagar Bazar Road (382774230)	<p>Starting Point 23.80623 N 89.43257 E</p>	1.34	Gopalpur, Ray nagar Bazar	Yakub Hossain GPS	1.5 km from the proposed shelter

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
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Sl. No.	Name of Upazila	Union	Name of Proposed Community Road	GPS Coordinates	Total Length (Km)	Locations Under Project Influence Area	Nearby Proposed Flood Shelter	Distances from nearby Shelters
				<u>Ending Point</u> 23.8084 N 89.44477 E				
3.	Kalukhali	Kalikapur	Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)	<u>Starting Point</u> 23.78484 N 89.450409 E <u>Ending Point</u> 23.787262 N 89.455356 E	1.7	Kathal Tola More, Amuder More	Yakub Hossain GPS	1 km from the proposed shelter
4.	Pangsha	Mourat	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)	<u>Starting Point</u> 23.739363 N 89.426832 E <u>Ending Point</u> 23.730131 N 89.42773 E	1.2	Dhuliat	50 No. Choubaria GPS	0.15 km from the proposed shelter
5.	Pangsha	Mourat	Mourat UP Office-Khea via Biswas Para Road (382735316)	<u>Starting Point</u> 23.737194 N 89.421723 E <u>Ending Point</u> 23.738308 N 89.417753 E	1.35	Kheyaghat	50 No. Choubaria GPS	0.15 km from the proposed shelter
6.	Pangsha	Mourat	Bajeapta-Molonche Road (382735018)	<u>Starting Point</u> 23.748009 N 89.423693 E	0.6	Bajeapta, Molonche	50 No. Choubaria GPS	0.6 km from the proposed shelter

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Sl. No.	Name of Upazila	Union	Name of Proposed Community Road	GPS Coordinates	Total Length (Km)	Locations Under Project Influence Area	Nearby Proposed Flood Shelter	Distances from nearby Shelters
				<u>Ending Point</u> 23.746643 N 89.427596 E				
7.	Goalondo	Daulatdia, Debgram	Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (382294039)	<u>Starting Point</u> 23.7562 N 89.774708 E <u>Ending Point</u> 23.756664 N 89.754032 E	2.165	Nuru Mondol Para, Omor Ali Mollah Para, Manik Saddar Bari, Bepari Para Mor, Tenapecha	51 No. K.K.S. Shishu GPS	1 km from the proposed shelter
8.	Baliakandi	Bannatoli	Dharmotola Hat-Jangle UP Office Road (382074131)	<u>Starting Point</u> 23.6070149 N 89.8175822 E <u>Ending Point</u> 23.6083439 N 89.5161265 E	1	Dharmotola, Bannatoli Mor	46 No. Akshuna GPS	1 km from the proposed shelter

[*Sources of data: Field survey, April 2026]

2.6 Environmental / Social Category of the Subproject

The overall anticipated adverse impacts of the subproject are minimal, localized, and site-specific in nature, and mostly avoidable or mitigable and do not pose any significant threat or harm to local inhabitants or biodiversity, if general good engineering and OHS practices are adopted. Moreover, the roads will be constructed within the existing ROW and no rehabilitation or acquisition of land is required or provisioned. Further, no ethnic groups are found living within the catchment area and there is no risk of involuntary resettlement or loss of common property resources. Therefore, considering all the anticipated impacts, existing social and environmental settings and scope of work, the overall risk for this sub-project can be categorized as 'Moderate'.

2.7 Baseline Conditions of the Community Road

The baseline assessment of the community roads under the sub-project in Rajbari District provides a detailed understanding of the existing physical and social conditions, which serves as the foundation for planning road improvements while minimizing environmental and social impacts. The targeted roads pass through the upazilas of Rajbari Sadar, Pangsha, Kalukhali, Goalanda and Baliakandi Upazila.

Existing Pavement Condition and Chainage: Most of the existing roads are paved, semi-paved, HBB or earthen and exhibit varying levels of deterioration due to seasonal flooding, heavy monsoon rainfall, and limited maintenance. Potholes, rutting, and erosion along shoulders are commonly observed, particularly in low-lying sections and areas adjacent to drainage channels. Road surfaces along chainages near settlements and marketplaces are particularly affected by frequent pedestrian and vehicular use.

Existing Structures on the Road: The roads traverse areas with various existing structures, including small culverts, side drains, footbridges, local marketplaces, schools, mosques, and roadside residences. In some sections, informal drainage channels and agricultural access points intersect the road alignment. Tree cover and roadside vegetation are present along several stretches, contributing to local ecology.

Proposed Road Interventions: The sub-project proposes to upgrade the existing roads within the available Right of Way (ROW) to improve structural stability, all-weather accessibility, and flood resilience. Interventions include earthwork for raising low-lying sections, paving with compacted gravel or bituminous surfaces, slope stabilization, shoulder reinforcement, and improvement of roadside drainage to prevent waterlogging.

Proposed Structures: The project includes the construction of new small culverts, cross-drainage structures, and side drains at strategic locations to ensure uninterrupted water flow and prevent road flooding.

Safeguard Features: To ensure environmental and social sustainability, safeguard measures will be incorporated during construction and operation. Signage, speed control measures, and pedestrian pathways will be provided to enhance safety.

Overall, the baseline conditions highlight the need for targeted interventions to enhance road safety, connectivity, and resilience, while the proposed structural improvements and safeguard features are designed to address environmental and social risks, improve access to flood shelters, and support the sustainable development of the rural road network in Rajbari District. Road wise Baseline Conditions of the community Roads status are in **Table 2.2**.

Table 2.2 Status of Baseline Conditions of the Community Road

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
1.	Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (Village A)	382764087	1.607	HBB - (Ch.0+000 to 0+220, 0+680 to 0+800) BFS – (Ch.0+610 to 0+680) Unpaved/Earthen - (Ch.0+220 to 0+610, 0+800 to 1+607)	Pipe Culvert - (1m × 3.70m) ch365m to ch366 Bridge - (12m × 3.70m) ch944m to ch956	BC- (Ch.0+000 to 1+607) Slope Protection 59m (left side), 575m (right side)	Not available in site
2.	Gopalpur GPS-Raynagor Bazar Road (Village A)	382774230	1.34	Damaged HBB - (Ch.0+00 to 1+340)		BC (Ch.0+00 to 1+340) Palisading Ch 0+00 to 0+006 (right side), Ch 0+016 to 0+048 (left side), Ch 0+080 to 0+100 (right side), Ch 0+133 to 0+150 (left side), Ch 0+140 to 0+150 (right side), Ch 0+166 to 0+185 (left side), Ch 0+216 to 0+229 (right side), Ch 0+220 to 0+232 (left side), Ch 0+244 to 0+280 (left side), Ch 0+266 to 0+286 (right side), Ch 0+294 to 0+305 (right side), Ch 0+312 to 0+340 (right side), Ch 0+342 to	Not available in site

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Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
						0+357 (right side), Ch 0+400 to 0+414 (right side), Ch 0+763 to 0+773 (right side), Ch 0+798 to 0+817 (left side),	
3.	Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (Village A)	382774227	1.7	Damaged HBB - (Ch.0+00 to 0+320, Ch.1+450 to 1+700) Unpaved/Earthen - (Ch.0+320 to 0+800, Ch.0+800 to 1+450)	-	BC (Ch.0+00 to 1+700) Slope protection (12m) - Ch. 0+200 to 0+212 (Right Side), (20m) - Ch. 0+215 to 0+235 (Right Side), (35m) - Ch. 0+350 to 0+385 (Right Side), (50m) - Ch. 0+700 to 0+750 (Right Side), (14m) - Ch. 0+892 to 0+906 (Right Side)	Not available in site
4.	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (Village B)	382735318	1.2	Damaged BFS - (Ch.0+00 to 0+100, Ch.0+665 to 0+800) Unpaved/Earthen - (Ch.0+100 to 0+665, Ch.0+800 to 1+200)	-	BC (Ch.0+000 to 1+200) Palisading Ch. 0+567 to 0+587 (Right Side), Ch. 0+681 to 0+690 (Right Side)	Not available in site
5.	Mourat UP Office-Khea via Biswas Para Road (Village B)	382735316	1.35	Unpaved/Earthen - - (Ch.0+00 to 0+600)	Damaged U Drains - Ch. 0+400	BC - (Ch.0+00 to 0+600) U Drains - Ch. 0+400, Ch. 0+500	Not available in site
6.	Bajeapta-Molonche Road (Village B)	382735018	0.6	Unpaved/Earthen- (Ch.0+00 to 1+350)	-	BC-(Ch. 0+000 to 1+350)	Not available in site

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Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
						Palisading Ch. 0+500 to 0+520 (Right Side), Ch. 0+730 to 0+760 (Left Side)	
7.	Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (Village A)	382294039	2.165	HBB - (Ch.0+00 to 2+165)	U Drains - Ch. 0+473 Pipe culvert Ch. 0+619, Ch. 0+916, Ch. 1+271	BC (Ch.0+00 to 2+165) Palisading Ch. 0+129 to 0+150 (Right Side), Ch. 0+205 to 0+236 (Right Side), Ch. 0+450 to 0+465 (Right Side) RCC Guide post (50m) RCC Toe Wall Ch. 1+895 to 1+932, Ch. 2+138 to 2+160	Not available in site
8	Dharmotola Hat-Jangle UP Office Road (Village A)	382074131	1	BC- (Ch.1+600 to 1+800) BFS- (Ch.1+800 to 2+600)	Regulator (4.5m × 4.5m)- Ch. 1+818 Damaged U-Drain (625mm × 600m)- Ch. 2+370 Damaged Palisading Ch. Ch. 1+810 to 1+850	BC (Ch.1+600 to 2+600) U-Drain (625mm × 600m)- Ch. 2+370 Palisading Ch. Ch. 1+810 to 1+850	Not available in site

3.0 Environmental and Social Survey and Screening

3.1 Survey and Screening Methodology

An Environmental and Social Survey and Screening have been carried out within the Project Influence Area (PIA), defined as a 0.5 km buffer on both sides from the centerline of the proposed road alignment. The purpose of the survey was to identify baseline environmental and socio-economic conditions, as well as potential sensitive receptors that may be affected by project activities. The methodology generally involves a combination of desk review, field reconnaissance, and stakeholder consultation. Initially, relevant secondary information was reviewed to understand the baseline settings. This was followed by systematic field surveys along the road alignment within the 0.5 km PIA, where environmental features (water bodies, vegetation, wetlands, and flora and fauna, etc.) and social features (settlements, educational institutions, mosques/temples, markets, health facilities, agricultural lands, and cultural properties) were identified and impacts from the implementation works were assessed. Structured observations, photographic documentation, and transect walks were used during the field investigation. In addition, consultations with local communities, local government representatives, and relevant stakeholders were conducted to gather information on livelihood activities, land use, community resources, and potential concerns regarding the proposed interventions. The collected information was then analyzed through a screening process to assess the likelihood and significance of environmental and social impacts during construction and operation phases. The outcome of the survey and screening helps determine the level of environmental and social assessment required and supports the preparation of appropriate mitigation measures and management plans to ensure environmentally sustainable and socially responsible road development in the area.

3.2 Important features/establishments around the PIA

The project influence area of the proposed community road sub-projects includes a variety of environmental, social, economic, and cultural features located along or near the existing road alignments. These features have been identified during field reconnaissance surveys and consultations with local communities to understand the baseline conditions and potential interactions between the proposed road maintenance activities and surrounding establishments. The community roads generally pass through rural settlements and agricultural landscapes within different unions and upazilas, where local infrastructure and community facilities are closely located near the roadside.

From an environmental perspective, the surrounding areas of the assessed community roads are predominantly characterized by agricultural landscapes, low-lying floodplains, scattered vegetation, and rural homestead gardens. Small ponds, irrigation canals, and natural drainage channels are also commonly found along or near the road alignments, which play a significant role in local water management and fish cultivation. These natural and semi-natural environmental features contribute to the ecological balance of the area and therefore require

careful consideration during construction activities to avoid unnecessary disturbance, sedimentation, or blockage of drainage paths.

The social features within the project influence area include rural households, schools, religious institutions such as graveyard, mosque, madrasah and public service facilities located close to the existing road corridors. Residential settlements are often situated along both sides of the roads, indicating that these roads serve as important local access routes for daily community activities. Educational institutions such as primary and secondary schools, madrasa buildings, and playgrounds may also be located within short distances from the road alignment. Religious establishments including mosques and community graveyards are common features in the project area and are often found near village centers along the road network. These social infrastructures are important gathering places for local residents and require careful consideration during construction activities to minimize disruption and maintain safe access.

In terms of economic features, the project influence area contains small local markets, roadside shops, agricultural storage areas, and facilities supporting rural livelihoods. Weekly rural markets (haats), small grocery shops, tea stalls, and agricultural input stores are frequently located at road intersections or village centers. These establishments depend heavily on the accessibility provided by community roads for transportation of goods and services. In addition, agricultural activities such as crop production, livestock rearing, and fish cultivation are key sources of livelihood for the surrounding communities. Improved road conditions are therefore expected to enhance local economic activities by facilitating easier transportation of agricultural products, improving market access, and reducing travel time for rural populations.

The cultural and community heritage features within the project influence area may include local mosques, Eidgah grounds, graveyards, Shaheed Minars and other culturally significant landmarks. These sites hold social and cultural importance for local communities and are often located within close proximity to village roads. Any construction or maintenance work near such cultural features will require special attention to ensure that these sites are protected and that community access remains uninterrupted.

In addition to these environmental, social, economic, and cultural features, the project influence area may also include essential service infrastructure such as tube wells, rural electrification lines, irrigation pumps, drainage outlets, and small water supply systems. These utilities support the daily needs of the local communities and must be carefully protected during construction to prevent service disruptions. Where temporary disturbances are unavoidable, appropriate mitigation measures and coordination with local authorities will be necessary to restore services promptly.

Overall, the surrounding features and establishments within the project influence area reflect the typical rural landscape and socio-economic structure of Rajbari District. The identification and documentation of these features are essential for assessing potential environmental and

social impacts associated with the community road improvement works. Detailed information on these environmental, social, economic, and cultural establishments identified during the field assessment has been systematically presented in **Table 3.1** which provides a location-specific inventory of important features situated along or near the assessed road alignments. This inventory will help guide the implementation of appropriate mitigation measures and ensure that project activities are carried out in an environmentally and socially responsible manner.

Table 3.1: Important features under Project Influence Area

Division: Dhaka	District: Rajbari	Upazila: Rajbari Sadar	
Name of the Road:	Kamalidia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)		
Total Road Length (km)	1.607		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Settlement (Ch. 40m), Graveyard (Ch. 139m), Settlement (Ch. 170m), Settlement (Ch. 220m), Settlement (Ch. 3000m),
		R	Small Canal
300-600	L		Electric Pole (Ch. 357m), Settlement (Ch. 388m), Settlement (Ch. 496m)
		R	Electric Pole (Ch. 357m), Electric Pole (Ch. 357m), Small Canal (Ch. 300m to Ch. 505m)
600-900	L		Electric Pole (Ch. 619m), Pipe Culvert (Ch. 669m), Settlement (Ch. 818m), Settlement (Ch. 840m), Settlement (Ch. 900m)
		R	Pond (Ch. 668), Pond (Ch. 833)
900-1200	L		Bridge (Ch. 940m to Ch. 951m), Settlement (Ch. 1150m)
		R	Settlement (Ch. 1015m), Settlement (Ch. 1180m)
1200-1500	L		Settlement (Ch. 1216m), Farm (Ch. 1210m), Settlement (Ch. 1455m), Electric Pole (Ch. 1254m), Settlement (Ch. 1280m), Mosque (Ch. 1375m)
		R	Shop (Ch. 1216m), Settlement (Ch. 1280m), Graveyard (Ch. 1375m), Shop (Ch. 1443m)
1500-1607	L		Garden (Ch. 1520m), Graveyard (Ch. 1490m), Garden (Ch. 1600m)
		R	Settlement (Ch. 1565m), Settlement (Ch. 1600m)

Division: Dhaka		District: Rajbari		Upazila: Kalukhali	
Name of the Road:		Gopalpur GPS-Raynagor Bazar Road (382774230)			
Total Road Length (km)		1.34			
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)		
00-300	L		Electric Pole (Ch. 244m), Electric Pole (Ch. 290m),		
		R	Electric Pole (Ch. 53m), Electric Pole (Ch. 140m), Electric Pole (Ch. 188m),		
300-600	L		Electric Pole (Ch. 344m), Electric Pole (Ch. 395m)		
		R	Settlement (Ch. 518m)		
600-900	L		Electric Pole (Ch. 780m), Electric Pole (Ch. 817m), Electric Pole (Ch. 900m)		
		R	Settlement (Ch. 818m)		
900-1200	L		Electric Pole (Ch. 1067m), Electric Pole (Ch. 1146m), Electric Pole (Ch. 1183m),		
		R	Eidgah Graveyard (Ch. 1067m)		
1200-1340	L		Electric Pole (Ch. 1234m), Bazar (Ch. 1340m)		
		R	Electric Pole (Ch. 1262m), Bazar (Ch. 1340m)		
Name of the Road:		Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)			
Total Road Length (km)		1.7			
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)		
00-300	L		Electric Pole (Ch. 150m), Electric Pole (Ch. 215m), Electric Pole (Ch. 245m), Electric Pole (Ch. 250m), Electric Pole (Ch. 300m), Settlement 2m away		
		R	Electric Pole (Ch. 150m), Settlement 2m away		
300-600	L		Electric Pole (Ch. 410m), Garden 1m away		
		R	Electric Pole (Ch. 410m), Electric Pole (Ch. 480m)		
600-900	L		Electric Pole (Ch. 795m), Electric Pole (Ch. 1010m), Garden 1m away		
		R	Electric Pole (Ch. 1052m)		
900-1200	L		Settlement 2m away		
		R	Agricultural Land 3m away		

1200-1500	L		Garden 3m away, Settlement 4m away
		R	Agricultural Land 4m away
1500-1700	L		Garden 2m away, Settlement 3m away
		R	Settlement 2m away
Division: Dhaka	District: Rajbari	Upazila: Pangsha	
Name of the Road:	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)		
Total Road Length (km)	1.2		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Agricultural Land
		R	Mazar and Mosque (Ch.00m) 10m away
300-600	L		Mosque (Ch.305m) 5m away
		R	Agricultural Land
600-900	L		Agricultural Land
		R	Pond (Ch.600m) 7m away
900-1200	L		Agricultural Land
		R	Agricultural Land
Name of the Road:	Mourat UP Office-Khea via Biswas Para Road (382735316)		
Total Road Length (km)	0.6		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Mosque, Eidgah, and Graveyard 12-15 m away
		R	Agricultural Land
300-600	L		Bazar (Ch.520m) 5m away
		R	Agricultural Land
Name of the Road:	Bajeapta-Molonche Road (382735018)		
Total Road Length (km)	1.35		

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Agricultural Land
		R	Mourat UP 100m away
300-600	L		GPS 180m away
		R	Bazar 250m away
900-1200	L		Agricultural Land
		R	Mosque 40m away
1200-1350	L		Agricultural Land
		R	Agricultural Land
Division: Dhaka	District: Rajbari		Upazila: Goalanda
Name of the Road:	Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (382294039)		
Total Road Length (km)	2.165		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Pond (Ch.90m) 20m away, Settlement (Ch.280) 10m away
		R	Settlement (Ch.280) 10m away, Small Stream (Ch.290) 40m away
300-600	L		Settlement (Ch.495) 5m away, Agricultural Land (Ch. 380) 20m away
		R	Agricultural Land (Ch. 420) 30m away, Small Stream (Ch.420) 40m away
600-900	L		Settlement (Ch.725) 5m away
		R	Agricultural Land (Ch. 650) 30m away, Small Stream (Ch.720) 40m away
900-1200	L		Poultry Farm (Ch. 1098) 15m away, Banana Trees (Ch. 1194) 10m away
		R	Agricultural Land (Ch. 1194) 30m away
1200-1500	L		Poultry Farm (Ch. 1340) 10m away
		R	Agricultural Land (Ch. 1350) 30m away
1500-1800	L		Poultry Farm (Ch. 1680) 15m away, Settlement (Ch.1517) 5m away
		R	Agricultural Land (Ch. 1550) 30m away
1800-2100	L		Settlement (Ch.1889) 5m away, Poultry Farm (Ch. 1950) 10m away
		R	Agricultural Land (Ch. 1846) 30m away, Ditch (Ch. 2020) 20m away

2100-2165		Settlement (Ch.2120) 5m away
		Agricultural Land (Ch. 2140) 30m away, Shop (Ch. 2165) 5m away
Division: Dhaka	District: Rajbari	Upazila: Baliakandi
Name of the Road:	Dharmotola Hat-Jangle UP Office Road (382074131)	
Total Road Length (km)	1.00	
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L	Pond (Ch.00m) 5m away
	R	Regulator (Ch.218m)
300-600	L	Banana Trees (Ch. 571) 5m away
	R	Pond (Ch.556m) 5m away
600-900	L	Agricultural Land
	R	Bamboo Trees (Ch. 675) 6m away, Pond (Ch.762m)
900-1000	L	Agricultural Land
	R	Temple (Ch.940m) 15m away

(*Data Source: Field Survey, April 2026)

4.0 Environmental and Social Impacts and Proposed Mitigation and Enhancement Measures

4.1 Environmental and Social Impacts for the Implementation of works

The proposed community road improvement in Rajbari District under the RIVER Project aim to rehabilitate and maintain existing rural road infrastructure to improve accessibility, disaster resilience, and socio-economic connectivity within the project influence area. Since the project interventions will mostly take place within the existing right-of-way of community roads, the anticipated environmental and social impacts are expected to be moderate, temporary, and site-specific in nature. However, certain environmental and social risks may arise during the construction and operational phases that require appropriate mitigation and enhancement measures to ensure sustainable project implementation.

Environmental and Social protection and enhancement will be an integral component of the sub-projects. Environmental and Social Mitigation and Enhancement Measures to address potential environmental and community impacts during construction and operation phase. These measures will be implemented in accordance with the Environmental and Social Management Framework (ESMF) of the RIVER Project. Key mitigation measures will include dust suppression through regular water spraying, proper management of construction waste,

control of noise during construction activities, and prevention of water pollution from construction materials or machinery. Social mitigation measures will focus on minimizing disruption to local communities living along the road corridors. Construction activities will be carefully scheduled to avoid blocking community access routes for long periods. Temporary access arrangements will be maintained where construction works interfere with local movement. Safety awareness will be promoted among workers and community members to reduce occupational and public health risks. Local labor will be encouraged where possible, which may contribute to temporary employment opportunities for nearby residents. Site specific Environmental Impacts and Mitigation Measures are described in **Table 4.1**.

Table 4.1: Environmental and Social Impacts and Proposed Mitigation and Enhancement Measures for Community Road Improvement in Rajbari District

Sl. No.	Name of Community Road and Road ID	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
1	Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)	<ul style="list-style-type: none"> Dust and construction emissions affecting dense settlements (Ch. 40–1600 m), farms and gardens. Risk of runoff and blockage of small canals (Ch. 300–505 m) and ponds (Ch. 668, 833 m). Noise disturbance near mosque (Ch. 1375 m) and graveyards (Ch. 139 m, 1375 m, 1490 m) Safety risks at bridge (Ch. 940–951 m) and shop areas (Ch. 1216–1443 m). 	<ul style="list-style-type: none"> Apply water spraying, cover materials, and control vehicle speed to reduce dust. Maintain drainage flow at canals, ponds, and culvert locations. Restrict noisy activities near mosque and graveyard areas. Install signage and barriers near bridge, shops, and settlement clusters.
2	Gopalpur GPS-Raynagor Bazar Road (382774230)	<ul style="list-style-type: none"> Dust pollution affecting roadside bazar (Ch. 1340 m) and nearby settlements (Ch. 518 m, 818 m). Noise and vibration impacts near Eidgah graveyard (Ch. 1067 m). Traffic congestion and pedestrian safety risk near bazar end. Minor disruption due to extensive palisading works. 	<ul style="list-style-type: none"> Control dust through water spraying and covered transport. Avoid high-noise operations near graveyard zone. Provide traffic signage and pedestrian safety measures near bazar. Execute palisading in phases to minimize access disruption.
3	Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)	<ul style="list-style-type: none"> Dust affecting settlements located very close (2–4 m offset) and roadside gardens. Noise disturbance to nearby residents and agricultural zones. 	<ul style="list-style-type: none"> Regular watering and speed control to reduce dust near close settlements. Limit high-noise activities during daytime. Stabilize slope protection areas with proper compaction and drainage.

Sl. No.	Name of Community Road and Road ID	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> • Risk of slope instability and erosion at protection sections (Ch. 200–906 m). • Temporary access disruption to farmland and households. 	<ul style="list-style-type: none"> • Maintain temporary access routes for residents and farmers.
4	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)	<ul style="list-style-type: none"> • Dust impact on agricultural land (Ch. 0–1200 m). • Noise disturbance near mazar and mosque (Ch. 0 m, 305 m). • Risk of pond contamination from runoff (Ch. 600 m). • Community safety concerns from vehicle movement. 	<ul style="list-style-type: none"> • Apply dust suppression measures during earthworks. • Restrict noisy works near religious sites. • Prevent runoff into pond through proper drainage management. • Install warning signs and ensure controlled vehicle movement.
5	Mourat UP Office-Khea via Biswas Para Road (382735316)	<ul style="list-style-type: none"> • Dust affecting mosque, Eidgah, and graveyard (12–15 m offset). • Noise disturbance near religious sites and bazar (Ch. 520 m). • Waste generation potentially impacting nearby land. • Disruption to local businesses and community access. 	<ul style="list-style-type: none"> • Spray water and control transport emissions. • Avoid construction during prayer times near mosque/Eidgah. • Ensure proper waste disposal and site cleanliness. • Maintain access to bazar and inform community in advance.
6	Bajeapta-Molonche Road (382735018)	<ul style="list-style-type: none"> • Dust impact on agricultural land throughout alignment. • Noise disturbance near mosque (40 m away) and nearby institutions. • Access disruption to UP office, GPS, and bazar areas. 	<ul style="list-style-type: none"> • Use water spraying and vehicle control for dust suppression. • Limit noisy activities near sensitive locations. • Maintain access to public facilities during construction.

Sl. No.	Name of Community Road and Road ID	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> Stability concerns at palisading sections. 	<ul style="list-style-type: none"> Ensure proper construction and monitoring of palisading works.
7	Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (382294039)	<ul style="list-style-type: none"> Dust affecting settlements (5–10 m), poultry farms, and agricultural land. Risk of water pollution in streams (Ch. 290, 420, 720 m) and ditch (Ch. 2020 m). Access disruption to farms and settlements. Safety risks due to long corridor with mixed land use. 	<ul style="list-style-type: none"> Regular dust suppression and covered material transport. Protect streams and ditch by maintaining drainage flow. Provide access management near farms and settlements. Install safety signage and control vehicle movement לאורך corridor.
8	Dharmotola Hat-Jangle UP Office Road (382074131)	<ul style="list-style-type: none"> Dust affecting nearby ponds (Ch. 0 m, 556 m, 762 m) and agricultural land. Noise disturbance along rural settlements. Risk of drainage disruption near regulator (Ch. 218 m) and water bodies. Cultural sensitivity near temple (Ch. 940 m). 	<ul style="list-style-type: none"> Implement water spraying and dust control measures. Maintain regulator and pond drainage functionality. Restrict noisy activities near temple area. Provide signage and ensure safe construction near water bodies.

5.0 Environmental and Social Management Plan (ESMP)

5.1 Purpose of the ESMP

The purpose of the Environmental and Social Management Plan (ESMP) for the sub-project “Improvement of Community Infrastructure, Growth Center, others roads & Community Roads” is to provide a structured framework to identify, mitigate, and manage potential environmental and social impacts associated with the design, construction, and operation of the community roads. The ESMP ensures that all project activities comply with national environmental and social regulations as well as the environmental and social standards of the World Bank, promoting sustainable and socially inclusive infrastructure development.

Specifically, the ESMP aims to minimize adverse effects on local communities, settlements, flood shelters, agricultural lands, roadside vegetation, water bodies, and sensitive receptors such as schools and religious institutions. It outlines detailed mitigation measures for construction-related impacts such as dust, noise, traffic disruption, soil erosion, and safety hazards, and includes measures for operational sustainability and long-term maintenance of the roads. Furthermore, the ESMP establishes procedures for stakeholder engagement, grievance redress, occupational health and safety, and monitoring and reporting, ensuring that the project delivers its intended benefits which is enhanced connectivity, safer access to flood shelters, and improved resilience of rural communities while also safeguarding the environment and promoting social well-being.

5.2 Environmental and Social Management Plan (ESMP)

The Environmental and Social Management Plan (ESMP) for the sub-project under the RIVER Project provides a comprehensive framework for the systematic management of potential environmental and social impacts throughout the design, construction, and operational phases of the project. The ESMP is developed to ensure compliance with the national environmental and social regulations of Bangladesh as well as the Environmental and Social Standards (ESS) of the World Bank, thereby promoting sustainable, safe, and socially inclusive implementation of road improvement works.

The ESMP identifies key potential environmental impacts, including dust and air pollution, noise and vibration from construction equipment, soil erosion, sedimentation in nearby water bodies, removal of roadside vegetation, and temporary disruption of natural drainage patterns. It also addresses social impacts such as disturbance to local settlements, access restrictions for pedestrians and vehicles, occupational health and safety risks for workers, and potential conflicts with nearby institutions including schools, mosques, markets, and flood shelters.

To mitigate these impacts, the ESMP proposes detailed measures across multiple categories. Environmental mitigation measures include regular water spraying and dust control, proper storage and disposal of construction materials and waste, restoration of disturbed areas, erosion control and slope protection, protection of existing trees with compensatory planting

where removal is unavoidable, and careful management of drainage systems to prevent waterlogging and contamination. Social mitigation measures include implementing traffic management plans, ensuring safe pedestrian pathways, establishing buffer zones near sensitive receptors such as schools and religious institutions, scheduling construction activities to minimize community disruption, and maintaining clear communication with local residents regarding work schedules and potential impacts.

The ESMP also emphasizes occupational health and safety (OHS), including mandatory use of personal protective equipment (PPE), safety training for all construction personnel, emergency response procedures, and routine site inspections to ensure compliance with safety standards. In addition, it establishes community engagement and Grievance Redress Mechanisms (GRM) to ensure that local stakeholders have avenues to raise concerns, provide feedback, and participate in monitoring the implementation of mitigation measures. The activity wise anticipated environmental and social impacts and corresponding mitigation measures and Site-Specific Impacts and mitigation/management measures have been outlined in **Table 5.1**.

Furthermore, the ESMP outlines a monitoring and reporting framework to track the effectiveness of mitigation measures, identify unforeseen impacts, and facilitate adaptive management. Regular monitoring of air and water quality, noise levels, traffic safety, and compliance with environmental safeguards is recommended, along with periodic reporting to project authorities and relevant regulatory agencies. The plan also includes a schedule for maintenance and operational safeguards post-construction to ensure long-term functionality, safety, and environmental sustainability of the improved road network.

Overall, the ESMP serves as an essential tool to ensure that the sub-project not only enhances community connectivity and access to flood shelters but also minimizes environmental degradation, safeguards community health and safety, and strengthens the resilience of rural populations. By integrating environmental and social considerations into every stage of project implementation, the ESMP ensures that the benefits of improved road infrastructure are maximized while negative impacts are systematically prevented, mitigated, and managed.

Table 5.1: ESMP_ Pre-Construction phase, Construction Phase and Operation Phase

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	<ul style="list-style-type: none"> No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	<ul style="list-style-type: none"> Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. Noise producing vehicles and equipment will be keep in maintenance regularly. Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. Construction materials should be covered properly while carrying in vehicles to the site. 		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. Records of every training must be kept at site. All kinds of Child labour are completely prohibited in every site. Every construction materials storage site will be well fenced by Tin and safety caution tape. 	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>(TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP.</p> <ul style="list-style-type: none"> Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. Local traffic police department should be contacted, if traffic problem becomes more complex. 		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>appropriate authority need to be taken before extraction or setting up bore wells.</p> <ul style="list-style-type: none"> Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> Maintain safety measures during the movement of heavy machinery and equipment. Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	non-hazardous waste during construction.	<ul style="list-style-type: none"> • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. <ul style="list-style-type: none"> • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.</p>	<ul style="list-style-type: none"> • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>lowest vibration tools will be provided that are suitable and can do the works.</p> <ul style="list-style-type: none"> • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>compared with Bangladesh Environmental Quality Standards of DoE.</p> <ul style="list-style-type: none"> • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>(including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<p>to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.</p> <ul style="list-style-type: none"> • The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> • Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic 	Contractor	Environmental Consultant of PIU, Union Parishad Member

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction and Construction Stage	Rigorous Monitoring and Report Preparation and Submission	<p>filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.</p> <ul style="list-style-type: none"> • The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. • Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> • The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. • Widened road, lack of road safety signage or speed-breakers at crossings/strategic 	<ul style="list-style-type: none"> • Road safety issues can be minimized in following ways: • By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. • Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. • All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

5.3 Monitoring of ES Performance

Monitoring of Environmental and Social (ES) performance is a crucial component of the implementation of community road improvement activities under the RIVER Project to ensure that all environmental and social safeguard measures are effectively applied during construction and operation phases. A systematic monitoring framework to be established to assess compliance with the Environmental and Social Management Plan (ESMP), national environmental regulations of Bangladesh, and the safeguard requirements of the World Bank. The monitoring process will involve regular field inspections, supervision visits, and periodic reporting to evaluate the effectiveness of mitigation measures related to dust suppression, noise control, traffic management, occupational health and safety, waste management, protection of nearby water bodies, and conservation of roadside vegetation. Social aspects such as community safety, access to local settlements and institutions, prevention of labor influx issues, grievance redress

mechanisms, and engagement with local stakeholders will also be closely monitored. Monitoring facilitates continuous tracking of compliance, assessment of performance, and early identification of potential environmental and social risks. The monitoring plan clearly specifies the parameters to be observed, along with the frequency, timing, responsible stakeholders, and verification mechanisms for each key environmental and social component. It combines site-level implementation by contractors with supervision from the Project Implementation Unit (PIU) and the Design and Supervision Consultant (D&SC).

Monitoring activities shall adopt both proactive (preventive) approaches such as routine inspections, audits, and stakeholder consultations along with reactive (corrective) measures based on incident reporting, grievance redress mechanisms, and non-compliance findings. The monitoring framework is aligned with national environmental regulations set by the Department of Environment (DoE), the World Bank Environmental and Social Framework (ESF), and the internal Environmental and Social Management Guidelines of the Local Government Engineering Department (LGED).

Table 5.2: Monitoring Framework for achieving overall ES Performance

Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
1.	Air Quality / Dust Emission	Dust generation from earthworks and vehicle movement; effectiveness of water spraying	Weekly during construction	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Site inspection, photographic records
2.	Noise Pollution	Noise disturbance near settlements, schools, and religious institutions	Weekly / During heavy construction	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field observation, community feedback
3.	Construction Waste Management	Segregation, collection, and proper disposal of construction debris	Weekly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Site inspection, waste disposal records
4.	Soil Erosion and Land Degradation	Evidence of soil erosion, slope protection measures, roadside stabilization	Monthly and after heavy rainfall	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field inspection
5.	Drainage and Water Flow	Functionality of roadside drains and culverts; prevention of waterlogging	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field verification

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
6.	Protection of Surface Water	Prevention of sediment, oil, or construction waste entering ponds, canals, or rivers	Bi-weekly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Visual inspection, photo documentation
7.	Storage of Construction Materials	Proper storage of sand, soil, bitumen, and aggregates	Weekly	Contractor (Implementation); PIU/D&SC (verification)	Site inspection
8.	Fuel and Chemical Handling	Safe storage and handling of fuel, lubricants, and chemicals	Weekly	Contractor (Implementation); PIU/D&SC (verification)	Inspection checklist
9.	Occupational Health and Safety	Availability and use of PPE (helmet, gloves, boots, reflective jackets)	Weekly	Contractor (Safety Officer); PIU/D&SC (verification)	Safety checklist, field inspection
10.	Worker Safety Training	Records of safety briefings and toolbox meetings	Monthly	Contractor (Safety Officer); PIU/D&SC (verification)	Training records review
11.	Construction Site Safety	Warning signs, barricades, and safe access control at work sites	Weekly	Contractor (Safety Officer); PIU/D&SC (verification)	Field inspection
12.	Traffic Management	Presence of traffic signs, flagmen, and safe vehicle movement	Weekly	Contractor (Implementation); PIU/D&SC (verification)	Observation, traffic control records
13.	Community Health and Safety	Protection of pedestrians and local residents from construction hazards	Weekly	Contractor (Safety Officer); PIU/D&SC (verification)	Community consultation, site inspection
14.	Access to Local Facilities	Uninterrupted access to homes, markets, schools, mosques, and agricultural land	Weekly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field observation
15.	Protection of Roadside Vegetation	Preservation of existing roadside trees and vegetation	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field verification
16.	Compensatory Tree Plantation	Plantation of trees where roadside trees are removed	Quarterly	Contractor (Implementation); PIU/D&SC (verification)	Plantation records, site inspection

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
17.	Borrow Area and Earth Source Management	Proper sourcing of earth materials without damaging agricultural land	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Field verification
18.	Labor Management	Absence of child labor and forced labor; compliance with labor laws	Monthly	Contractor (Implementation); PIU/D&SC (verification)	Labor records review
19.	Worker Welfare Facilities	Availability of safe drinking water, sanitation, and rest areas for workers	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Site inspection
20.	Gender and Social Inclusion	Participation of local community including women in consultations	Quarterly	Contractor (recording); PIU (review)	Consultation meeting records
21.	Grievance Redress Mechanism (GRM)	Number of grievances received and resolved within specified timeframe	Monthly	Contractor (recording); PIU (review)	GRM register review
22.	Community Consultation	Stakeholder engagement and awareness regarding construction activities	Quarterly	Contractor (recording); PIU (review)	Meeting minutes, attendance records
23.	Cultural and Religious Sites Protection	Protection of nearby mosques, graveyards, temples, or cultural structures	As required	Contractor (Implementation); PIU/D&SC (verification)	Field inspection
24.	Compliance with ESMP	Overall implementation status of mitigation measures described in ESMP	Monthly	Contractor (Implementation); PIU (verification)	Monitoring checklist, compliance report
25.	Environmental and Social Reporting	Preparation and submission of ES monitoring reports	Monthly / Quarterly	Contractor (Implementation); PIU/D&SC (verification)	Monitoring reports

5.4 Capacity Development Measures

Effective management of Environmental, Social, and Gender issues in construction projects requires proactive capacity building for all actors involved including the Implementing Agency, Contractors, and Supervision Consultants. To ensure compliance with environmental and social standards, all project stakeholders must be adequately trained and informed about their responsibilities, mitigation measures, and reporting mechanisms. Capacity-building programs through formal trainings, on-site guidance, tool-box meetings, and awareness sessions help strengthen institutional capacity, improve coordination, and ensure that sustainability and gender equity principles are integrated into project planning, implementation, and monitoring.

The following table outlines the recommended capacity-building measures, target participants, training frequency, and key topics to be covered under an ESG management framework for building and road construction projects.

Table 5.3: Capacity-Building and Training Measures for ES Compliance and Management

Sl. No.	Key Actor / Target Group	Type of Training / Guidance	Objectives	Main Topics to be Covered	Frequency/ Timing	Responsible Entity
1	LGED / Project Management Unit (PIU)	Orientation on Environmental and Social Safeguards	To strengthen understanding of E&S policies, legal requirements, and roles in project implementation.	- National environmental & labor laws- World Bank E&S Framework- Grievance Redress Mechanism (GRM)- ESMP implementation & monitoring- Gender Issues in Infrastructure Development Project.	At project start and annually	Environmental & Social Specialists (PIU)/ D&S Consultant
2	Supervision Consultants	Training on E&S Supervision and Monitoring	To ensure that consultants effectively monitor contractors' compliance with E&S standards.	- ESMP & site-specific E&S checklists- Waste management & pollution control- Labor & working condition compliance- Occupational Health & Safety (OHS)- Gender-sensitive supervision- Incident reporting & corrective actions.	Before mobilization and quarterly refreshers	PIU with support from E&S Experts

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Sl. No.	Key Actor / Target Group	Type of Training / Guidance	Objectives	Main Topics to be Covered	Frequency/ Timing	Responsible Entity
3	Contractor's Management Staff	Induction and Periodic E&S Management Training	To ensure site managers and engineers integrate E&S compliance in daily site operations.	- Contractor's ESMP & Method Statements- Environmental and Social Codes of Practices (ESCoPs)- OHS plan implementation- Labor rights and grievance mechanism- Community health & safety- Gender-based violence (GBV) and SEA/SH prevention	Prior to construction & bi-annually, if deemed required.	Supervision Consultant / PIU E&S Team
4	Contractor's Workforce (Skilled & Unskilled Workers)	Toolbox Meetings/ Awareness Sessions	To build awareness and behavioral change for safe, responsible, and inclusive site practices.	- Worksite safety protocols (PPE use, accident prevention)- Environmental cleanliness & waste segregation- Respectful workplace behavior & anti-harassment- Gender equality & inclusion- HIV/AIDS and communicable disease awareness	Weekly or bi-weekly at site	Contractor's E&S Officer / OHS Supervisor
5	Community Representatives / Local Stakeholders	Information & Awareness Session	To enhance local understanding of project impacts, grievance redress, and gender inclusion measures.	- Project scope & benefits- Potential impacts & mitigation measures- Community safety measures- GRM process- Gender & inclusion awareness	During pre-construction & as needed	PIU & Contractor's Community Engagement Officer
6	Gender Focal Points (PIU, Contractor, Consultant)	Gender and Social Inclusion (GESI) Training	To promote integration of gender considerations into project implementation.	- Gender Action Plan implementation- GBV/SEA/SH mitigation & referral pathways- Inclusive employment & equal pay- Women's participation in decision-making	At project start & mid-term	PIU Gender Specialist / External Expert

5.5 Tree Plantation Plan

The Government of Bangladesh has long promoted roadside plantation to improve environmental quality, restore ecological balance, and support rural livelihoods through timber, fuel, and other biological resources. Trees absorb carbon dioxide and release oxygen, reduce dust pollution, and provide habitat and economic value. To compensate for project-related tree loss, the Forest Department requires plantation at a 3:1 ratio (three trees planted for every tree felled).

Plantation will be carried out along roadside slopes, embankments, and other available spaces within and beyond the right-of-way, including suitable Upazila-owned land. Native fruit-bearing, flowering, medicinal, and ornamental species will be prioritized, selected in consultation with the Forest Department based on lost vegetation. Saplings (minimum 1 m height) will be protected and maintained through the defect liability period.

The initiative aims to restore biodiversity, enhance greenery, prevent erosion, improve aesthetics, and ensure long-term environmental sustainability while supporting local employment.

According to the prevailing practice in Bangladesh, the FD has recommended to plant minimum three trees for each tree cut for the implementation of the proposed project.

Under the proposed tree plantation plan:

- Timber tree species will cover 40% of the total area,
- Fruit tree species will cover 30% of the total area,
- Medicinal tree species will cover 20% of the total area and
- Fuel tree species will cover the rest 10% of the total area.

Apart from roadsides, other places for planting trees shall be proposed at mosques, temples, madrasas, schools, colleges etc. Spacing between each plant shall be calculated according to the available space within the ROW. The tree plantation shall follow the following SOPs provided in **Table 5.4**.

Table 5.4: Standard of Procedures (SOPs) for Tree Plantation

Plant Selection	Height and Spacing	Planting and Fencing Details	Maintenance
<ul style="list-style-type: none"> • Most types of trees average height should be more than 1 meter which equals more than 3ft. at the time of planting; • As all tree heights are not same, at the time of some specific tree plantation 		Preparation of plantation pits will involve excavation of pits measuring 600 mm × 600 mm × 450 mm. The excavated soil will be mixed with loamy silty soil and cow dung to create suitable planting media. Saplings will then be planted and securely supported using 1800 mm	<ul style="list-style-type: none"> • Watering: needs two times in a day; Prefer especially rainy season for tree plantation if it is in other season then proper watering is needed;

Plant Selection	Height and Spacing	Planting and Fencing Details	Maintenance
<p>Upazila and Contractor should communicate with Consultant Team;</p> <ul style="list-style-type: none"> Tree plantation spacing should be 3m c/c from one tree to another tree 	<p>long Borrak bamboo stakes, tied with jute rope, including the provision of necessary tools and planting materials, all in accordance with the instructions of the E-I-C. In addition, protective tree guards will be provided using high-quality Muli bamboo, measuring approximately 1200 mm in height and 500 mm in diameter. The guards will be constructed using 2 mm thick bamboo splits arranged in a grid pattern with 75 mm × 75 mm square openings, reinforced with additional bamboo splits on both sides and secured with G.I. wire. Each tree guard will be firmly supported by three Borrak bamboo posts of 1800 mm length (63 mm diameter), with at least 600 mm embedded into the ground through proper excavation and backfilling. All works, including supply, preparation, installation, and finishing, will be completed as per the direction of the E-I-C.</p>	<ul style="list-style-type: none"> Needs weed out grass and other unnecessary vegetation Need regular monitoring by Upazila 	

5.6 Cost of Environmental and Social Enhancement Works in BOQ

The estimated cost of environmental and social enhancement works has been incorporated into the Bill of Quantities (BOQ) for the sub-project covering eight identified community roads across Rajbari Sadar, Kalukhali, Goalanda, Baliakandi and Pangsha Upazilas. The detailed road wise estimate, with tentative cost for implementing the ESMP, is given in **Annexure 1**. These costs are specifically allocated to implement mitigation measures and safeguard activities that address environmental and social risks during construction and operation phases. Key components included in the BOQ for ES enhancement works comprise dust suppression through regular water spraying,

The BOQ also includes provisions for occupational health and safety (OHS) equipment for workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for both male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. By integrating

these costs into the project BOQ, the sub-project ensures that environmental and social safeguards are systematically implemented without compromising project timelines or quality, while promoting sustainable, safe, and resilient road infrastructure that benefits local communities and maintains safe access to flood shelters.

6.0 PUBLIC CONSULTATION MEETING

6.1 Stakeholder Engagement

Stakeholder engagement is a critical component for ensuring that the perspectives, concerns, and suggestions of affected communities and relevant stakeholders are incorporated into project planning and implementation, a comprehensive series of stakeholder engagement and site-specific consultation meetings were conducted for all proposed shelter sites. These meetings were held in March 28, 2026 to April 06, 2026. Public consultation meetings were conducted in the alongside covering of the eight (8) identified community roads. Refer to **Annexure 2** for details of the attendance of the meeting. Participants included local residents, community leaders, school authorities, representatives of religious institutions, flood shelter managers, and local government officials. During these consultations, stakeholders were informed about the objectives, scope, and expected benefits of the road improvement works, including enhanced connectivity to flood shelters, improved mobility, and disaster preparedness. Discussions focused on potential environmental and social impacts such as temporary disruption to access, noise, dust, removal of roadside vegetation, and traffic safety during construction. Stakeholders were encouraged to provide feedback on site-specific concerns and suggest measures to minimize negative impacts.

Key outcomes from these consultations included requests for proper traffic management near schools and marketplaces, adequate drainage improvements to prevent waterlogging, compensation or replanting for affected trees, and timely communication regarding construction schedules. The feedback gathered has been integrated into the Environmental and Social Management Plan (ESMP) to ensure that mitigation measures are responsive to local needs, enhance community safety, and promote transparency and participation throughout the project cycle.

6.2 Methodology

Public consultation meetings were designed to ensure inclusive, transparent, and participatory engagement with local stakeholders. Site-specific consultation meetings were systematically conducted at all proposed flood shelter locations across Rajbari District to ensure inclusive participation and transparent stakeholder engagement in accordance with the Environmental and Social Framework (ESF) prescribed ES Assessment checklist and the project's safeguard requirements. Prior to the consultations, stakeholders that include local residents, community leaders, school authorities, religious institution representatives, and local government officials, bazar management committee were informed about the purpose, scope, and potential impacts of the proposed road improvements. Meetings were conducted

at accessible community locations, such as schools, union parishad offices, and community centers, to maximize participation. During the sessions, project plans and environmental and social considerations were presented using simple visual aids and local language explanations to facilitate understanding. Stakeholders were encouraged to express concerns, provide suggestions, and prioritize site-specific issues, particularly regarding traffic safety, drainage, tree protection, access to flood shelters, and construction-related disturbances. The feedback collected through these consultations was systematically documented, analyzed, and incorporated into the Environmental and Social Management Plan (ESMP) and project design to ensure that mitigation measures are practical, locally relevant, and responsive to the needs and expectations of the affected communities.

This consultative process played a critical role in identifying location-specific issues, such as access constraints, local waterlogging, land use sensitivity, or community preferences, and helped enhance project acceptance and ownership at the grassroots level. Refer to **Figure 6.1** for selected photographs of the participatory public consultation held at the sub-project sites and **Table 6.1** refers to Consultation meeting participants' summary for the sub-project.

Table 6.1: Consultation Meetings Summary

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
1.	Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)	06.04.2026	Mohammadpur Model Para	The local individuals, elites, chairman and/or member of respective Union Parishad, farmer, businessmen, religious leaders, women, fishermen etc.	15
2.	Gopalpur GPS-Raynagor Bazar Road (382774230)	30.03.2026	Gopalpur, Kalikapur		10
3.	Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)	31.03.2026	Kathaltola More		11
4.	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)	30.03.2026	Dhulihat Sheikh Bari Mosque		07
5.	Mourat UP Office-Khea via Biswas Para Road (382735316)	31.03.2026	Pepulbaria		07
6.	Bajeapta-Molonche Road (382735018)	28.03.2026	Mourat UP Office		07
7.	Doulatdia NHW at Nuru Mondalpara-	31.03.2026	Canalghat Shop of Ershad, Daulatdia		10

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
	Purbo Tenapocha UZR Road (382294039)				
8.	Dharmotola Hat-Jangle UP Office Road (382074131)	30.03.2026	Bonnatoli		08



Figure 6. 1: Public Consultation Through FGD's And KII Alongside the Proposed Road.

6.3 Issues and Recommendations raised by the Participants in regards to component interventions

During the public consultation meetings conducted in the project influence areas of the proposed community road sub-projects in Rajbari District, local community members, representatives of local government institutions, teachers, farmers, and other stakeholders actively shared their views regarding the planned interventions under the project. Participants identified several key issues affecting the project area, particularly poor road conditions during the rainy season, inadequate drainage systems leading to waterlogging, damaged culverts obstructing natural water flow, and erosion of road embankments in vulnerable sections. In addition, community members expressed concerns regarding potential temporary disturbances during the construction phase, including dust generation, noise pollution, traffic congestion, and safety risks for school children and pedestrians.

In response, participants proposed a number of practical mitigation measures. These included the proper rehabilitation and installation of culverts and cross-drainage structures to ensure uninterrupted natural water flow and prevent water stagnation. They also emphasized the

need for strengthening road embankments and constructing protective structures such as retaining walls or palisading in erosion-prone areas to enhance structural stability. Furthermore, participants recommended the implementation of effective dust and noise control measures during construction activities, along with the installation of appropriate road safety features, including warning signs, speed breakers near educational institutions, and improved visibility at road intersections. Ensuring uninterrupted access for local residents and agricultural transport during construction was also highlighted as a priority. Additionally, community members suggested prioritizing local labor employment to enhance socio-economic benefits. Overall, the consultation outcomes underscore the importance of integrating community-driven recommendations into project planning and implementation to minimize environmental and social impacts while improving local infrastructure resilience and safety. The issues and recommendations collected during these consultations have been summarized and documented in **Table 6.2**, which will guide the integration of appropriate environmental, social, and safety mitigation measures during project implementation.

Table 6.2: Issues and Recommendations raised by the Participants

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
1.	Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)	06.04.2026 and in Mohammadpur Model Para	<ul style="list-style-type: none"> • Dust pollution during construction may affect nearby houses, schools, and markets. • Noise and disturbance may occur near schools, mosques, and residential areas. • Traffic congestion and safety risks may occur during construction activities. • Concerns about removal of roadside trees during road widening. • Temporary disruption to access of local houses, shops, and agricultural lands during construction. • Need to ensure safe and quick access to flood shelters during emergencies. • Risk of erosion and damage to road shoulders during heavy rainfall. 	<ul style="list-style-type: none"> • Regular water spraying and proper management of construction materials to minimize dust generation. • Restrict heavy construction activities during sensitive hours and maintain noise control measures. • Prepare and implement a traffic management plan including warning signs, barriers, and designated detours. • Avoid unnecessary tree cutting; where unavoidable, implement compensatory plantation programs. • Maintain temporary access routes and inform the community in advance about construction schedules. • Design road improvements to ensure uninterrupted connectivity to nearby flood shelters. • Strengthen road shoulders and provide slope protection and erosion control measures. • Install road safety signs, speed control measures, and pedestrian-friendly features near schools and settlements.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
				<ul style="list-style-type: none"> • Ensure proper drainage design and avoid blockage of irrigation channels during construction.
2.	Gopalpur GPS-Raynagor Bazar Road (382774230)	30.03.2026 and in Gopalpur, Kalikapur	<ul style="list-style-type: none"> • Waterlogging occurs in some low-lying sections of the road. • Road width is narrow in certain segments which creates difficulty for two-way traffic. • Dust pollution during construction may affect nearby households and shops. • Farmers depend on roadside access to transport agricultural products to local markets. • Some households are located very close to the road alignment. • Flood shelter accessibility is important during flood emergencies. • Community members requested installation of safety signage. 	<ul style="list-style-type: none"> • The road surface should be improved with proper pavement and compaction to ensure all-weather accessibility. • Adequate roadside drainage and culverts should be constructed to facilitate smooth water flow and prevent waterlogging. • Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. • Regular water spraying and proper construction management should be implemented to minimize dust generation. • Traffic management measures, warning signs, and temporary safety barriers should be installed during construction. • Construction activities should be planned to avoid blocking access to agricultural lands and transport routes.
3.	Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)	31.03.2026 and in Moukuri More	<ul style="list-style-type: none"> • Road width is narrow in certain segments which creates difficulty for two-way traffic. 	<ul style="list-style-type: none"> • Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> • Dust pollution during construction may affect nearby households and shops. • Movement of construction vehicles may create safety risks for pedestrians and school children. • Roadside trees provide shade and environmental benefits for the community. • Farmers depend on roadside access to transport agricultural products to local markets. • Some households are located very close to the road alignment. • Improper disposal of construction waste may affect nearby agricultural land. • Community members requested installation of safety signage. 	<ul style="list-style-type: none"> • Regular water spraying and proper construction management should be implemented to minimize dust generation. • Traffic management measures, warning signs, and temporary safety barriers should be installed during construction. • Contractors should maintain safe working distances and ensure minimal disturbance to local residents. • The road improvement should prioritize ensuring safe and quick access to the nearby flood shelter. • Construction work should be scheduled during daytime and equipment should be properly maintained to reduce noise. • Waste materials should be properly managed and disposed of at designated locations. • Road safety signs and markings should be installed near settlements, intersections, and flood shelters.
4.	Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)	30.03.2026 and in Doubari More	<ul style="list-style-type: none"> • Waterlogging occurs in several low-lying sections of the road during monsoon. 	<ul style="list-style-type: none"> • Adequate side drains and cross-drainage structures (culverts) should be constructed or improved to ensure proper drainage. • Contractors should implement traffic safety measures, including warning signage, speed

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> • Movement of school students and pedestrians may be at risk during construction activities. • Dust generation during construction may affect nearby houses and roadside shops. • Noise from construction machinery may disturb nearby residents and institutions. • Some roadside trees may need to be removed during road widening. • Temporary disruption to local transportation and market access may occur during construction. 	<p>control, and safe pedestrian passage near schools and settlements.</p> <ul style="list-style-type: none"> • A temporary traffic management plan should be prepared to ensure continued movement of local transport and access to markets. • Installation of road safety signage, speed breakers, and road markings near market areas is recommended.
5.	Mourat UP Office-Khea via Biswas Para Road (382735316)	29.03.2026 and in Jhaugram	<ul style="list-style-type: none"> • Road surface is heavily deteriorated and becomes impassable during the rainy season due to waterlogging. • Dust and noise from construction activities may affect nearby households, shops, and school children. • Temporary disruption to public access and local transportation during construction. 	<ul style="list-style-type: none"> • Road pavement should be improved with proper base preparation and surface treatment to ensure all-weather usability. • Adequate side drains and culverts should be constructed to prevent waterlogging and protect adjacent farmlands. • Water spraying should be carried out regularly during construction to control dust; noise-generating activities should be limited to daytime hours. • A temporary traffic management plan should be implemented to maintain access

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> • Risk of damage to irrigation channels and agricultural lands adjacent to the road. • Community members expressed concern about road safety near the community clinic. 	<ul style="list-style-type: none"> to local markets and residences during construction. • Road safety signs, speed breakers, and markings should be installed near community clinic area and pedestrian crossings.
6.	Bajeapta-Molonche Road (382735018)	29.03.2026 and in Shoruperchawk Bazar	<ul style="list-style-type: none"> • Road surface is damaged and becomes muddy and unusable during the monsoon season. • Low-lying sections of the road are prone to flooding and prolonged waterlogging. • Proximity of the road to the Eidgha requires special attention to safety and access during religious gatherings. • Dust and noise from construction may disturb nearby residents and the religious institution. • Pedestrian movement, particularly of women, elderly, and children, may be at risk during construction. • Some roadside trees may require removal during road improvement works. 	<ul style="list-style-type: none"> • Road surface should be raised at low-lying sections and properly paved to prevent flooding and ensure all-weather access. • Adequate cross-drainage structures and side drains should be installed to manage stormwater effectively. • Construction scheduling should take into account religious gathering times at the Eidgha to avoid disruption and safety hazards. • Traffic safety measures including warning signs, barriers, and designated pedestrian pathways should be maintained throughout construction. • Where tree removal is unavoidable, compensatory plantation should be carried out along the roadside. • Community awareness programs should be conducted to inform residents about construction timelines and safety protocols.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
7.	Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (382294039)	31.03.2026 and in Mridadanga (Shop of Abul)	<ul style="list-style-type: none"> • Road surface is poorly maintained and becomes difficult to traverse during the rainy season due to mud and waterlogging. • The road serves as a key access route to the Eidgha and local market, requiring uninterrupted access during religious events and market days. • Movement of heavy construction vehicles poses safety risks to pedestrians and local residents. • Improper disposal of construction waste may affect adjacent agricultural land and water bodies. • Dust generation during dry construction phases may affect nearby shops and households. • Concerns raised about the potential impact of road widening on boundary walls and structures close to the road alignment. 	<ul style="list-style-type: none"> • Road pavement and base should be strengthened to ensure durability and all-weather accessibility. • Construction activities near the Eidgha should be carefully scheduled to avoid disruption during Friday prayers and religious occasions. • Proper waste disposal sites should be designated, and contractors should be required to manage construction debris responsibly. • Traffic management measures including temporary barriers, warning signs, and speed controls should be enforced throughout the construction period. • Community members and shopkeepers should be informed in advance of construction schedules to allow appropriate preparation. • Road safety signage and pedestrian-friendly features should be installed near the Eidgha and market areas upon project completion.
8.	Dharmotola Hat-Jangle UP Office Road (382074131)	30.03.2026 and in Bahadurpur UP Office	<ul style="list-style-type: none"> • Road condition is poor and several sections become submerged during flood events, disrupting connectivity between the two GPS flood shelters. 	<ul style="list-style-type: none"> • Road elevation should be raised at vulnerable flood-prone sections to ensure connectivity is maintained during flood

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> • The road serves as a critical evacuation route during flood emergencies, requiring reliable all-weather access. • Some sections of the road have insufficient elevation and are vulnerable to erosion during heavy rainfall and river flooding. • Dust and noise from construction activities may affect nearby households and agricultural areas. • Temporary blockage of access routes during construction may hamper mobility of local residents and farmers. • Community members expressed concern about the safety of children and pedestrians during construction near the GPS school. 	<ul style="list-style-type: none"> emergencies and for safe access to both GPS flood shelters. • Adequate embankment protection, slope stabilization, and erosion control measures should be incorporated into the road design. • Cross-drainage structures and side drains should be constructed or upgraded to facilitate effective drainage and prevent road damage. • Construction activities near the GPS school should be restricted during school hours and appropriate safety barriers should be maintained at all times. • A temporary traffic and access management plan should be prepared and communicated to the community prior to commencement of works. • Road safety signage, reflective barriers and speed control measures should be installed, particularly near the GPS schools and flood shelter access points. • Local community members and workers should be prioritized for employment during construction as far as practicable.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the environmental and social assessment conducted for Community Roads at Rajbari District under the RIVER Project, it can be concluded that the proposed improvement of eight (8) community roads across Rajbari Sadar, Kalukhali, Baliakandi and Pangsha Upazila in Rajbari District is environmentally and socially feasible, provided that the proposed mitigation and management measures are properly implemented. The improvement of this community roads will significantly enhance rural connectivity, improve year-round accessibility, and ensure safe and reliable access to nearby flood shelters, which is crucial during flood emergencies and other natural disasters. The project is expected to bring considerable socio-economic benefits to the local population by facilitating access to markets, schools, health facilities, and other essential services, while also supporting the transportation of agricultural products and strengthening local economic activities.

The assessment indicates that most of the proposed road improvement works will be carried out within the existing Right of Way (ROW), which minimizes the need for land acquisition and significantly reduces the risk of physical displacement or resettlement. However, some minor environmental and social impacts may arise during the construction phase, including temporary dust and noise pollution, disruption of local traffic and pedestrian movement, temporary obstruction of drainage channels, and short-term access limitations for nearby settlements, agricultural lands, and community institutions. In addition, occupational health and safety risks for construction workers and safety concerns for pedestrians, particularly near schools, markets, and flood shelters, may occur if adequate safety measures are not implemented.

To address these potential impacts, the Environmental and Social Management Plan (ESMP) has been prepared as an integral component of this report. The ESMP outlines practical mitigation and enhancement measures such as dust suppression through regular water spraying, proper management and disposal of construction waste, installation of adequate drainage structures to prevent waterlogging, slope stabilization to reduce erosion, and compensatory tree plantation for any unavoidable vegetation removal. Traffic management measures, including warning signs, barricades, and speed control near sensitive locations, should be implemented to ensure public safety during construction.

In addition, strict compliance with occupational health and safety (OHS) standards should be ensured at all construction sites. Contractors should provide appropriate personal protective equipment (PPE), conduct regular safety training for workers, and implement emergency response procedures to minimize workplace accidents. Environmental monitoring should also be conducted periodically to ensure that construction activities remain within acceptable environmental limits for air quality, noise levels, and waste management.

Stakeholder consultations conducted in the project areas indicate strong community support for the proposed road improvements, particularly due to the anticipated benefits in terms of

improved mobility, enhanced disaster preparedness, and better access to essential services. Community members emphasized the importance of proper drainage systems, road safety measures, protection of roadside vegetation, and regular maintenance after completion of the works. These concerns have been incorporated into the ESMP to ensure that the project remains responsive to the needs and expectations of local stakeholders.

In conclusion, the improvement of community infrastructure connecting roads under the RIVER Project in Rajbari District represents a positive intervention that will contribute to sustainable rural infrastructure development and increased resilience of flood-prone communities. With the effective implementation of the recommended environmental and social mitigation measures, continuous monitoring, and active stakeholder engagement, the project will minimize potential adverse impacts while maximizing long-term benefits for the communities in Rajbari Sadar, Kalukhali, Baliakandi and Pangsha Upazilas. It is therefore recommended that the project proceed with implementation while ensuring strict adherence to the Environmental and Social Management Plan (ESMP) and relevant regulatory and institutional requirements.

ANNEXURE 1:
ROAD WISE ENVIRONMENTAL AND SOCIAL FINDINGS UNDER RAJBARI
DISTRICT

ANNEXURE 1: ROAD WISE ENVIRONMENTAL AND SOCIAL FINDINGS UNDER RAJBARI DISTRICT

Name of Sub-Project: Improvement of Community Road for **Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road, ID: 382764087**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Rajbari Sadar

Union: Dadshi

Name of Community/Local Area Kamaldia, Boro Doari, Mohammadpur

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road is proposed for improvement over a length of 1.607 km to strengthen local connectivity through Village A. At present, the road has mixed surface conditions, with HBB pavement at Ch. 0+000–0+220 and Ch. 0+680–0+800, a BFS section at Ch. 0+610–0+680, and earthen sections over the remaining stretches from Ch. 0+220–0+610 and Ch. 0+800–1+607. This fragmented pavement condition creates inconsistent riding quality and limits reliable movement during wet periods. The road also contains a 1.0 m × 3.70 m pipe culvert at Ch. 0+365–0+366 and a 12.0 m × 3.70 m bridge at Ch. 0+944–0+956, which are important for maintaining drainage and crossing continuity. The entire road from Ch. 0+000 to 1+607 will be upgraded with Bituminous Carpeting, while slope protection will be provided for 59 m on the left side and 575 m on the right side. As no safeguard feature is currently available at the site, the proposed pavement and protection work will provide a more stable, continuous, and climate-resilient rural road corridor.

Estimated footprint / land area for this sub-project is 4,821 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1607m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Settlement (Ch. 40m), Graveyard (Ch. 139m), Settlement (Ch. 170m), Settlement (Ch. 220m), Settlement (Ch. 3000m),
		R	Small Canal
300-600	L		Electric Pole (Ch. 357m), Settlement (Ch. 388m), Settlement (Ch. 496m)

Chainage	(Left/Right)		Environmental and Social Impact
		R	Electric Pole (Ch. 357m), Electric Pole (Ch. 357m), Small Canal (Ch. 300m to Ch. 505m)
600-900	L		Electric Pole (Ch. 619m), Pipe Culvert (Ch. 669m), Settlement (Ch. 818m), Settlement (Ch. 840m), Settlement (Ch. 900m)
		R	Pond (Ch. 668), Pond (Ch. 833)
900-1200	L		Bridge (Ch. 940m to Ch. 951m), Settlement (Ch. 1150m)
		R	Settlement (Ch. 1015m), Settlement (Ch. 1180m)
1200-1500	L		Settlement (Ch. 1216m), Farm (Ch. 1210m), Settlement (Ch. 1455m), Electric Pole (Ch. 1254m), Settlement (Ch. 1280m), Mosque (Ch. 1375m)
		R	Shop (Ch. 1216m), Settlement (Ch. 1280m), Graveyard (Ch. 1375m), Shop (Ch. 1443m)



Starting Point of Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project (Road construction) is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree

etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

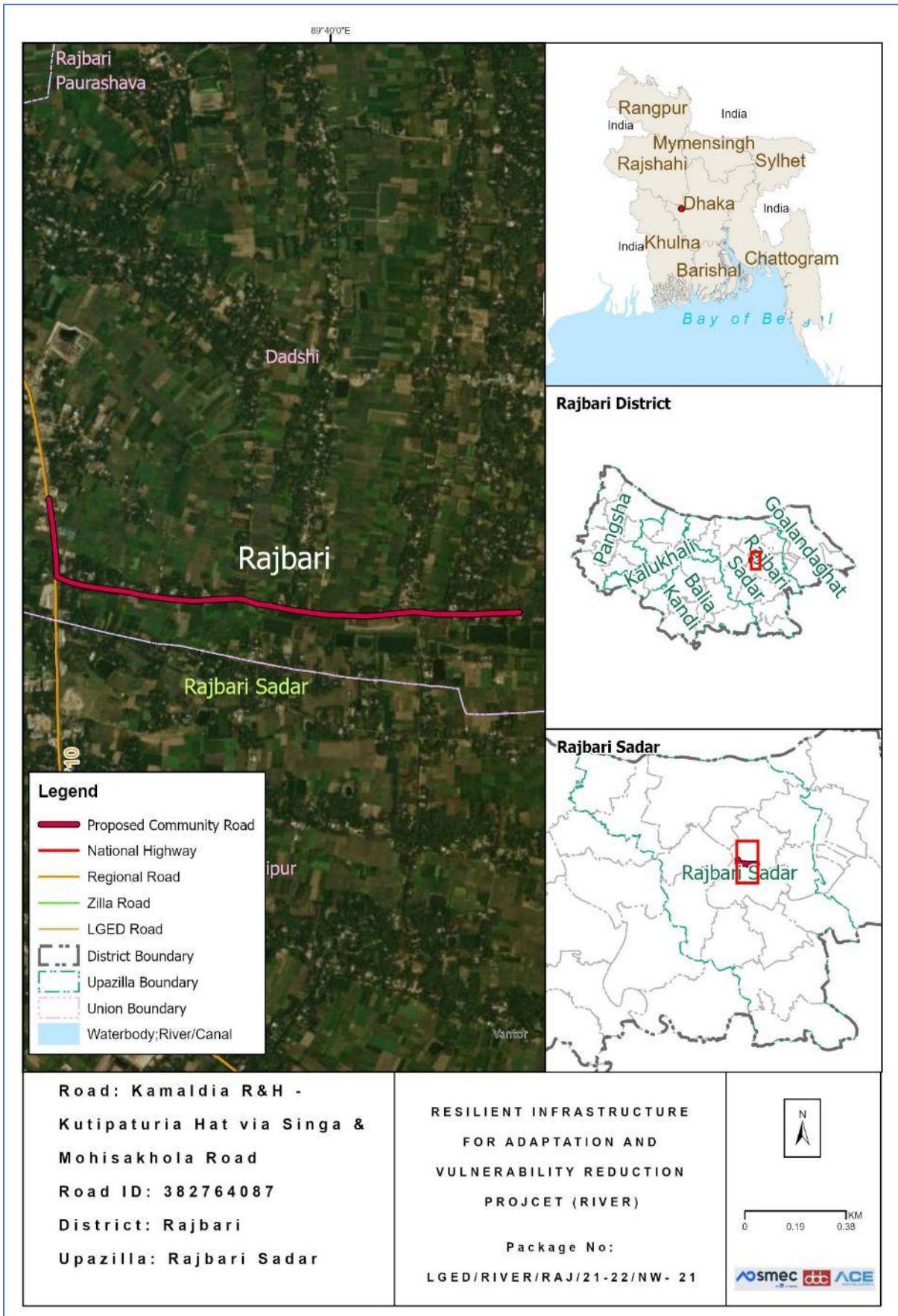
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

No historical or archaeological sites were found within the influence area of the Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road. The road has a complex rural setting where settlement, drainage, religious, burial, commercial and vegetation features appear at different points along the 1.607 km alignment. The beginning of the road is closely associated with household areas on the left side at Ch. 40 m, Ch. 170 m, Ch. 220 m and Ch. 300 m, while a small canal runs along the right side. This canal influence continues into the next section, particularly from Ch. 300 m to Ch. 505 m, where construction activities will need to keep water movement unobstructed. Around the middle portion, the road becomes more drainage-sensitive due to the pipe culvert at Ch. 669 m, ponds on the right at Ch. 668 m and Ch. 833 m, and the bridge between Ch. 940 m and Ch. 951 m. Social sensitivity increases again in the later section, where a farm and shops appear near Ch. 1+216, a mosque is located at Ch. 1+375 on the left, and graveyards are present near Ch. 1+375 on the right and Ch. 1+490 on the left. Gardens and settlements are also located near the ending chainages. Because this road contains several sensitive points rather than one single sensitive zone, construction should be carefully controlled near the canal, culvert, bridge, ponds, mosque, graveyards, shops, gardens and settlement clusters.



Location Map of the Proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The Sub-Project is categorized as a village road. Based on field survey, this sub-project involves a Herringbone Brick Bond (HBB) and earthen road. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00m to Ch. 1607m.

Sub-project Location:

Important Features	
ID	382764087
District	Rajbari
Upazila	Rajbari Sadar
Union	Dadshi
Total Chainage	1607m
Proposed Chainage	1607m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.731084 N, 89.655987 E
Road Ending Point Coordinates	23.727738 N, 89.672962 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approximately)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Kamaldia, Boro Doari, and Mohammadpur.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

Sensitive environmental, cultural, and religious features within 1 kilometer of the sub-project corridor include several community and environmental elements located along both sides of the alignment. The beginning of the road is closely associated with household areas on the left side at Ch. 40 m, Ch. 170 m, Ch. 220 m and Ch. 300 m, while a small canal runs along the right side. This canal influence continues into the next section, particularly from Ch. 300 m to Ch. 505 m, where construction activities will need to keep water movement unobstructed. Around the middle portion, the road becomes more drainage-sensitive due to the pipe culvert at Ch. 669 m, ponds on the right at Ch. 668 m and Ch. 833 m, and the bridge between Ch. 940 m and Ch. 951 m. Social sensitivity increases again in the later section, where a farm and shops appear near Ch. 1+216, a mosque is located at Ch. 1+375 on the left, and graveyards are present near Ch. 1+375 on the right and Ch. 1+490 on the left. Gardens and settlements are also located near the ending chainages. Because this road contains several sensitive points rather than one single sensitive zone, construction should be carefully controlled near the canal, culvert, bridge, ponds, mosque, graveyards, shops, gardens and settlement clusters.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, auto rickshaw, tempo, trolley etc. over the road surface which causes air pollution.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise level also very low in the site area. Noise is originating from the commotion of locals. During construction period a rise in noise pollution may occur due to the transportation of equipment.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural

pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The Paved Road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Medium. A small canal is present on the right side up to about Ch. 505 m, with ponds at Ch. 668 m and Ch. 833 m. A pipe culvert at Ch. 669 m and bridge at Ch. 940–951 m also indicate active drainage points. Construction may affect flow if spoil or materials block these areas.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Kamaldia R&H - Kutipaturia Hat via Singa & Mohisakhola Road (382764087)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/local people, generating dust and noise)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Stack materials will be covered with tarpaulins/polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. After completing the development, the site shall be restored as before. This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. Construction materials should be covered properly while carrying in vehicles to the site. 		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. Records of every training must be kept at site. All kinds of Child labour are completely prohibited in every site. Every construction materials storage site will be well fenced by Tin and safety caution tape. 	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Local traffic police department should be contacted, if traffic problem becomes more complex. 		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. Local community must be consulted before any construction works start. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> Maintain safety measures during the movement of heavy machinery and equipment. Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 		
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Refueling areas and other fluid transfer areas will be imperviously paved. Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: <ul style="list-style-type: none"> The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical 	<ul style="list-style-type: none"> All construction equipment will be properly inspected timely. The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. Proper Signpost at any slippery areas will be ensured in construction site. 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>shocks.</p> <ul style="list-style-type: none"> Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis. 	<ul style="list-style-type: none"> Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>stroke, and dehydration. Written records of this awareness training shall be kept on site.</p> <ul style="list-style-type: none"> • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. All precautions to store chemicals/oil/fuel properly so that no chance of spill. Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> Pollution from waste materials. Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. The contractor must arrange the cancellation of all temporary services. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,928.4. Sq.m	@38.15 Tk. Per sqm	73,568.46
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1607m	@ 2.56 BDT	4,113.92
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with</p>	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields,</p>	LS	LS @ Tk 30,000	30,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	ear muffs etc. (v) suitable eye protection goggles			
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35,000
Total amount for this Road				268,328.1



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Gopalpur GPS-Raynagar Bazar Road, ID: 382774230**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Kalukhali

Union: Kalikapur

Name of Community/Local Area: Gopalpur, Raynagar Bazar

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Gopalpur GPS-Raynagar Bazar Road is a 1.34 km long village road where the full existing surface from Ch. 0+000 to 1+340 consists of damaged HBB pavement. Because the entire carriageway is already paved but deteriorated, the main concern is not missing pavement continuity but poor surface condition, weak road edges, and reduced travel comfort. The road will therefore be upgraded with Bituminous Carpeting throughout its full length from Ch. 0+000 to 1+340. A notable feature of this sub-project is the large number of short palisading sections proposed on both sides of the road, indicating repeated localized edge instability along the alignment. These include protection works near Ch. 0+000–0+006, 0+080–0+100, 0+140–0+150, 0+216–0+229, 0+266–0+286, 0+294–0+305, 0+312–0+340, 0+342–0+357, 0+400–0+414 and 0+763–0+773 on the right side, and Ch. 0+016–0+048, 0+133–0+150, 0+166–0+185, 0+220–0+232, 0+244–0+280 and 0+798–0+817 on the left side. No existing structures or safeguard features have been recorded. The proposed works will convert the damaged HBB road into a stronger market and school access route, with targeted roadside protection at the most vulnerable chainages.

Estimated footprint / land area for this sub-project is 4,020 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1340m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Electric Pole (Ch. 244m), Electric Pole (Ch. 290m),
		R	Electric Pole (Ch. 53m), Electric Pole (Ch. 140m), Electric Pole (Ch. 188m),
300-600	L		Electric Pole (Ch. 344m), Electric Pole (Ch. 395m)
		R	Settlement (Ch. 518m)
600-900	L		Electric Pole (Ch. 780m), Electric Pole (Ch. 817m), Electric Pole (Ch. 900m)
		R	Settlement (Ch. 818m)

Chainage	(Left/Right)		Environmental and Social Impact
900-1200	L		Electric Pole (Ch. 1067m), Electric Pole (Ch. 1146m), Electric Pole (Ch. 1183m),
		R	Eidgah Graveyard (Ch. 1067m)
1200-1340	L		Electric Pole (Ch. 1234m), Bazar (Ch. 1340m)
		R	Electric Pole (Ch. 1262m), Bazar (Ch. 1340m)



Starting Point of Gopalpur GPS-Raynagor Bazar Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like Mehogoni, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been

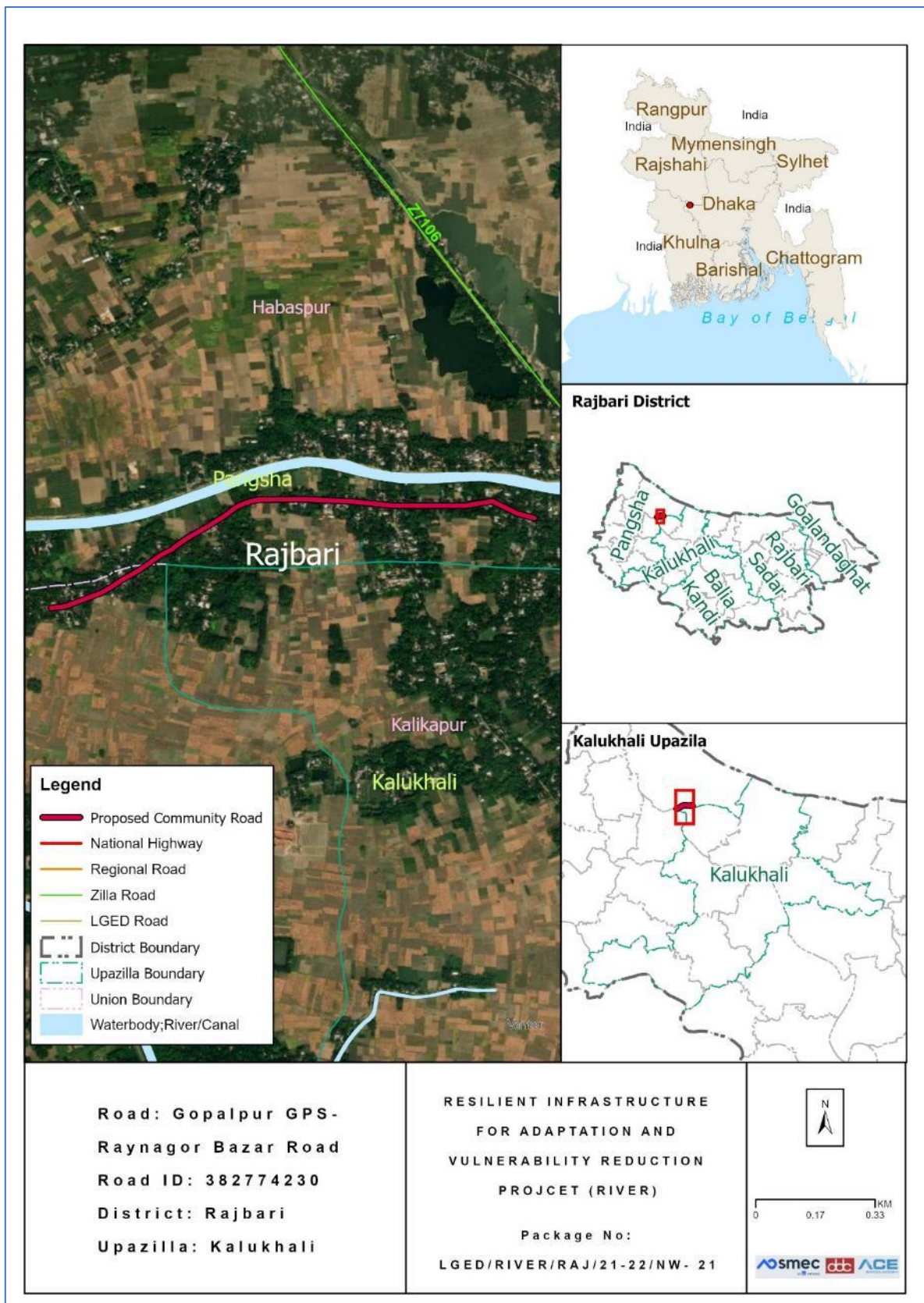
included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

The influence area of Gopalpur GPS-Raynagor Bazar Road does not contain any identified historical or archaeological site. Its main feature is the gradual transition from a utility-dominated roadside to a bazar-oriented end section. For much of the alignment, especially between Ch. 53 m and Ch. 1+262 m, electric poles are the most frequent roadside elements, occurring on both sides at several chainages. Human settlement is limited to a few points, mainly on the right side at Ch. 518 m and Ch. 818 m. The most sensitive non-commercial feature is the Eidgah graveyard at Ch. 1+067 on the right side, where construction should remain respectful and access should not be interrupted. The character of the road changes sharply at the end, where Raynagor Bazar is located on both sides at Ch. 1+340. Therefore, the earlier sections require caution around roadside utilities, while the terminal section requires stronger traffic, pedestrian access, dust and material-storage management due to bazar activity.



Location Map of the Proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The Sub-Project is categorized as a village road. Based on field survey, this sub-project involves a Herringbone Brick Bond (HBB) and earthen road. According to the design this sub-project will be developed with Bituminous Carpeting (Damaged) from Ch. 00m to Ch. 1340m.

Sub-project Location:

Important Features	
ID	382774230
District	Rajbari
Upazila	Kalukhali
Union	Kalikapur
Total Chainage	1340
Proposed Chainage	1340m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.80623 N, 89.43257 E
Road Ending Point Coordinates	23.8084 N, 89.44477 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approximately)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Gopalpur and Raynagar Bazar,
- ii. No historical sites were found
- iii. Some trees, vegetation and livelihood will be affected.
- iv. Very low chance of loss of agricultural land.
- v. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

No sensitive environmental, cultural, archaeological, or religious sites were observed within the vicinity of the sub-project area. . For much of the alignment, especially between Ch. 53 m and Ch. 1+262 m, electric poles are the most frequent roadside elements, occurring on both sides at several chainages. Human settlement is limited to a few points, mainly on the right side at Ch. 518 m and Ch. 818 m. The most sensitive non-commercial feature is the Eidgah graveyard at Ch. 1+067 on the right side, where construction should remain respectful and access should not be interrupted. The character of the road changes sharply at the end, where Raynagor Bazar is located on both sides at Ch. 1+340. Therefore, the earlier sections require caution around roadside utilities, while the terminal section requires stronger traffic, pedestrian access, dust and material-storage management due to bazar activity.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, auto rickshaw, tempo, trolley etc. over the road surface which causes air pollution.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise level also very low in the site area. Noise is originating from the commotion of locals. During construction period a rise in noise pollution may occur due to the transportation of equipment.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal

flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels vii) Bitumen are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The Paved Road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables.

B.3: Construction Phase

<p>Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):</p> <p>Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.</p>
<p>Type and quantity of raw materials used (wood, bricks, cement, water, etc.):</p> <p>Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes vii) Bitumen are the most common type of road materials used in construction.</p>
<p>Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:</p> <p>No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.</p>
<p>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</p> <p>The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.</p>
<p>Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>Low. No canal, river, pond, wetland, marsh, or drainage channel was recorded along the road. Drainage disturbance is therefore expected to be minimal.</p>
<p>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).</p>
<p>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</p> <p>Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)</p>

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Gopalpur GPS-Raynagor Bazar Road (382774230)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of livelihood	<ul style="list-style-type: none"> Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> • Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>10] and Hydrocarbons must be maintained through good construction work practices.</p> <ul style="list-style-type: none"> • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor’s log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP.</p> <ul style="list-style-type: none"> • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> Maintain safety measures during the movement of heavy machinery and equipment. Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. Adequate facilities ensuring sanitation for labor camps will be put in place. Treated water will be made available at site for drinking purpose. Adequate accommodation arrangements for labor forces. Labor code of conduct is to be disclosed through consultation. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks.</p> <ul style="list-style-type: none"> Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis. 	<ul style="list-style-type: none"> Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. Proper Signpost at any slippery areas will be ensured in construction site. Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works.</p> <ul style="list-style-type: none"> • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.</p> <ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>like traffic accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<ul style="list-style-type: none"> Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental and Social Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,608 Sq.m	@38.15 Tk. Per sqm	61,345.20
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1340.0 m	@ 2.56 BDT	3,430.40
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per</p>	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000

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Sl. no.	Description of item	Quantity	Unit price	Total amount
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000
10	<p><u>Tree Plantation</u></p> <p>For each tree felled, 3 should be planted in it's place.</p>	5 no.	@ Tk 500	7,500.00
11.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000
12.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000
13.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u></p>	Each	@ Tk. 35000	35,000
Subtotal Bill: Environmental and Social facilities				262,921.32



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa, ID: 382774227**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Kalukhali

Union: Kalikapur

Name of Community/Local Area: Kathal Tola More, Amuder More

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa, is proposed for upgrading over a 1.70 km length in Village A. The road currently has damaged HBB pavement at both ends, from Ch. 0+000–0+320 and Ch. 1+450–1+700, while the long middle portion from Ch. 0+320–1+450 remains earthen. This means the central part of the road is the weakest section and likely causes seasonal access problems, especially during rainfall. No road structure or safeguard feature is presently available along the alignment. The proposed intervention will provide Bituminous Carpeting from Ch. 0+000 to 1+700, creating a continuous paved link between the existing end sections. Unlike roads requiring frequent short palisading, this road mainly requires slope protection at selected right-side embankment locations: Ch. 0+200–0+212, Ch. 0+215–0+235, Ch. 0+350–0+385, Ch. 0+700–0+750 and Ch. 0+892–0+906. These protection works are concentrated within the first kilometre, where embankment vulnerability is higher. The proposed upgrading will remove the present break in pavement continuity, improve rural transport reliability, and reduce erosion-related damage along the right side of the road.

Estimated footprint / land area for this sub-project is 4,100 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1000m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Electric Pole (Ch. 150m), Electric Pole (Ch. 215m), Electric Pole (Ch. 245m), Electric Pole (Ch. 250m), Electric Pole (Ch. 300m), Settlement 2m away
		R	Electric Pole (Ch. 150m), Settlement 2m away
300-600	L		Electric Pole (Ch. 410m), Garden 1m away
		R	Electric Pole (Ch. 410m), Electric Pole (Ch. 480m)
600-900	L		Electric Pole (Ch. 795m), Electric Pole (Ch. 1010m), Garden 1m away

Chainage	(Left/Right)		Environmental and Social Impact
		R	Electric Pole (Ch. 1052m)
900-1200	L		Settlement 2m away
		R	Agricultural Land 3m away
1200-1500	L		Garden 3m away, Settlement 4m away
		R	Agricultural Land 4m away
1500-1700	L		Garden 2m away, Settlement 3m away
		R	Settlement 2m away



Starting Point of Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project (Road construction) is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at

construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

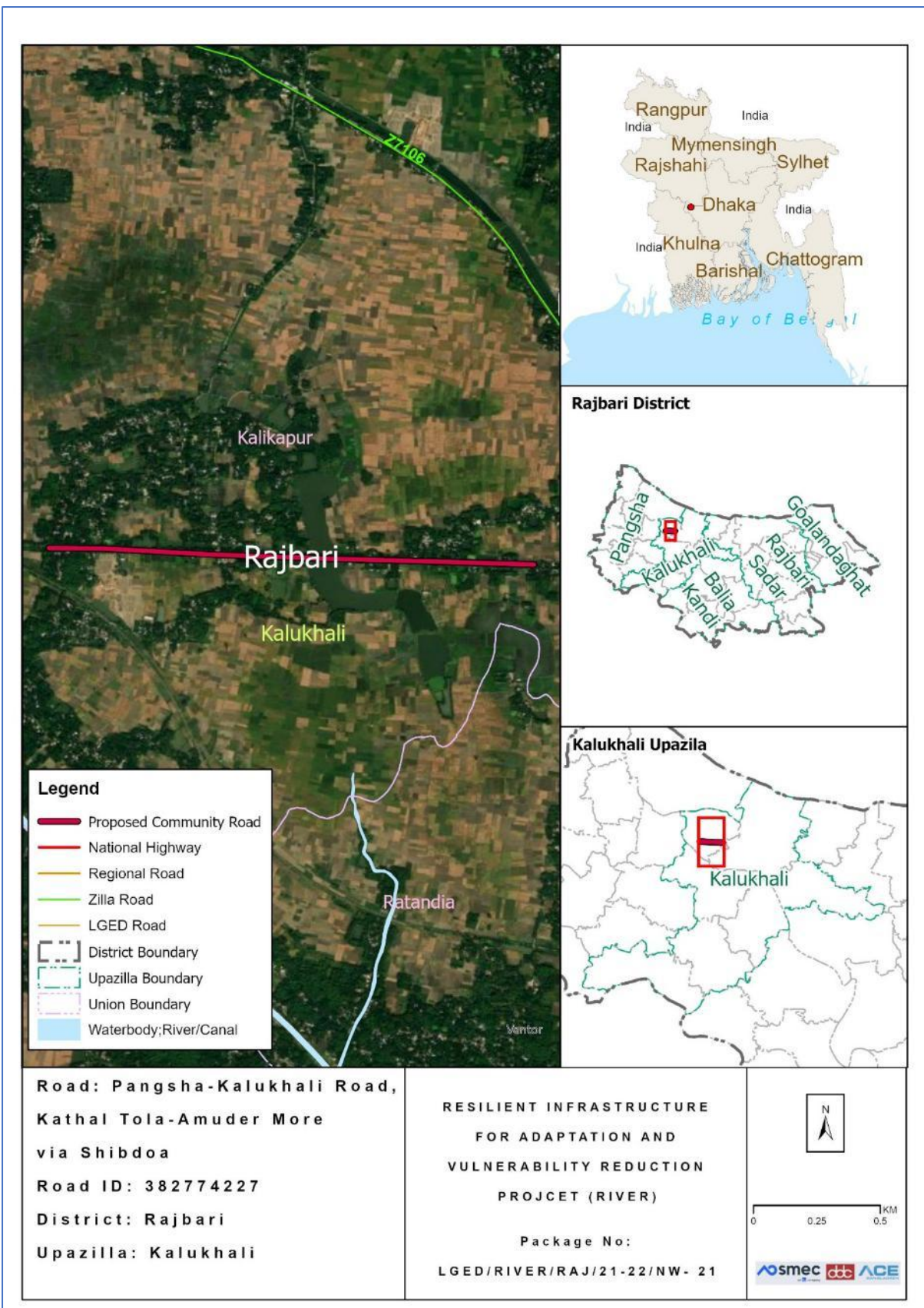
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

The Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa is not associated with any recorded historical or archaeological site. This road is more constrained by proximity than by large structures or waterbodies. In the first 300 m, settlements are only about 2 m away from the road on both sides, and several electric poles are concentrated from Ch. 150 m to Ch. 300 m. The narrow working environment continues farther ahead, where gardens come as close as 1 m from the road on the left side between Ch. 300 m and Ch. 900 m. From Ch. 900 m onward, the roadside condition becomes a mix of close settlements, gardens and agricultural plots. Agricultural land is found on the right side at 3–4 m distance, while gardens and settlements remain close on the left, especially between Ch. 1+200 and Ch. 1+700. Since houses, gardens and agricultural land are located very near the alignment, the road improvement works should avoid unnecessary widening of the work zone, protect private vegetation, and maintain daily access for households throughout construction.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through **Herringbone Brick Bond (HBB)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Chainage 00 m to Chainage 1700m**.

Sub-project Location:

Important Features	
ID	382774227
District	Rajbari
Upazila	Kalukhali
Union	Kalikapur
Total Chainage	1000m
Proposed Chainage	1000m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.78484 N, 89.450409 E
Road Ending Point Coordinates	23.787262 N, 89.455356 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Kathal Tola More and Amuder More.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

In the first 300 m, settlements are only about 2 m away from the road on both sides, and several electric poles are concentrated from Ch. 150 m to Ch. 300 m. The narrow working environment continues farther ahead, where gardens come as close as 1 m from the road on the left side between Ch. 300 m and Ch. 900 m. From Ch. 900 m onward, the roadside condition becomes a mix of close settlements, gardens and agricultural plots. Agricultural land is found on the right side at 3–4 m distance, while gardens and settlements remain close on the left, especially between Ch. 1+200 and Ch. 1+700. Since houses, gardens and agricultural land are located very near the alignment, the road improvement works should avoid unnecessary widening of the work zone, protect private vegetation, and maintain daily access for households throughout construction.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data for the project area was not readily available; however, the overall air quality appears to be good due to the rural environment and the presence of surrounding vegetation and agricultural land. A small amount of dust is generated by the movement of vehicles such as motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles along the existing road surface, which contributes slightly to local air pollution.

Construction activities during the dry season and the transportation of large quantities of construction materials may create additional dust and increase the concentration of vehicle-related pollutants. This may temporarily affect people who live and work near the project site. However, these impacts are expected to be **negative but** short-term, site-specific within a relatively small area, and reversible or preventable through appropriate mitigation measures.

Noise:

The existing noise level in the project area is generally low. Noise mainly originates from the daily activities and movement of local residents and vehicles. During the construction period, noise levels may temporarily increase due to the operation and transportation of construction equipment and materials. However, these impacts will be **temporary and limited to the construction period**.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning

riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge (E-I-C).

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes vii) Bitumen are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Low. No surface water body or defined drainage channel was identified along the alignment. The risk of modifying existing drainage features is low.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities

and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Pangsha-Kalukhali Road, Kathal Tola-Amuder More via Shibdoa (382774227)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	<ul style="list-style-type: none"> No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	and pedestrians, potential accidents to workers/ local people, generating dust and noise)	<ul style="list-style-type: none"> • Store the materials in designated places, with proper fencing and coverings. 		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. 	Contractor	Environmental Consultant of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>authority need to be taken before extraction or setting up bore wells.</p> <ul style="list-style-type: none"> • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>activities will be collected and stored separately in a stack yard and sold to local recyclers.</p> <ul style="list-style-type: none"> • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken 	Contractor	Environmental and Social Development Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	chemicals/contaminants, etc. to nearby water bodies	<p>before starting work at any sensitive section of the road.</p> <ul style="list-style-type: none"> Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 		
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and 	<ul style="list-style-type: none"> All construction equipment will be properly inspected timely. The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. Proper Signpost at any slippery areas will be ensured in construction site. Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel 	Contractor	<p style="text-align: center;">Environmental Consultant as well as Social Development and Gender Specialists of PIU</p>

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dermatitis.	<p>will be trained and drilled to test and ensure the coherence with the plan.</p> <ul style="list-style-type: none"> • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	2,040 Sq.m	@38.15 Tk. Per sqm	77,826.00
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1700.0m	@ 2.56 BDT	4,352.00
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain</p>	1 no.	LS @5000 Tk. Per box	5,000.00

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk. 30,000	30,000.00

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Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	Motivation training Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000.00
9.	Waste disposal facility Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10.	Water Test (Drinking Water samples) Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
11.	Working labour shed: Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
12.	Environmental management Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35000.00
Total amount for this Road				272,823.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Dhulihat Sheikh Bari Majar-Senbari Pucca Road, ID: 382735318**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Kalukhali

Union: Kalikapur

Name of Community/Local Area: Sonatoni, Raynagar

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Dhulihat Sheikh Bari Majar-Senbari Pucca Road is a 1.20 km rural access road in Village B, where the existing pavement is discontinuous and mostly weak. Short damaged BFS sections exist at Ch. 0+000–0+100 and Ch. 0+665–0+800, but the larger parts from Ch. 0+100–0+665 and Ch. 0+800–1+200 are still earthen. As a result, the road does not presently provide a dependable paved connection to the Majar and adjoining settlement areas. No existing structures or safeguard measures have been found at the site. The proposed improvement will upgrade the full alignment from Ch. 0+000 to 1+200 with Bituminous Carpeting, replacing the damaged BFS and earthen sections with a uniform road surface. Roadside protection has been limited to two short right-side palisading sections at Ch. 0+567–0+587 and Ch. 0+681–0+690, which suggests that instability is localized rather than continuous. The intervention will improve accessibility, reduce dust and mud generation, and provide a more durable road link serving the Dhulihat Sheikh Bari Majar and Senbari Pucca Road area.

Estimated footprint / land area for this sub-project is 3,600 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1200m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environment and Social Impact
00-300	L		Agricultural Land
		R	Mazar and Mosque (Ch.00m) 10m away
300-600	L		Mosque (Ch.305m) 5m away
		R	Agricultural Land
600-900	L		Agricultural Land
		R	Pond (Ch.600m) 7m away
900-1200	L		Agricultural Land
		R	Agricultural Land



Starting Point of Dhulihat Sheikh Bari Majar-Senbari Pucca Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project (Road construction) is not located within any remarkable environmentally sensitive area and will not cause any severe affect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

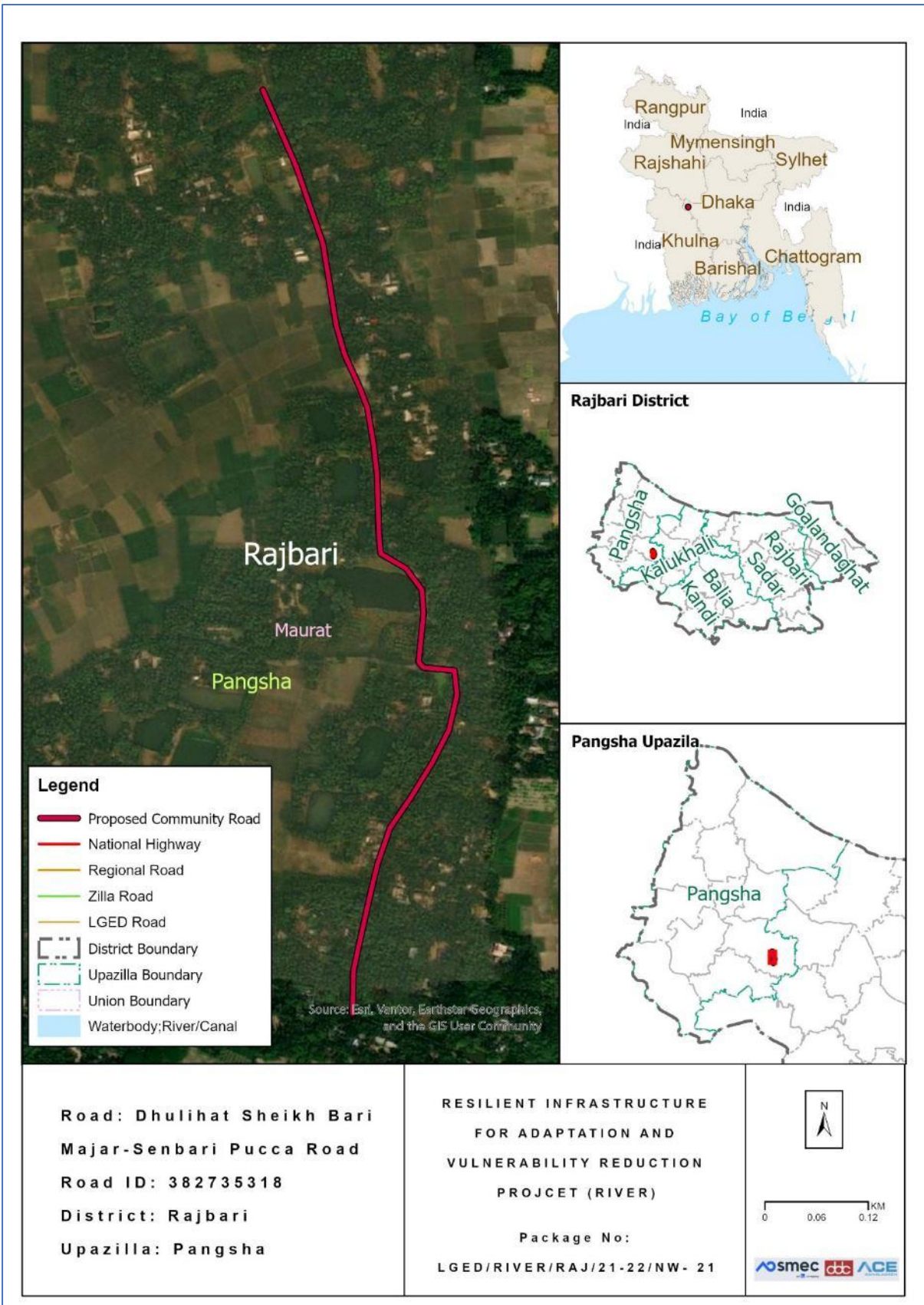
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

The Dhulihat Sheikh Bari Majar-Senbari Pucca Road passes mainly through agricultural land, but its social importance is concentrated near religious features. No historical or archaeological sites were identified in the influence area. At Ch. 0+000, a Mazar and Mosque are located on the right side about 10 m from the road, making the starting point culturally sensitive. A second mosque is situated on the left side at Ch. 305 m, only 5 m away, where dust, noise and access disruption should be carefully controlled, particularly during prayer periods. After this religiously sensitive beginning, the road becomes more open, with agricultural land dominating both sides. The main environmental feature in the later part is a pond on the right side at Ch. 600 m, about 7 m away from the road. Construction management for this road should therefore focus on respectful work practices near the Mazar and mosques, protection of the pond from runoff and spoil, and prevention of unnecessary damage to agricultural land.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The Sub-Project is categorized as a village road. Based on field survey, this sub-project involves of Earthen Road. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 0+00 to Ch. 1+200.

Sub-project Location:

Important Features	
ID	382735318
District	Rajbari
Upazila	Pangsha
Union	Mourat
Total Chainage	1200m
Proposed Chainage	1200m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting
Road Starting Point Coordinates	23.739363 N, 89.426832 E
Road Ending Point Coordinates	23.730131 N, 89.42773 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (Twelve) months (Approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Dhuliat.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

At Ch. 0+000, a Mazar and Mosque are located on the right side about 10 m from the road, making the starting point culturally sensitive. A second mosque is situated on the left side at Ch. 305 m, only 5 m away, where dust, noise and access disruption should be carefully controlled, particularly during prayer periods. After this religiously sensitive beginning, the road becomes more open, with agricultural land dominating both sides. The main environmental feature in the later part is a pond on the right side at Ch. 600 m, about 7 m away from the road. Construction management for this road should therefore focus on respectful work practices near the Mazar and mosques, protection of the pond from runoff and spoil, and prevention of unnecessary damage to agricultural land.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, auto rickshaw, tempo, trolley etc. over the road surface which causes air pollution.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise level also very low in the site area. Noise is originating from the commotion of locals. During construction period a rise in noise pollution may occur due to the transportation of equipment.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning

riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Low to Medium. No drainage channel was recorded, but a pond exists on the right side at Ch. 600 m, about 7 m away. Runoff, spoil, or material storage near this point may affect the pond.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat, thus no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Dhulihat Sheikh Bari Majar-Senbari Pucca Road (382735318)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of livelihood	<ul style="list-style-type: none"> Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	workers/ local people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. Provision of waste bins/ cans, where appropriate, Litter is to be collected daily. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> A separate grievance mechanism for workers has to be established for the work package. Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> Preparation of a waste management plan covering the following aspects: Waste from the temporary accommodation facilities for labor Waste from equipment maintenance/vehicles on-site. The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. Working areas are kept clean and tidy at all times. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks.</p> <ul style="list-style-type: none"> Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis. 	<ul style="list-style-type: none"> Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. Proper Signpost at any slippery areas will be ensured in construction site. Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user 		<p>of PIU</p>

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works.</p> <ul style="list-style-type: none"> • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.</p> <ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1440 Sqm	@38.15 Tk. Per sqm	54,936.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1200m	@ 2.56 BDT	3,072.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	1 no.	@ Tk. 35000	35,000
Total amount for this Road				248,653.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Mourat UP Office-Khea via Biswas Para Road, ID: 382735316**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Pangsha

Union: Mourat

Name of Community/Local Area: Kheyaghat

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Mourat UP Office-Khea via Biswas Para Road is listed as a 1.35 km road, although the proposed pavement works are specified for the first 0.60 km from Ch. 0+000 to 0+600. This section is currently unpaved and earthen, making it vulnerable to surface damage, dust in dry seasons, and muddy movement during monsoon periods. A damaged U-drain is located at Ch. 0+400, which is a key drainage concern for this road. The proposed works will provide Bituminous Carpeting from Ch. 0+000 to 0+600, focusing on the presently earthen section. Drainage improvement is also a major component, with U-drains proposed at Ch. 0+400 and Ch. 0+500 to manage roadside runoff and reduce pavement deterioration. No safeguard feature is currently available at the site. Compared with other roads in the package, this sub-project is more drainage-focused, as the improvement of U-drains is essential for protecting the short BC section and maintaining access between Mourat UP Office, Khea, and Biswas Para.

Estimated footprint / land area for this sub-project is 1,800 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 600m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Mosque, Eidgah, and Graveyard 12-15 m away
		R	Agricultural Land
300-600	L		Bazar (Ch.520m) 5m away
		R	Agricultural Land



Starting Point of Mourat UP Office-Khea via Biswas Para Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem

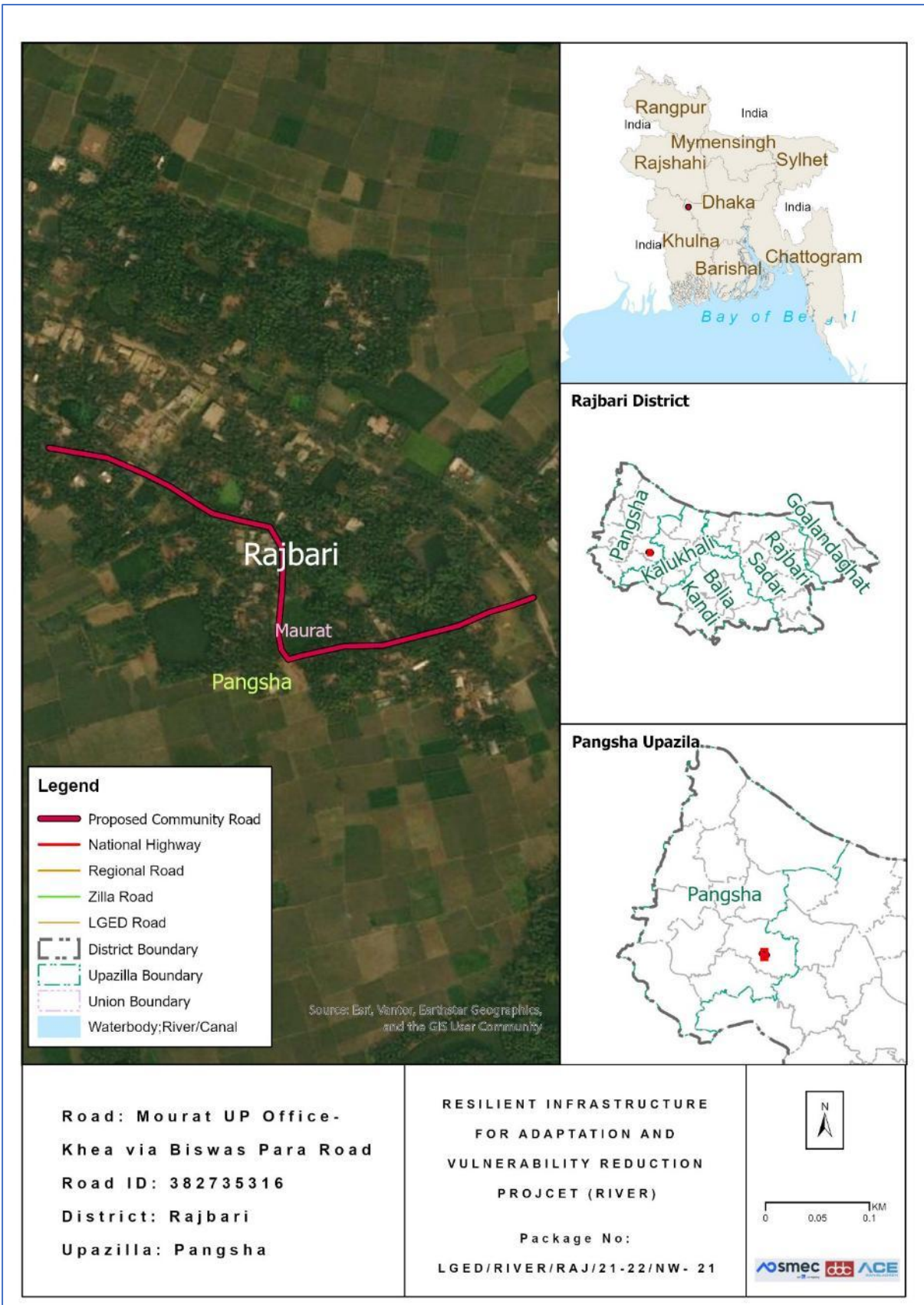
and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

No historical or archaeological sites were identified along the Mourat UP Office-Khea via Biswas Para Road. Although the recorded sensitive features are limited to the first 600 m, this short section carries several important community functions. The road begins near a combined religious and burial zone, with a mosque, Eidgah and graveyard located on the left side about 12–15 m away, while agricultural land lies on the right. This part of the road should remain accessible for prayers, Eid gatherings and burial-related movement. The setting changes near Ch. 520 m, where a bazar is located only 5 m from the road on the left side. This makes the latter part of the intervention section more active in terms of pedestrians, small traders and local transport. The road is therefore sensitive not because of many scattered features, but because religious, burial and market activities are concentrated within a short distance. Construction should maintain access to these facilities and avoid creating dust, blockage or safety risks near the bazar.



Location Map of the Proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Chainage 00m to Chainage 600 m**.

Sub-project Location:

Important Features	
ID	382735316
District	Rajbari
Upazila	Pangsha
Union	Mourat
Total Chainage	600m
Proposed Chainage	600m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.737194 N, 89.421723 E
Road Ending Point Coordinates	23.738308 N, 89.417753 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Kheyaghat.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. The road begins near a combined religious and burial zone, with a mosque, Eidgah and graveyard located on the left side about 12–15 m away, while agricultural land lies on the right. This part of the road should remain accessible for prayers, Eid gatherings and burial-related movement. The setting changes near Ch. 520 m, where a bazar is located only 5 m from the road on the left side. This makes the latter part of the intervention section more active in terms of pedestrians, small traders and local transport. The road is therefore sensitive not because of many scattered features, but because religious, burial and market activities are concentrated within a short distance. Construction should maintain access to these facilities and avoid creating dust, blockage or safety risks near the bazar.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data for the project area was not readily available; however, the overall air quality appears to be good due to the rural environment and the presence of surrounding vegetation and agricultural land. A small amount of dust is generated by the movement of vehicles such as motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles along the existing road surface, which contributes slightly to local air pollution.

Construction activities during the dry season and the transportation of large quantities of construction materials may create additional dust and increase the concentration of vehicle-related pollutants. This may temporarily affect people who live and work near the project site. However, these impacts are expected to be negative but short-term, site-specific within a relatively small area, and reversible or preventable through appropriate mitigation measures.

Noise:

The existing noise level in the project area is generally low. Noise mainly originates from the daily activities and movement of local residents and vehicles. During the construction period, noise levels may temporarily increase due to the operation and transportation of

construction equipment and materials. However, these impacts will **be** temporary and limited to the construction period.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies

support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Low. No pre-existing drainage channel or surface water body was identified in the recorded road section. Drainage-related impact is expected to be low.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Mourat UP Office-Khea via Biswas Para Road (382735316)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. 	PIU & Contractor	Environmental Consultant of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>options will be selected during the construction works.</p>		
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Every construction materials storage site will be well fenced by Tin and safety caution tape. 		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor 	Contractor	Environmental Consultant of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	construction.	<ul style="list-style-type: none"> • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.</p>	<p>ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan.</p> <ul style="list-style-type: none"> • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. All precautions to store chemicals/oil/fuel properly so that no chance of spill. Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> Pollution from waste materials. Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.</p> <ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<ul style="list-style-type: none"> By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental and Social Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

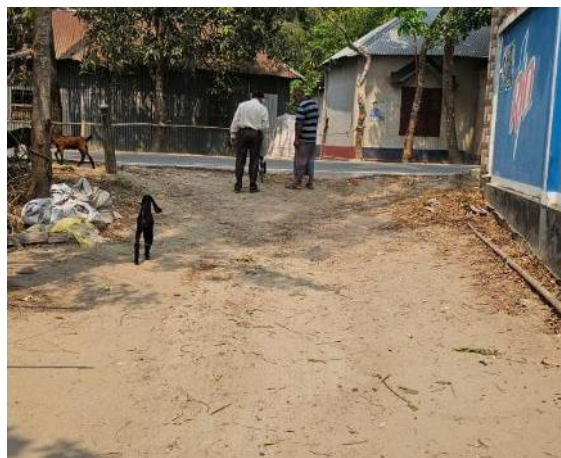
Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	720 Sq.m	@38.15 Tk. Per sqm	27,468.00
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	600.0m	@ 2.56 BDT	1,536.00
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout</p>	1 no.	LS @5000 Tk. Per box	5,000.00

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Sl. no.	Description of item	Quantity	Unit price	Total amount
	the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk. 30,000	30,000.00
8.	<p><u>Motivation training</u></p>	1 no.	LS @ Tk. 10,000	10,000.00

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Sl. no.	Description of item	Quantity	Unit price	Total amount
	Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.			
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10	<u>Tree Plantation</u> For each tree felled, 3 shall be planted as replacement	3 no.	@ Tk 500	4,500.00
11.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
12.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
13.	<u>Environmental and Social management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35,000.00
	Total amount for this Road			224,149.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Bajeapta-Molonche Road, ID: 382735018**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Pangsha

Union: Mourat

Name of Community/Local Area: Bajeapta and Molonche

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Bajeapta-Molonche Road under Village B has been identified for upgrading from an earthen surface to a paved rural road. The supplied data lists the road length as 0.60 km, but the pavement condition and proposed intervention chainages extend from Ch. 0+000 to 1+350; therefore, the intervention description follows the provided chainage extent. The entire recorded section is presently unpaved and earthen, with no existing structures or safeguard features along the alignment. This makes the road highly dependent on seasonal conditions, with likely problems of dust, rutting, and muddy access. Bituminous Carpeting is proposed from Ch. 0+000 to 1+350 to establish a durable all-weather surface. Palisading works are proposed only at two vulnerable locations: Ch. 0+500–0+520 on the right side and Ch. 0+730–0+760 on the left side. The limited number of protection locations indicates that the main priority is pavement upgrading, while roadside stabilization is needed only at selected weak edges. The proposed works will significantly improve basic accessibility and reduce the maintenance burden on this currently earthen road.

Estimated footprint / land area for this sub-project is 4,050 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1350m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Agricultural Land
		R	Mourat UP 100m away
300-600	L		GPS 180m away
		R	Bazar 250m away
600-900	L		Agricultural Land
		R	Mosque 40m away
900-1350	L		Agricultural Land

Chainage	(Left/Right)		Environmental and Social Impact
		R	Agricultural Land



Starting Point of Bajeapta-Molonche Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem

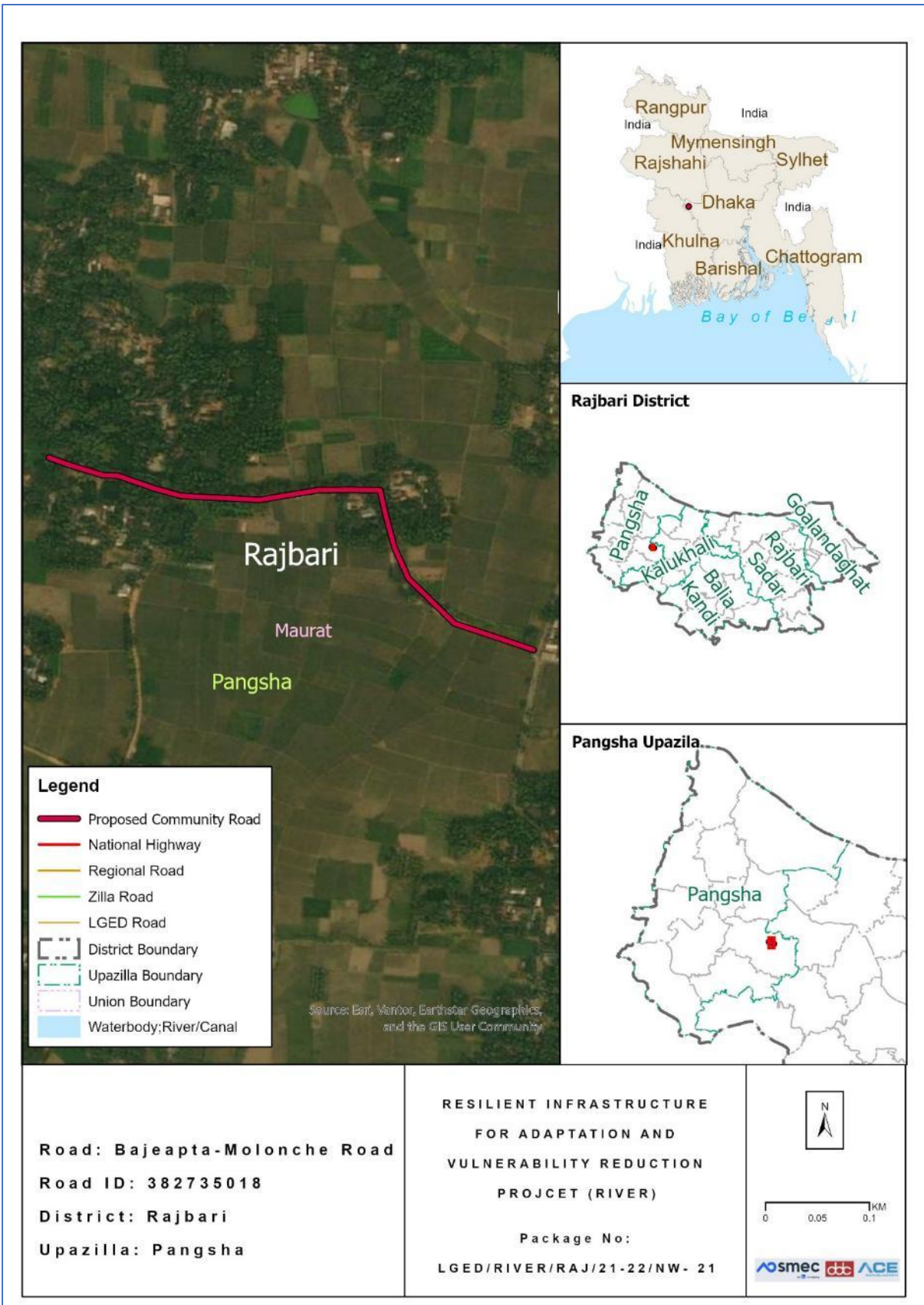
and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

The Bajeaapta-Molonche Road has no identified historical or archaeological site within its influence area. Compared with the other roads, its sensitive receptors are mostly set back from the carriageway rather than immediately beside it. Agricultural land forms the dominant roadside setting, especially along the left side and in the final section from Ch. 900 m to Ch. 1+350. Community facilities are located nearby but not directly on the road edge: Mourat UP Office is about 100 m away on the right side in the first 300 m, a GPS is about 180 m away on the left, a bazar is about 250 m away on the right between Ch. 300 m and Ch. 600 m, and a mosque is about 40 m away on the right between Ch. 600 m and Ch. 900 m. As these facilities may generate local movement toward the road, access routes should remain open during construction. The main safeguard need for this road is to protect agricultural land and ensure that traffic, pedestrians, students, worshippers and local market users can continue moving safely.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of damaged HBB and BFS sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Chainage 00m to Chainage 1350 m**.

Sub-project Location:

Important Features	
ID	382735018
District	Rajbari
Upazila	Pangsha
Union	Mourat
Total Chainage	1350m
Proposed Chainage	1350m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.748009 N, 89.423693 E
Road Ending Point Coordinates	23.746643 N, 89.427596 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Bajeaapta and Molonche.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Agricultural land forms the dominant roadside setting, especially along the left side and in the final section from Ch. 900 m to Ch. 1+350. Community facilities are located nearby but not directly on the road edge: Mourat UP Office is about 100 m away on the right side in the first 300 m, a GPS is about 180 m away on the left, a bazar is about 250 m away on the right between Ch. 300 m and Ch. 600 m, and a mosque is about 40 m away on the right between Ch. 600 m and Ch. 900 m. As these facilities may generate local movement toward the road, access routes should remain open during construction. The main safeguard need for this road is to protect agricultural land and ensure that traffic, pedestrians, students, worshippers and local market users can continue moving safely.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data for the project area was not readily available; however, the overall air quality appears to be good due to the rural environment and the presence of surrounding vegetation and agricultural land. A small amount of dust is generated by the movement of vehicles such as motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles along the existing road surface, which contributes slightly to local air pollution.

Construction activities during the dry season and the transportation of large quantities of construction materials may create additional dust and increase the concentration of vehicle-related pollutants. This may temporarily affect people who live and work near the project site. However, these impacts are expected to be negative but short-term, site-specific within a relatively small area, and reversible or preventable through appropriate mitigation measures.

Noise:

The existing noise level in the project area is generally low. Noise mainly originates from the daily activities and movement of local residents and vehicles. During the construction period, noise levels may temporarily increase due to the operation and transportation of

construction equipment and materials. However, these impacts will **be** temporary and limited to the construction period.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies

support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Low. No river, canal, pond, wetland, marsh, or drainage channel was recorded along the road. The likelihood of drainage disturbance is low.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Bajeapta-Molonche Road (382735018)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. 	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. 	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative 	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		options will be selected during the construction works.		
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Every construction materials storage site will be well fenced by Tin and safety caution tape. 		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> Maintain safety measures during the movement of heavy machinery and equipment. Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. 	Contractor	Social Development Specialist and Gender Specialist of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	construction.	<ul style="list-style-type: none"> • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	<p>ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan.</p> <ul style="list-style-type: none"> • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.</p> <ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: 	Upazila Engineer (UE)	District Executive Engineer, LGED

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<ul style="list-style-type: none"> By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental and Social Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1620 Sq.m	@38.15 Tk. Per sqm	61,803.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1350.0m	@ 2.56 BDT	3,456.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000.00

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00

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Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	Motivation training Motivation training (twice: before and after construction start) of the Upazila Engineer and Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000.00
9.	Waste disposal facility Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10.	Water Test (Drinking Water samples) Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
11.	Working labour shed: Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
12.	Environmental and Social management Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35,000.00
Total amount for this Road				255,904.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road, ID: 382294039**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Goalanda

Union: Daulatdia, Debgram

Name of Community/Local Area: Nuru Mondol Para, Omor Ali Mollah Para, Manik Saddar Bari, Bepari Para Mor, Tenapecha

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road is one of the longer sub-project roads, extending 2.165 km through Village A. The full existing alignment from Ch. 0+000 to 2+165 is covered with HBB pavement, meaning the road already has basic hard surfacing but requires upgrading to a higher and more durable standard. The road includes several drainage structures: a U-drain at Ch. 0+473 and pipe culverts at Ch. 0+619, Ch. 0+916 and Ch. 1+271. These structures are important because the road appears to serve a drainage-sensitive corridor. The proposed intervention includes Bituminous Carpeting over the entire length from Ch. 0+000 to 2+165. Additional protection works are more diverse than in most other roads, including palisading at Ch. 0+129–0+150, Ch. 0+205–0+236 and Ch. 0+450–0+465 on the right side, RCC guide posts for 50 m, and RCC toe walls from Ch. 1+895–1+932 and Ch. 2+138–2+160. No existing safeguard feature is available. The combination of BC surfacing, guide posts, palisading, and toe walls will improve both road durability and roadside safety along this important NHW-to-UZR connecting route.

Estimated footprint / land area for this sub-project is 6,495 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 2165m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Pond (Ch.90m) 20m away, Settlement (Ch.280) 10m away
		R	Settlement (Ch.280) 10m away, Small Stream (Ch.290) 40m away
300-600	L		Settlement (Ch.495) 5m away, Agricultural Land (Ch. 380) 20m away
		R	Agricultural Land (Ch. 420) 30m away, Small Stream (Ch.420) 40m away

Chainage	(Left/Right)		Environmental and Social Impact
600-900	L		Settlement (Ch.725) 5m away
		R	Agricultural Land (Ch. 650) 30m away, Small Stream (Ch.720) 40m away
900-1200	L		Poultry Farm (Ch. 1098) 15m away, Banana Trees (Ch. 1194) 10m away
		R	Agricultural Land (Ch. 1194) 30m away
1200-1500	L		Poultry Farm (Ch. 1340) 10m away
		R	Agricultural Land (Ch. 1350) 30m away
1500-1800	L		Poultry Farm (Ch. 1680) 15m away, Settlement (Ch.1517) 5m away
		R	Agricultural Land (Ch. 1550) 30m away
1800-2100	L		Settlement (Ch.1889) 5m away, Poultry Farm (Ch. 1950) 10m away
		R	Agricultural Land (Ch. 1846) 30m away, Ditch (Ch. 2020) 20m away
2100-2165			Settlement (Ch.2120) 5m away
			Agricultural Land (Ch. 2140) 30m away, Shop (Ch. 2165) 5m away



Starting Point of Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is

not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

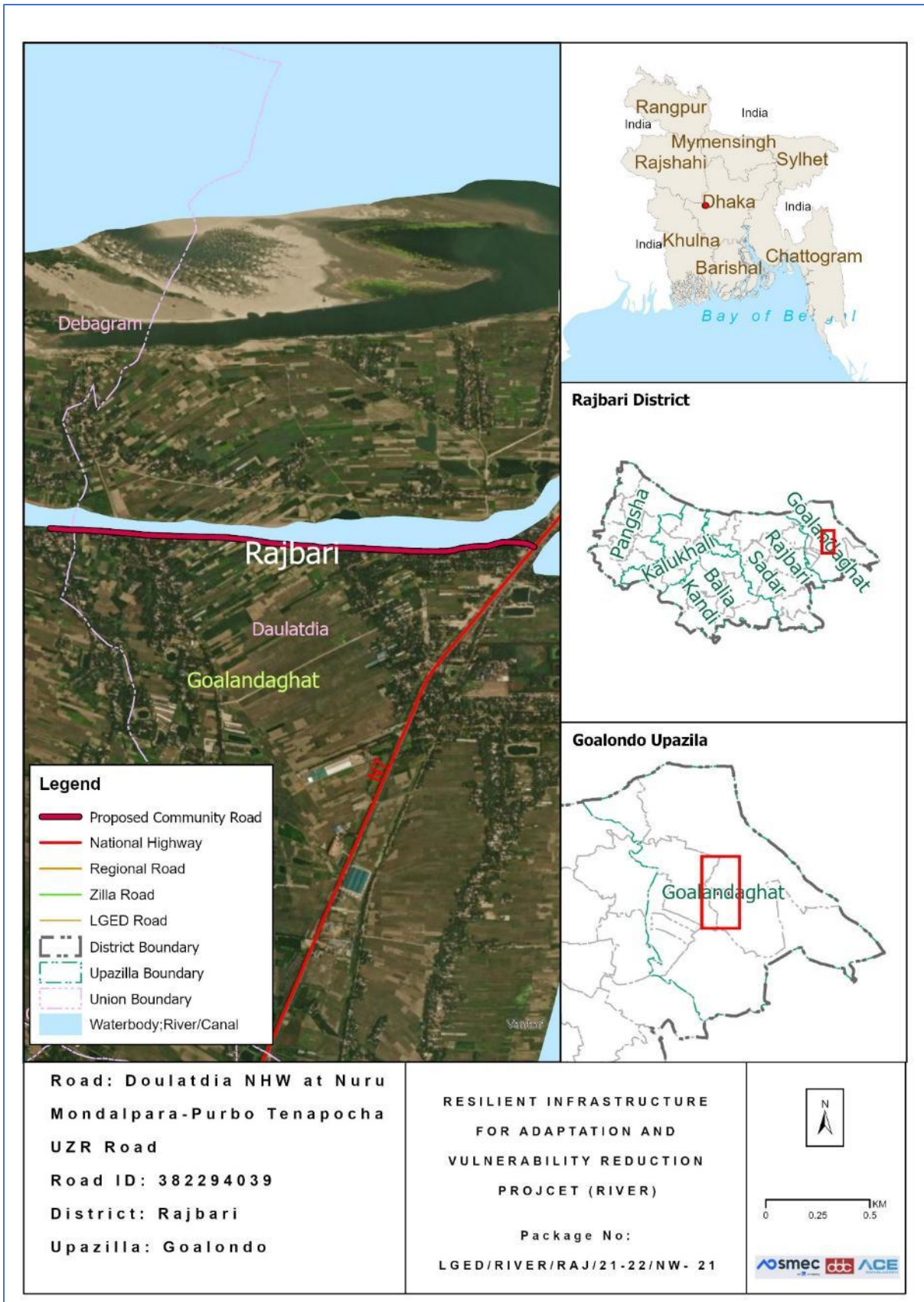
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

The Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road is the most varied of the listed alignments, and no historical or archaeological site was recorded within its influence area. The first part combines waterbody and settlement sensitivity, with a pond at Ch. 90 m on the left, settlements near Ch. 280 m on both sides, and a small stream at Ch. 290 m on the right. In the next several hundred metres, close settlements at Ch. 495 m and Ch. 725 m on the left sit only about 5 m from the road, while the right side contains agricultural land and small streams around Ch. 420 m and Ch. 720 m. The middle and later sections support livelihood activities: poultry farms are located at Ch. 1+098, Ch. 1+340, Ch. 1+680 and Ch. 1+950 on the left side, banana trees are present near Ch. 1+194, and agricultural land continues along the right side. Near the end, the road again becomes more settlement- and access-sensitive, with households at Ch. 1+889 and Ch. 2+120, a ditch at Ch. 2+020, and a shop at Ch. 2+165. Construction along this road should be managed with extra care because disturbance may affect residential access, poultry farms, agricultural plots, roadside business, ponds, streams and drainage ditches within the same corridor.



Location Map of the Proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of unpaved sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Chainage 00m to Chainage 2165 m**.

Sub-project Location:

Important Features	
ID	382294039
District	Rajbari
Upazila	Goalanda
Union	Daulatdia, Debgram
Total Chainage	2165m
Proposed Chainage	2165m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.7562 N, 89.774708 E
Road Ending Point Coordinates	23.756664 N, 89.754032 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Nuru Mondol Para, Omor Ali Mollah Para, Manik Saddar Bari, Bepari Para Mor, and Tenapecha.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

The first part combines waterbody and settlement sensitivity, with a pond at Ch. 90 m on the left, settlements near Ch. 280 m on both sides, and a small stream at Ch. 290 m on the right. In the next several hundred metres, close settlements at Ch. 495 m and Ch. 725 m on the left sit only about 5 m from the road, while the right side contains agricultural land and small streams around Ch. 420 m and Ch. 720 m. The middle and later sections support livelihood activities: poultry farms are located at Ch. 1+098, Ch. 1+340, Ch. 1+680 and Ch. 1+950 on the left side, banana trees are present near Ch. 1+194, and agricultural land continues along the right side. Near the end, the road again becomes more settlement- and access-sensitive, with households at Ch. 1+889 and Ch. 2+120, a ditch at Ch. 2+020, and a shop at Ch. 2+165. Construction along this road should be managed with extra care because disturbance may affect residential access, poultry farms, agricultural plots, roadside business, ponds, streams and drainage ditches within the same corridor.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data for the project area was not readily available; however, the overall air quality appears to be good due to the rural environment and the presence of surrounding vegetation and agricultural land. A small amount of dust is generated by the movement of vehicles such as motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles along the existing road surface, which contributes slightly to local air pollution.

Construction activities during the dry season and the transportation of large quantities of construction materials may create additional dust and increase the concentration of vehicle-related pollutants. This may temporarily affect people who live and work near the project site. However, these impacts are expected to be negative but short-term, site-specific within a relatively small area, and reversible or preventable through appropriate mitigation measures.

Noise:

The existing noise level in the project area is generally low. Noise mainly originates from the daily activities and movement of local residents and vehicles. During the construction

period, noise levels may temporarily increase due to the operation and transportation of construction equipment and materials. However, these impacts will **be** temporary and limited to the construction period.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies

support a variety of indigenous fish species such as rui (*Labeo rohita*), katla (*Catla catla*), and koi (*Anabas testudineus*), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Medium. A pond is present at Ch. 90 m, small streams at Ch. 290 m, Ch. 420 m and Ch. 720 m, and a ditch at Ch. 2+020. Construction may disturb drainage if these features are blocked or polluted.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There are no protected areas in or around project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

No

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Doulatdia NHW at Nuru Mondalpara-Purbo Tenapocha UZR Road (382294039)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of livelihood	<ul style="list-style-type: none"> Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> • Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. • Potable water supply will be ensured for every workers/employee in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 		
Construction Activity	Dust	<ul style="list-style-type: none"> Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. 	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>activities will be collected and stored separately in a stack yard and sold to local recyclers.</p> <ul style="list-style-type: none"> • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken 	Contractor	Environmental and Social Development

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	chemicals/contaminants, etc. to nearby water bodies	before starting work at any sensitive section of the road. <ul style="list-style-type: none"> • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 		Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>heat stress, and dermatitis.</p>	<p>personnel will be trained and drilled to test and ensure the coherence with the plan.</p> <ul style="list-style-type: none"> • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. 	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. All precautions to store chemicals/oil/fuel properly so that no chance of spill. Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> Pollution from waste materials. Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental and Social Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	2598 Sq.m	@38.15 Tk. Per sqm	99,113.70
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	2165.0m	@ 2.56 BDT	5,542.40
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the</p>	1 no.	LS @5000 Tk. Per box	5,000.00

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Sl. no.	Description of item	Quantity	Unit price	Total amount
	government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report for Community Roads of Rajbari District (GCCR-21)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000.00
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
12.	<u>Environmental and Social management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35,000.00
Total amount for this Road				295,301.82



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Dharmotola Hat-Jangle UP Office Road, ID: 382074131**

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

District: Rajbari

Upazila: Baliakandi

Union: Bannatoli

Name of Community/Local Area: Dharmotola, Bannatoli Mor

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Dharmotola Hat-Jangle UP Office Road sub-project covers a 1.00 km intervention section from Ch. 1+600 to 2+600 in Village A. Unlike most other roads in the package, this road already has a BC section from Ch. 1+600 to 1+800, followed by a BFS section from Ch. 1+800 to 2+600. Therefore, the project is mainly intended to standardize the full intervention length with Bituminous Carpeting rather than construct a completely new paved surface. The road has several important existing features concentrated near the transition area, including a 4.5 m × 4.5 m regulator at Ch. 1+818, damaged palisading from Ch. 1+810 to 1+850, and a damaged U-drain measuring 625 mm × 600 mm at Ch. 2+370. The proposed intervention includes BC works from Ch. 1+600 to 2+600, rehabilitation of the U-drain at Ch. 2+370, and palisading from Ch. 1+810 to 1+850. No existing safeguard feature was found at the site. Because the regulator and damaged palisading are located very close to each other, the proposed protection work will be important for maintaining drainage control and roadside stability near Ch. 1+818, while the improved BC surface will enhance access between Dharmotola Hat and Jangle UP Office.

Estimated footprint / land area for this sub-project is 3,000 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: From 00m to 1000m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	(Left/Right)		Environmental and Social Impact
00-300	L		Pond (Ch.00m) 5m away
		R	Regulator (Ch.218m)
300-600	L		Banana Trees (Ch. 571) 5m away
		R	Pond (Ch.556m) 5m away
600-900	L		Agricultural Land
		R	Bamboo Trees (Ch. 675) 6m away, Pond (Ch.762m)

Chainage	(Left/Right)		Environmental and Social Impact
900-1000	L		Agricultural Land
		R	Temple (Ch.940m) 15m away



Starting Point of Dharmotola Hat-Jangle UP Office Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified

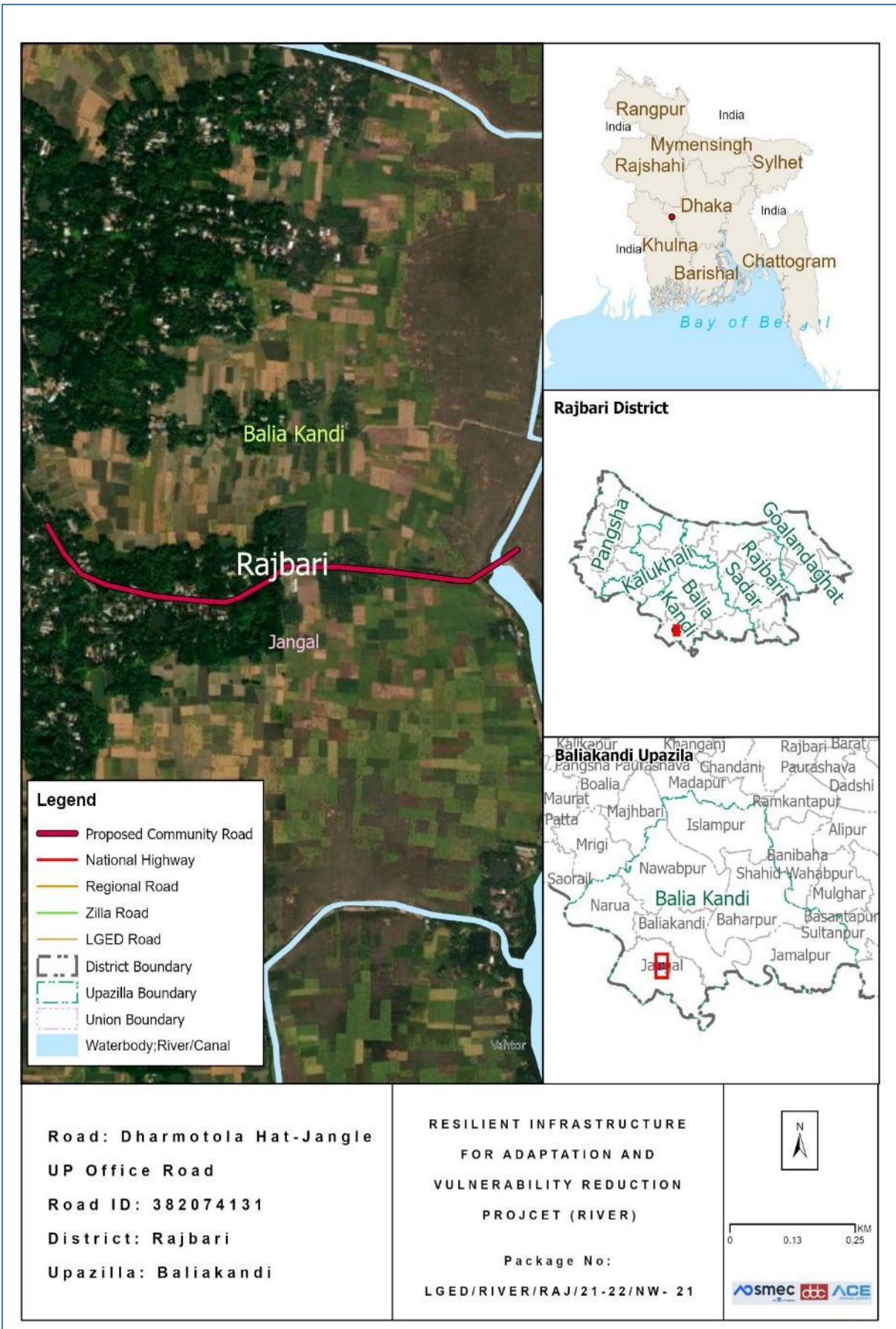
environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amount of plastic, fuel etc. in equipment yards. Human wastes might be deposited in labor camp.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

No historical or archaeological sites were found along the Dharmotola Hat-Jangle UP Office Road, but the alignment is sensitive due to water-control features, ponds, vegetation and a temple. The road opens beside a pond only 5 m away on the left at Ch. 0+000, while a regulator is located on the right at Ch. 218 m. This makes the first section important for maintaining drainage and preventing obstruction of water movement. Another pond appears on the right at Ch. 556 m, close to banana trees on the left at Ch. 571 m, both within about 5 m of the road. Farther ahead, bamboo trees at Ch. 675 m and a pond at Ch. 762 m are located on the right side, with agricultural land on the left. The only religious feature is the temple near the end of the road at Ch. 940 m, about 15 m from the alignment. For this road, environmental care should focus on keeping the regulator functional, avoiding spoil disposal near ponds, protecting banana and bamboo vegetation where practicable, and maintaining safe access to the temple.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of HBB and unpaved sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Ch.0+00 to Ch.1+000**

Sub-project Location:

Important Features	
ID	382074131
District	Rajbari
Upazila	Baliakandi
Union	Bannatoli
Total Chainage	1000m
Proposed Chainage	1000m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	23.6070149 N, 89.8175822 E
Road Ending Point Coordinates	23.6083439 N, 89.5161265 E

Land ownership

Land is owned by Government.

Expected construction period: 12 (twelve months approx.)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

- i. The proposed Sub-project is located within Dharmotola and Bannatoli Mor.
- ii. No historical sites were found
- iii. Not required to relocate local community.
- iv. Some trees, vegetation and livelihood will be affected.
- v. Very low chance of loss of agricultural land.
- vi. Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

B.1: Environmental and Social feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

Sensitive environmental, cultural, and archaeological features within Rajbari District are generally located at a considerable distance from the proposed subproject site. The road opens beside a pond only 5 m away on the left at Ch. 0+000, while a regulator is located on the right at Ch. 218 m. This makes the first section important for maintaining drainage and preventing obstruction of water movement. Another pond appears on the right at Ch. 556 m, close to banana trees on the left at Ch. 571 m, both within about 5 m of the road. Farther ahead, bamboo trees at Ch. 675 m and a pond at Ch. 762 m are located on the right side, with agricultural land on the left. The only religious feature is the temple near the end of the road at Ch. 940 m, about 15 m from the alignment. For this road, environmental care should focus on keeping the regulator functional, avoiding spoil disposal near ponds, protecting banana and bamboo vegetation where practicable, and maintaining safe access to the temple.

Location of environmental and Social important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

Baseline air quality and noise levels:

Dust:

Ambient air quality data for the project area was not readily available; however, the overall air quality appears to be good due to the rural environment and the presence of surrounding vegetation and agricultural land. A small amount of dust is generated by the movement of vehicles such as motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles along the existing road surface, which contributes slightly to local air pollution.

Construction activities during the dry season and the transportation of large quantities of construction materials may create additional dust and increase the concentration of vehicle-related pollutants. This may temporarily affect people who live and work near the project site. However, these impacts are expected to be negative but short-term, site-specific within a relatively small area, and reversible or preventable through appropriate mitigation measures.

Noise:

The existing noise level in the project area is generally low. Noise mainly originates from the daily activities and movement of local residents and vehicles. During the construction period, noise levels may temporarily increase due to the operation and transportation of construction

equipment and materials. However, these impacts will **be** temporary and limited to the construction period.

Baseline soil quality:

The sub-project area in Rajbari District is located within the active floodplain of the Padma River and its associated distributaries, which strongly influence the geomorphology of the region. The soil profile is primarily composed of recent alluvial deposits consisting of sandy loam, silt loam, and clay loam, formed through continuous sedimentation and seasonal flooding processes. Due to the dynamic nature of the Padma river system, soil texture and composition vary across locations, particularly in char and low-lying areas where fresh sediments are frequently deposited. These soils are generally fertile and suitable for intensive agriculture, supporting crops such as paddy, jute, and vegetables. However, the area is also susceptible to riverbank erosion, sediment reworking, and periodic flooding, which affect land stability and agricultural practices in the floodplain environment.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the principal source of potable water in the sub-project area of Rajbari District. The local population largely depends on shallow and deep tube wells for drinking and domestic purposes. The groundwater table is generally found at a depth ranging from approximately 120 to 250 feet below ground level, with seasonal variation influenced by monsoon recharge and dry season abstraction. Groundwater quality assessments indicate the presence of iron in many tube wells, often leading to discoloration and taste issues, while arsenic contamination is generally low to moderate in this district compared to highly affected regions. Therefore, appropriate public health measures, including the use of iron removal units, regular monitoring of water quality, and community awareness initiatives, are important to ensure safe drinking water. Deep tube wells tapping confined aquifers are commonly used for drinking purposes where available.

Groundwater quality: pH-6.5 to 8.0, DO-3.0 to 6.0 mg/l, TDS-150 to 400 mg/l, EC-150 to 500 μ S/cm, Fe-0.2 to 4.0 mg/l and As-trace to 0.02 mg/l (Field Study Report, March 2026).

Status of wildlife movement:

The sub-project area in Rajbari District supports a range of common faunal species typical of riverine floodplain and rural agricultural environments. The area provides suitable habitat for commonly observed bird species such as doyel (Oriental Magpie Robin, *Copsychus saularis*), shalik (Common Myna, *Acridotheres tristis*), kak (House Crow, *Corvus splendens*), bok (Cattle Egret, *Bubulcus ibis*), and choro (House Sparrow, *Passer domesticus*), which are frequently found in homesteads, croplands, and along riverbanks. These birds play important roles in insect control, seed dispersal, and maintaining ecological balance. The presence of small wild mammals and reptiles, including shial (Bengal Fox, *Vulpes bengalensis*), beji (mongoose, *Herpestes edwardsii*), and various snake species, reflects the typical biodiversity of the floodplain region and contributes to natural pest control and ecosystem stability. In addition, rivers, canals, and floodplain water bodies support a variety of indigenous fish species such as

ruhi (Labeo rohita), katla (Catla catla), and koi (Anabas testudineus), which are important for local livelihoods and food security. Overall, the composition of birds, mammals, and aquatic fauna indicates a functioning riverine ecosystem, where conservation of natural habitats and sustainable resource management are essential for maintaining biodiversity and ecological resilience.

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable):

Concerning ancillary facilities, the access road for the sub-project is proper in order for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option, this may cause more dust in the air also, the route has narrow curves.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established along the road since there are available open private lands. However, this will have to be done with the consent of land owner under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates vi) steels are the most common type of road materials used in construction.

Identification of access road for transportation (Yes/No):

Yes. The paved road can offer space adjacent labor camp to facilitate material unloading. However, considerations need to be taken account for avoiding disturbance at points where mosque, graveyard, primary school and high school is located. The pickup trucks as material transportation vehicles can enter the access road. Manual head load from unloading point to different locations can be done.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with local committee.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, cement dusts, dust from bricks, steel wires, during construction which can be identified as solid wastes. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which are mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 350 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand iii) cement iv) aggregates v) water vi) concretes are the most common type of road materials used in construction.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

Medium. Ponds are located at Ch. 0+000, Ch. 556 m and Ch. 762 m, and a regulator is present at Ch. 218 m. Drainage flow and pond water quality may be affected if construction materials or spoil enter these areas.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light but low effects of noise and air pollution.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

No

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

No

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

No.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.

<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area; therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)</p> <p>No</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.</p>

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Proposed Community Road: Dharmotola Hat-Jangle UP Office Road (382074131)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	<ul style="list-style-type: none"> No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All of the project stakeholders should be consulted Separate community level consultation meeting with the potential affected HHs All the safeguard documents will be disclosed to all relevant stakeholders. People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic	<ul style="list-style-type: none"> Transportation of construction materials to the site will be carried out by covering the materials as a whole. Store the materials in designated places, with proper 	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	fencing and coverings.		
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> • Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> • Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc. 		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage;	<ul style="list-style-type: none"> • All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. 	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	removal/relocation of utility services	<ul style="list-style-type: none"> • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Noise producing vehicles and equipment will be kept in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works. 		
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water hoses manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stock yards, and maintaining a visitor's log book at entrance) 	Contractor	Environmental Consultant of PIU

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		<ul style="list-style-type: none"> • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> • Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well 	Contractor	Social Development Specialist and Gender Specialist of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>as illegal drug trade. Written records of this awareness building session shall be kept on site.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same. 	Contractor	Social Development Specialist and Gender Specialist of PIU
Construction Activity	Waste Management: Improper management and	<ul style="list-style-type: none"> • Preparation of a waste management plan covering the following aspects: 	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>handling of hazardous and non-hazardous waste during construction.</p>	<ul style="list-style-type: none"> • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>provided with portable spill containment and cleanup equipment.</p> <ul style="list-style-type: none"> • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP 	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.</p>	<p>to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan.</p> <ul style="list-style-type: none"> • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. 		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

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		<ul style="list-style-type: none"> The contractor must arrange the cancellation of all temporary services. 		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	<ul style="list-style-type: none"> Preventative maintenance schedule should be followed. Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time. 	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic 	<ul style="list-style-type: none"> Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at 	Upazila Engineer (UE)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District Executive Engineer, LGED
Operation & Maintenance	Pollution of water bodies	<ul style="list-style-type: none"> Third party monitoring should be ensured for nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results to be compared with Bangladesh Environmental Quality Standards of DoE 	PIU	PSC / UP representative

Cost of Environmental and Social Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project.

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1200 Sq.m	@38.15 Tk. Per sqm	45,780.00
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1000.0m	@ 2.56 BDT	2,560.00
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the</p>	1 no.	LS @5000 Tk. Per box	5,000.00

Sl. no.	Description of item	Quantity	Unit price	Total amount
	government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00

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Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000.00
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10	<u>Tree Plantation</u> For each tree felled, 3 shall be planted as replacement.	2 no.	@ Tk 500	3,000.00
11.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
12.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
13.	<u>Environmental and Social management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each	@ Tk. 35000	35,000.00
Total amount for this Road				241,985.72



Existing Surroundings of the Sub-Project

**ANNEXURE 2:
ATTENDANCE OF CONSULTATION MEETING**

ANNEXURE 2: ATTENDANCE OF CONSULTATION MEETING

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
 Local Government Engineering Department (LGED)
 Public Consultation with Stakeholders

Name of Community Road: কামালদিয়া RAH হাট পাড়া/দিয়া ২১/লাড়া Date: ০৬/০৪/২৬
 Road ID: ৩৪ ২ ৭ ৬ ৪০ ৪৭ ১ ডিঙ্গা পাড় বড়িয়া (পাড়া গাঁও),
 Place of Consultation: (মুন্সিগঞ্জ জেলা) মন্সিগঞ্জ জেলা,
 Village: কামালদিয়া Ward No.: ০৬ Union: মন্সিগঞ্জ ডাঙ্গা Upazila: Sadar, Rajbari
 District: Rajbari

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	আব্দুল হান্নান	মহিলা	৩৫	কাজ	(মুন্সিগঞ্জ জেলা)		(স্বাক্ষর)
২	শ্রী: মন্সিগঞ্জ মন্সিগঞ্জ	মহিলা	৩৩	কাজ	(মুন্সিগঞ্জ জেলা)		(স্বাক্ষর)
৩	শ্রী: মন্সিগঞ্জ	৫	২৬	কাজ	৫		(স্বাক্ষর)
৪	শ্রী: মন্সিগঞ্জ	৫	৪৫	কাজ	৫		(স্বাক্ষর)
৫	শ্রী: মন্সিগঞ্জ	৫	৪৬	কাজ	৫		(স্বাক্ষর)
৬	শ্রী: মন্সিগঞ্জ	৫	৬৪	(কাজ)	৫		(স্বাক্ষর)
৭	শ্রী: মন্সিগঞ্জ	৫	২৫	কাজ	৫		(স্বাক্ষর)
৮	শ্রী: মন্সিগঞ্জ	৫	৩৬	কাজ	৫		(স্বাক্ষর)
৯	শ্রী: মন্সিগঞ্জ	৫	২২	কাজ	৫		(স্বাক্ষর)
১০	শ্রী: মন্সিগঞ্জ	৫	৫০	কাজ	৫		(স্বাক্ষর)
১১	শ্রী: মন্সিগঞ্জ	৫	৪০	কাজ	৫		(স্বাক্ষর)
১২	শ্রী: মন্সিগঞ্জ	৫	২০	কাজ	৫		(স্বাক্ষর)
১৩	শ্রী: মন্সিগঞ্জ	৫	৪০	কাজ	৫		(স্বাক্ষর)
১৪	শ্রী: মন্সিগঞ্জ	৫	৪৫	কাজ	৫		(স্বাক্ষর)
১৫	শ্রী: মন্সিগঞ্জ	৫	৪৬	কাজ	৫		(স্বাক্ষর)

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
 Local Government Engineering Department (LGED)
 Public Consultation with Stakeholders

Name of Community Road: Goopalpur Gps - Raynagon Bazar Road Date: ৩০/৩/২৫

Road ID: 382774230

Place of Consultation: মোহুরি, কালিগঞ্জ

Village: মোহুরি (সামান) Ward No.: ০১

Union: কালিগঞ্জ

Upazila: কালিয়ান্দী

District: পুর্ব কালিগঞ্জ

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	শ্রী.খা.মোহা.প্রিয়	পুরুষ	৫৪	ভাবনা	মোহুরি-		
২	শ্রী. না.লি.কান্ত	৷	২৫	ছাত্র	৷		
৩	শ্রী.ল.সি.স.স্বপ্ন	৷	৩৫	কৃষক	- ৷		
৪	শ্রী. ন.সান	৷	২৫	ছাত্র	ভায়সপুর		
৫	শ্রী. বিজয়.স্বপ্ন	৷	৫০	কৃষি	মোহুরি		
৬	শ্রী. স্বপ্ন	৷	৩৩	কৃষক	৷		
৭	শ্রী. মোহা.স্বপ্ন	৷	২৫	৷	৷		
৮	শ্রী. মোহা.স্বপ্ন	৷	৬৪	৷	৷		
৯	শ্রী. কামা.স্বপ্ন	৷	৭২	ছাত্রী	৷		
১০	শ্রী. স্বপ্ন	৷	৪৩	শ্রমিক	৷		
১১.							

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Pangsha-Kalukhali Road,
 Road ID: 382774227 Kalkhalola-Amuder
 Place of Consultation: কালখলিগাওঁ
 Village: শিবগাঁও ইউনিয়ন Ward No.: ০৬ Union: কোমলগঞ্জ
 District: কুমিল্লা

Date: ৬/১০/১৬
 Upazila: কোমলগঞ্জ

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	সুজাতা খান	মহিলা	৭০	কৃষি	শিবগাঁও		
২	সুজাতা খান	মহিলা	৭৫	কৃষি	শিবগাঁও		
৬	গোবিন্দ	মহিলা	৩৫	স্বামী	শিবগাঁও		স্বাক্ষর
৪	মো: তুহাৎ ইসলাম	মহিলা	২০	ছাত্র	শিবগাঁও		মো: তুহাৎ ইসলাম
৫	মো: সাদিক	♂	২০	ছাত্র	শিবগাঁও		স্বাক্ষর
৬	মো: জাহিদ	♂	৫০	কৃষি	শিবগাঁও		স্বাক্ষর
৭	মো: মাহবুবুল হক	♂	৬২	কৃষি	শিবগাঁও		স্বাক্ষর
৮	মুজিব হোসেন	মহিলা	৩৫	স্বামী	শিবগাঁও		স্বাক্ষর
৯	সুজাতা খান	মহিলা	৬৫	কৃষি	শিবগাঁও		স্বাক্ষর
১০	মুজিব	মহিলা	২০	ছাত্র	শিবগাঁও		স্বাক্ষর
১১	গোবিন্দ	♂	২৭	স্বামী	শিবগাঁও		স্বাক্ষর

